

Bolivar Power Station

Operational Environmental Management Plan

Guidelines for the operational environmental management of the Bolivar Power Station.

May 2023

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Revision History

The Bolivar Power Station (BPS) Operations Manager in conjunction with the Health, Safety and Environment (HSE) Manager is responsible for the revision and update of this Operation Environmental Management Plan (OEMP) for the BPS. A new revision date is required with any updates or revisions, and all major revisions will be circulated to those on the Email Distribution List once the revision has been approved by the Iberdrola Executive General Manager-Operations (EGMOP) and General Manager-Operations. This OEMP is to be reviewed on an annual basis by the HSE Manager and BPS Operations Manager and other stakeholders as required. Review may also take place immediately after any significant incident or change to the activities, products or services or material changes in the operating conditions.

This OEMP is subject to change throughout the life of the BPS when new or updated information is required.

Date	Author	Version	Revision Notes
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Email Distribution List

Company	Position / Role
Iberdrola Australia SAGT Pty Ltd	Website – provides details of the current version and instructions for obtaining information about the OEMP.
Department for Infrastructure and Transport	Representative
City of Salisbury Council	Representative
SA Water	Representative

Key Emergency Service Contact Details

Organisation	Telephone Number
All Emergencies (Fire, Ambulance, Police)	000
SA Water	1300 729 283
SA Environmental Protection Authority	(08) 8204 2004

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1. Definitions

Term	Meaning
AQIA	Air quality impact assessment
BPS	Bolivar Power Station
BWWTP	Bolivar Waste-Water Treatment Plant
DA	Development Application
DP	Deposited Plan
DPTI	Department of Planning, Transport and Infrastructure
EPA	SA Environment Protection Authority.
EPL	Environment Protection Licence.
ERP	Emergency Response Plan – A document that defines the procedures processes and contact details in the event of an emergency.
GCB	Generator circuit breaker
GE	General Electric
Ha	Hectare
HSE	Health, Safety and Environment.
HSMP	Health & Safety Management Plan.
HV	High voltage
IASAGT	Iberdrola Energy SAGT Pty Ltd
JHA/SWMS	Job Hazard Analysis or Safe Work Method Statement. A document that identifies and ranks the likelihood and severity of any potential risks and determines control measures required to mitigate those risks.
MFS	Metropolitan Fire Service
NEM	National Electricity Market
OCC	Operations Control Centre
OCGT	Open cycle gas turbine
OEMP	Operation Environmental Management Plan.
Pollution Incident	An incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.
PPE	Personal protective equipment
RO	Reverse Osmosis
Site	The area defined for the Bolivar Power Station at 9 Bolivar Interchange Connector Road, Bolivar SA.
20' / 40'	20-foot and 40-foot containers

2. Introduction

2.1 Background

In 2017 the South Australian Government constructed an emergency power plant, with four generation assets installed at Lonsdale and five generation assets installed at Elizabeth South. The emergency power plant was built to help mitigate the risk of load shedding events in South Australia.

The South Australian Government invited tenders for the lease of the generation assets. On 27 August 2019 a lease agreement was awarded to Iberdrola Australia SAGT Pty Ltd (IASAGT) (Previously known as Infigen Energy SAGT Pty Ltd) for the generation assets at Lonsdale for a period of 25 years. Under the terms of the lease, IASAGT agreed to relocate the generation assets from Lonsdale to Bolivar, South Australia.

Development Approval (DA 145/V041/20) was granted 29 May 2019 by the Minister of Planning to allow IASAGT to operate the turbines at the Lonsdale site until 31 May 2023. Approval was also obtained from the Office of the Technical Regulator (OTR) on 22 August 2019 and the gas turbine project was endorsed by the Department for Energy and Mining on 14 November 2019. IASAGT operated the Lonsdale gas turbines commercially until the 30 April 2022. On the 1 May 2022 the disassembly for the relocation of plant to Bolivar commenced. Commissioning on fuel oil was completed on the 23 December 2022. Fuel gas commissioning is expected to be completed in May 2023.

A Development Application for the construction and operation of a 123 MW Electricity Generating Plant at the Bolivar site was submitted in August 2020, and pursuant to Section 49 of the *Development Act 1993*, was approved by the Minister for Planning and Local Government on 21 December 2020 (DA 361/V025/20).

2.2 Site location

The Bolivar Power Station is located at 9 Bolivar Interchange Connector Road, Bolivar, South Australia on a sparsely vegetated 3.1 ha rectangular site within the SA Water Wastewater Treatment Plant (WWTP) land holding, which comprises multiple allotments under ownership by SA Water. Bolivar WWTP treats approximately 60% of metropolitan Adelaide's sewage, with operations and management delivered in partnership between SA Water and Allwater. The WWTP operating plant is located about 300 metres to the north of the BPS. Figure 1.



Figure 2: BPS site location

The recently completed North-South Motorway bisects the SA Water land. The area east of the road corridor is undeveloped open land that borders the recreational space surrounding Little Para River watercourse. The South East Australia (SEA) Gas, Port Campbell to Adelaide (PCA), underground high-pressure gas transmission pipeline traverses the land parcel in this location.

The west-northwest perimeter of the land adjoins an existing unsealed access track accessible via the Bolivar WWTP operational area to the north, and largely serves to provide access to SA Water/ Allwater operational staff for ongoing land management purposes. Beyond the unsealed access track lies the SA Water ground-mounted solar photovoltaic development which supports the ongoing operations of the BWWTP.

2.3 Operation Description

The Bolivar Power Station comprises four General Electric (GE) aeroderivative TM2500 trailer mounted turbines, with associated equipment. The turbines are capable of dual fuel operation i.e., natural gas and diesel fuel; however, will primarily operate on natural gas, with the diesel fuel used as a backup. Diesel fuel may be used up to approximately 20% of operation. The gas will be supplied to the Facility via the new gas pipeline built by EPIC Energy, while the diesel fuel will be supplied via road tanker and stored on-site.

The BPS is configured to operate in Open Cycle Gas Turbine (OCGT) mode and will operate as a 127.5 MW peaking power generation plant. Open Cycle Gas Turbines generate electricity for 'short' durations during times of peak electricity demand. Each turbine unit has a nominal output of 30 MW.

In addition to the gas turbines, there is one 160 kVA diesel-fired, reciprocating engine that provides emergency power to essential loads when the BPS is isolated from the grid. The emergency generator is restricted to island-mode operation and cannot export to the network. Figure 2 shows the BPS layout.

Iberdrola operates the BPS to respond to market conditions. Based on modelling forecasts of previous market conditions in South Australia, Iberdrola anticipates that it is likely to operate the BPS as follows:

- During demanding market conditions the turbines could operate between 2-4 hours per day on average which equates operation of 610 - 876 hours (7-10%) per annum;
- Approximate average operating hours under more typical market conditions of 260 hours (3%) per annum is anticipated;
- Based on approximate average operating hours of 260 hours per annum the bps is expected to be run for about 200 hours during the 'day' (7am to 10pm) and about 66 hours during the 'night' (10pm to 7am);
- For the 'day' operations (approximately 200 hours):
 - approximately 134 hours is expected to occur between 9am - 5pm; and
 - approximately 66 hours is expected to occur between 7am - 9am and 5pm - 10pm, with the majority of those hours occurring in Q1 and Q3;
- Approximately 10% of the overall expected operating hours is expected to occur on weekends, with the majority of starts expected between 2pm and 7pm;
- The average amount of time that the BPS will operate once started is expected to be about 2 - 4 hours on weekdays and 2 hours on weekends.

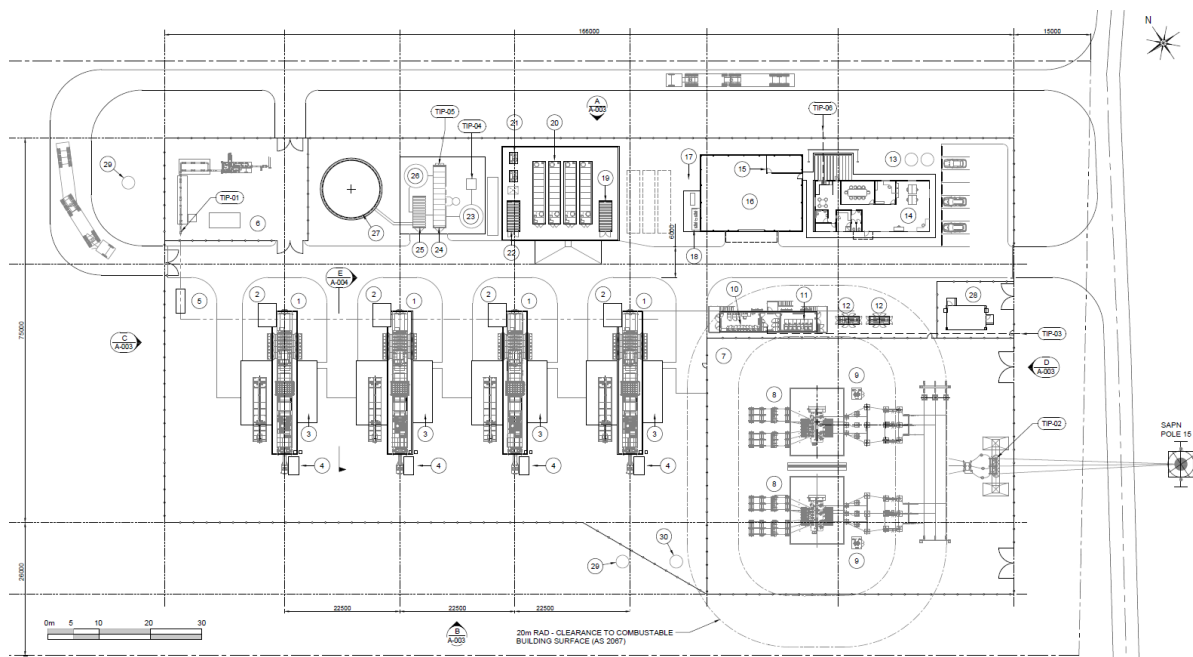


Figure 3: BPS Site General Arrangement

IASAGT is the lessee and operator of the BPS. Under normal circumstance BPS operations staff will be present on site Monday to Friday. The BPS Operations Manager oversees the day-to-day operations of the facility.

Staffed operational hours are typically Monday to Friday from 7am to 5pm. Remote operation of the BPS has been implemented so that the BPS facility can be monitored remotely by the site operations staff, as well as by the Iberdrola Operations Control Centre (OCC) in Sydney.

The operational activities at the BPS facility include but are not necessarily limited to the provision of all technical labour, supervision, parts, materials, plant and equipment as necessary to perform plant operations and maintenance. In particular, the work involves the following:

- Scheduled and unscheduled maintenance of the plant;
- Provision of consumables, spare parts, tools and equipment;
- Remote operations and surveillance of the generating plant;
- Operation of the Balance of Plant (BOP) High Voltage (HV) equipment; and
- Operational reporting and updates/revisions to documentation.

2.4 Iberdrola Australia SAGT Pty Ltd

Any Iberdrola Australia management systems, policies or procedures that are referred to in this document apply equally to IASAGT for the purposes of this OEMP.

2.5 Purpose and Objectives

The purpose of this OEMP is to:

- Provide a management framework that aims to control potential operational impacts on the environment. It includes practical and achievable performance requirements; mitigation strategies; a system of monitoring, reporting and auditing; and process for implementation of corrective action;
- Ensure all operation staff are made aware of the potential operational impacts on the environment, and the associated management strategies within which they are expected to conduct their activities;
- Provide evidence of compliance with our development conditions of consent, relevant legislation, policies, guidelines and requirements to Local, State and Commonwealth Authorities; and
- Provide stakeholders with the assurance that the operation of the site is being managed in an environmentally acceptable manner.

The objectives of this OEMP are to:

- Provide for the effective management of the environmental concerns and potential adverse environmental effects arising from the BPS;
- Assign management responsibilities and to define managerial and reporting requirements;
- Identify appropriate impact mitigation measures and management strategies in response to potential adverse environmental effects; and
- Establish a system to test the effectiveness of environmental management actions implementation, by way of audits and inspections.

2.6 Commitment, Policy & Targets

Iberdrola has established and implemented environmental management goals and targets for BPS that are consistent with the Iberdrola HSE policy including the commitment to measuring and improving HSE performance. These targets will assist in achieving Iberdrola’s overall goal of Zero Harm, which means managing the site to ensure the environment is not harmed by our activities. Environmental statistics shall be reported on a monthly basis. Iberdrola shall communicate these goals and targets during relevant site specific HSE inductions. Iberdrola requires that set environmental goals and targets are aligned with the BPS Operations Manager goals and targets, and the HSE Manager will monitor performance against the designated goals and targets on a regular basis as part of monthly HSE meetings.

The Iberdrola environmental management targets are given below in **Table 1**.

Lagging Indicators	Iberdrola’s Target
Number of environmental pollution incidents (No environmental incidents within the reporting month)	0.0

Leading Indicators	Iberdrola target
Percentage of Iberdrola and OEMP environmental Audits Performed Against Schedule 2 (No of Audits Undertaken / Number of Audits Due X 100)	Between 80-90%
Number of environmental hazards/Inspections reported (Number of hazards recorded within Iberdrola’s hazard and incident management system within the reporting month)	1 per month
Number of HSE monthly meetings held and minutes recorded (excluding months where a Quarterly Business Review meeting is held and HSE is on the agenda) (Number of monthly meetings held / number of meetings due x 100)	Between 80-90%

Table 1: BPS Environmental Management Targets

2.7 Environmental Policy

Iberdrola is committed to having a positive impact on the environment. All employees, contractors and visitors are required to comply with the Iberdrola HSE Policy. The Policy is intended to clearly inform all relevant parties that HSE is an integral part of Iberdrola operations, and this commitment is further reinforced by approval of the Policy by Iberdrola’s CEO and Chairman. The HSE Policy can be viewed at the BPS site office. It is obligatory for everyone on site and suppliers to comply with all environmental requirements as outlined in this OEMP and the HSE Policy.

3. Statutory Requirements

3.1 Conditions of Approval

This OEMP shall be read in conjunction with all related BPS HSE documents as well as other associated management plans implemented by Iberdrola. The environmental impacts addressed in this OEMP reflect the scope and level of environmental protection, care and authorisations obtained during the operation. It formalises the processes and procedures which will ensure compliance with the obligations set out in these documents, and that the appropriate levels of environmental standards are achieved. All persons involved in the operations of the BPS shall undertake their respective activities in accordance with the relevant requirements of this OEMP; this includes employees, contractors and sub-contractors. Awareness of relevant requirements shall be included within a site-specific health, safety and environment induction and / or through other appropriate forums such as toolbox talks.

The Minister of Planning approved the development (DA 361/V025/20) on 21 December 2020. These Conditions of Approval provide clear guidance for the BPS environmental management requirements and expects Iberdrola to maintain systems that ensure compliance with these conditions and all associated approvals, permits, licences and agreements.

Table 2 provides a list of the DA 361/V025/20 Conditions of Approval and summarises of how Iberdrola has or will continue to comply with the requirements.

Condition number	Condition requirement summary	Iberdrola Compliance
1	Except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in accordance with the details and stamped plans submitted in Development Application 361/V025/20.	The final design submitted for approval was based on the submitted and stamped plans, with minor amendments.
2	The following information shall be submitted for approval by the Minister for Planning and Local Government (and prepared in consultation with the relevant State agencies and Council) prior to the commencement of site works*: a. The final design, external colour, specification, layout and elevations of all permanent components of the development including (but not limited to) the turbines, substation, access roads and service connections;	The final design was submitted for approval and approved on the 21 January 2021.

Condition number	Condition requirement summary	Iberdrola Compliance
	<p>b. The final design, specification and layout of all temporary construction components of the development including (but not limited to) work compounds, site office, amenities, car parking areas and clean-down facilities. c. Final design of the noise attenuation treatment to the generating units.</p> <p>d. Final landscaping plan, including numbers, species and mature height levels, to provide a vegetation screen along the southern and eastern perimeters of the development site.</p>	
3	An Operational Environmental Management Plan (OEMP) prepared in consultation with relevant State Government Agencies and local Council and shall be submitted to the reasonable satisfaction of the Minister for Planning and Local Government prior to the commencement of commercial operations*** ¹ .	This Plan
	Operation of the development must be in accordance with the approved OEMP, which as a minimum shall include specific management measures or plans for the following environmental aspects:	See below
	<ul style="list-style-type: none"> Noise and vibration 	Section 6.2
	<ul style="list-style-type: none"> Air quality and dust 	Section 6.3
	<ul style="list-style-type: none"> Native flora and fauna 	Section 6.8
	<ul style="list-style-type: none"> Aboriginal heritage 	Section 6.9
	<ul style="list-style-type: none"> Weeds and pests 	Section 6.11
	<ul style="list-style-type: none"> Traffic and access 	Section 6.1
	<ul style="list-style-type: none"> Erosion and stormwater management 	Section 6.4.5
	<ul style="list-style-type: none"> Site rehabilitation (post construction) 	Section 6.10
	<ul style="list-style-type: none"> Waste management 	Section 6.6
	<ul style="list-style-type: none"> Storage and handling of hazardous substances 	Section 6.5
	<ul style="list-style-type: none"> Water quality 	Section 6.4
	<ul style="list-style-type: none"> Fire risk 	Section 6.7
	<ul style="list-style-type: none"> Contamination 	Section 6.12
	<ul style="list-style-type: none"> Public safety 	Section 6.13
	<ul style="list-style-type: none"> Emergency response planning 	Section 6.14
	<ul style="list-style-type: none"> Complaints management 	Section 7.4
4	Any security or external lighting attached to new buildings or structures shall be designed and constructed to conform with Australian Standard 4282-2019 and must be located, directed and shielded and of such limited intensity that no demonstrable nuisance or loss of amenity is caused to any person beyond the subject land.	This design requirement was implemented in the design and construction of the BPS.

¹ "Commencement of commercial operations"*** is defined as the formal commissioning of a completed project stage to connect to the electricity network.

Condition number	Condition requirement summary	Iberdrola Compliance
5	Commercial operation ^{***2} of the power plant must not commence until an acoustic report has been prepared by a suitably qualified Acoustic Engineer and provided to the reasonable satisfaction of the Minister for Planning and Local Government and the Environment Protection Authority demonstrating compliance with the <i>Environment Protection (Noise) Policy 2007</i> at any residential noise sensitive receiver.	An acoustic report has been submitted
6-8	Requirements for the BPS car parking and vehicle manoeuvring area, being all weather surface and well maintained, designed to specified Australian Standards, designed such that all vehicles can enter and exit in a forward direction	These requirements were integrated into the BPS design and construction.
9	All trade waste and other rubbish shall be stored in covered containers prior to removal and shall be kept screened from public view.	Section 6.6
10	The stormwater management system must be constructed and implemented in accordance with the details contained in the final version of the Bolivar Power Station Project storm water management plan (Revision C) prepared by M & N, dated 9 July 2020.	Section 6.4 Section 7.7
11	Any substances by their nature or volume that have the potential to cause environmental harm must be stored within an impervious bund with a net capacity of at least 120% of the largest vessel within the bunded area. In addition, bunding to the fuel storage tank area must be installed prior to the commencement of the activity of fuel storage on the subject site. Refer to the EPA Guideline Bunding and spill management for further guidance http://www.epa.sa.gov.au/files/47717_guide_bunding.pdf .	Section 5.2.5 Section 6.4.4 Section 6.4.5

Table 2: DA 361/V025/20 Conditions of Approval

3.2 Environment Protection Licence

IASAGT are required to hold an Environment Protection Licence (EPL) administered by SA Environment Protection Agency (EPA) under the SA *Environmental Protection Act 1993* at all times of operation of the BPS facility. IASAGT was issued an Environmental Protection Licence (EPL) (Licence No. 5172) for operation of the BPS facility on 5 December 2022, which will be reviewed on an annual basis by the EPA.

The licence conditions relate to control of emissions and pollution, operational management and monitoring and reporting requirements. **Table 3** summarises the reporting and monitoring requirements provided in the Licence No. 51712.

Condition number	Condition requirement summary	Iberdrola Compliance
1	Control Of Emissions	

² "Commencement of commercial operations^{****} is defined as the formal commissioning of a completed project stage to connect to the electricity network.

Condition number	Condition requirement summary	Iberdrola Compliance
1.1	<p>Dust Prevention (S-7)</p> <p>1.1 The Licensee must take all reasonable and practicable measures to prevent dust from leaving the Premises.</p>	The site has either bitumen or blue metal surface to minimise dust creation
1.2	<p>Stormwater (S-15)</p> <p>The Licensee must:</p> <p>1.2.1 take all reasonable and practicable measures to prevent contamination of stormwater at the Premises; and</p>	Section 5.2
	<p>1.2.2 implement appropriate contingency measures to contain any contaminated stormwater at the Premises unless and until the contaminated stormwater is treated to remove the contamination, or is disposed of at an appropriately licensed facility.</p>	Section 6.4.5
2	<p>Operational Management</p>	
2.1	<p>Bunding (S-5)</p> <p>The licensee must ensure that all chemicals or chemical products are stored, loaded or unloaded in an appropriately banded area.</p> <p>NOTES</p> <p>The EPA will assess the appropriateness of any bund against the EPA's 'Bunding and Spill Management Guidelines'.</p>	Section 5.2.5
2.2	<p>Complaints Register (S-1):</p> <p>The Licensee must:</p> <p>2.2.1 prepare and maintain a register of all complaints concerning environmental issues.</p> <p>2.2.2 ensure the register includes:</p> <ul style="list-style-type: none"> a the date and time that the complaint was made; b details of the complaint including the likely cause of events giving rise to the complaint; c the contact details of the complainant (if permitted by the complainant); and d details of any action taken in response to the complaint by the Licensee. 	Section 7.4
2.3	<p>Demineralised Water Injection System (U-709)</p> <p>The Licensee must:</p> <p>2.3.1 effectively maintain a demineralised water injection system for each turbine on the Premises;</p> <p>2.3.2 inject demineralised water into the combustor of each operating turbine using the demineralised water injection system;</p> <p>2.3.3 ensure that the injection rate of demineralised water into each operating turbine is no less than 5660 litres per hour.</p>	Section 5.2.4
2.4	<p>Emergency Spill Kits (S-22)</p> <p>The Licensee must ensure that an appropriate emergency spill kit is kept on the Premises at all times in locations where listed wastes are stored, loaded or unloaded and is appropriately used in the event of a spill.</p>	Section 6.5
2.5	<p>Pollution Control Equipment Register (S-2)</p>	Section 7.3

Condition number	Condition requirement summary	Iberdrola Compliance
	<p>The Licensee must:</p> <p>2.5.1 maintain all Pollution Control Equipment to ensure that pollution is minimised; and</p> <p>2.5.2 keep a written record of all inspections of Pollution Control Equipment, which includes:</p> <ul style="list-style-type: none"> a the name of the recording officer; b the date of each inspection of the equipment; c details of the equipment that was inspected; d an assessment of whether the equipment was working effectively; and e the action taken (if required) to rectify any faults or failures. <p>2.6.3 Comply with the Plan (or any revised Plan approved in writing by the EPA) forthwith upon approval in writing by the EPA.</p>	
2.6	<p>Site Noise Mitigation (U-1582)</p> <p>The Licensee must:</p> <p>2.6.1 take all reasonable and practicable measures to prevent noise from leaving the Premises;</p> <p>2.6.2 develop a Noise Management Plan to the satisfaction of the EPA by the compliance date listed below;</p> <p>2.6.3 ensure the Noise Management Plan includes, but is not limited to:</p> <ul style="list-style-type: none"> a detailed actions and response strategies that will be implemented to prevent and minimise noise emissions; b a methodology and framework for reporting to the EPA on the implementation and effectiveness of the Noise Management Plan; and c a methodology and framework for providing public access to the Noise Management Plan (or any revised plan approved by the EPA) and to noise reports submitted pursuant to this licence; <p>2.6.4 implement the Noise Management Plan approved in writing by the EPA (or any revised plan approved in writing by the EPA).</p>	Section 6.2
Compliance Date: 31 Jan 2023		
3	Monitoring and Reporting	Section 7.3
3.1	<p>Noise Monitoring and Reporting (U – 1579)</p> <p>The Licensee must:</p> <p>3.3.1 engage an acoustic engineer to:</p> <ul style="list-style-type: none"> a undertake noise measurements to determine the noise levels and the presence of noise characteristics from operations conducted at the Premises, when measured and adjusted at sensitive receptors in accordance with the Environment Protection (Noise)Policy, 2007; b ensure that the noise measurements are undertaken when each power generation turbine is operating under stable conditions, at a minimum of 90% of its nameplate capacity; c ensure that the noise measurements are undertaken between the hours of 10pm to 7am; <p>3.1.2 prepare a report, to the satisfaction of the EPA, by the compliance date listed below, which includes, but need not be limited to:</p>	Section 6.2

Condition number	Condition requirement summary	Iberdrola Compliance
	<p>a the results of the noise measurements that are undertaken in accordance with paragraph 1 of this condition, including a comparison of the results against previously submitted noise modelling reports and the applicable noise levels in the <i>Environment Protection (Noise) Policy, 2007</i>;</p> <p>b details of the local weather conditions during the noise measurement period (including wind speed, direction, temperature); and</p> <p>c details of the locations of the noise measurement locations, and a rationale for the selection of these locations; and</p> <p>3.1.3 ensure that, at least seven days prior to undertaking the noise measurements, the proposed dates and times of the noise measurements are submitted to the EPA in writing.</p>	
Compliance Date: 31 May 2023		
3.2	<p>Turbine Operation Recording and Reporting (U – 777)</p> <p>The Licensee must:</p> <p>3.3.1 maintain a written record of the operation of each turbine unit on the Premises, including but not limited to:</p> <p>(a) the time, date and duration of operation;</p> <p>3.3.2 submit to the satisfaction of the EPA a summary of the records kept for the previous six months (or part thereof), by the 31st day of July and the 31st day of January of each year.</p>	Section 7.3.1
4	Administration	
4.1	<p>Annual Return and Payment of Annual Fees (A – 4)</p> <p>For the purposes of section 48(2)(a) of the Act, the date in each year for the lodgement of the Annual Return is no later than 90 days before the anniversary of the grant or renewal of the Licence; and</p> <p>4.1.1 For the purposes of section 48(2)(b) of the Act, the date in each year for the payment of Annual Authorisation Fee is the anniversary of the grant of the Licence.</p>	Section 7.3.2
4.2	<p>Approval of Operating Processes (A-6)</p> <p>The Licensee must not undertake changes to operating processes conducted pursuant to the Licence at the Premises without written approval from the EPA, where such changes:</p> <p>4.2.1 have the potential to increase emissions or alter the nature of pollutants or waste currently generated by, or from the licensed activity; or</p> <p>4.2.2 have the potential to increase the risk of environmental harm; or</p> <p>4.2.3 would relocate the point of discharge of pollution or waste at the Premises.</p>	

Condition number	Condition requirement summary	Iberdrola Compliance
4.3	<p>Approval of Works (A-5)</p> <p>The Licensee must not construct or alter a building or structure, or install or alter any plant or equipment, for use of an activity undertaken pursuant to the Licence at the Premises without written approval from the EPA, where such changes:</p> <p>4.3.1 have the potential to increase the emissions or alter the nature of pollutants or waste currently generated by, or from the licensed activity; or</p> <p>4.3.2 have the potential to increase the risk of environmental harm; or</p> <p>4.3.3 would relocate the point of discharge of pollution or waste at the Premises.</p>	

Table 3: Licence No. 51712

A copy of the BPS EPL will be publicly available on the EPA public register, on Iberdrola’s website or by contacting Iberdrola using contact details on Iberdrola’s public website. A copy of the approved OEMP will also be available on the Iberdrola website.

4. Environmental HSE System

4.1 Environmental Policy

Iberdrola is committed to having a positive impact on the environment. All employees, contractors and visitors are required to comply with the Iberdrola HSE Policy. The Policy is intended to clearly inform all relevant parties that HSE is an integral part of Iberdrola operations, and this commitment is further reinforced by approval of the Policy by Iberdrola’s CEO and Chairman. The HSE Policy can be viewed at the BPS site office. It is obligatory for everyone on site and suppliers to comply with all environmental requirements as outlined in this OEMP and the HSE Policy.

4.2 Integrated HSE Management System

Iberdrola’s integrated Health, Safety and Environment (HSE) Management System has been developed to establish and document a framework of requirements, policies, standards, guidelines and management practices for consistent and continuous improvement in health, safety and environmental performance and to help ensure legal compliance.

The HSE Management System is based on the requirements in:

- Standard for Operational Environment Management System; and
- Standard for Safety Management Systems.

The System is designed to meet legislative compliance and to align with recognized management system principles of Plan, Do, Check, Review:

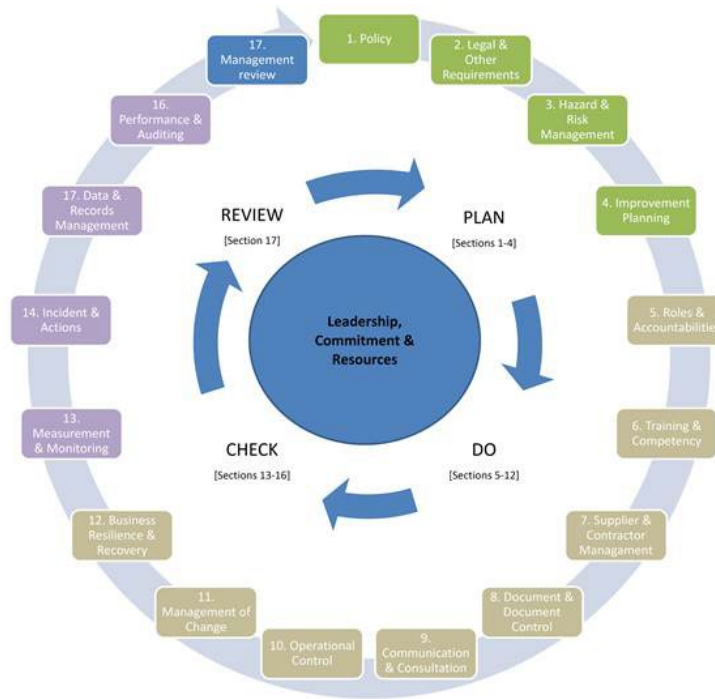


Figure 4: Management System Cycle

Figure 3 illustrates the 17 components of Iberdrola’s HSE Management System which complies with the requirements of ISO 18001 and 14001 and is encompassed within the “Plan Do Check Review” model of continuous improvement.

4.2.1 HSE Compliance Guides

The Iberdrola HSE Management System Compliance Guides set the minimum requirements for a number of specific site activities. The BPS Operations Manager is responsible for providing all contractors with the full version of all relevant Iberdrola HSE Management System Compliance Guides as is relevant to the work they are procured to undertake. Each employee or contractor shall be required to ensure that task specific procedures and guidelines are in place to appropriately manage all tasks and activities.

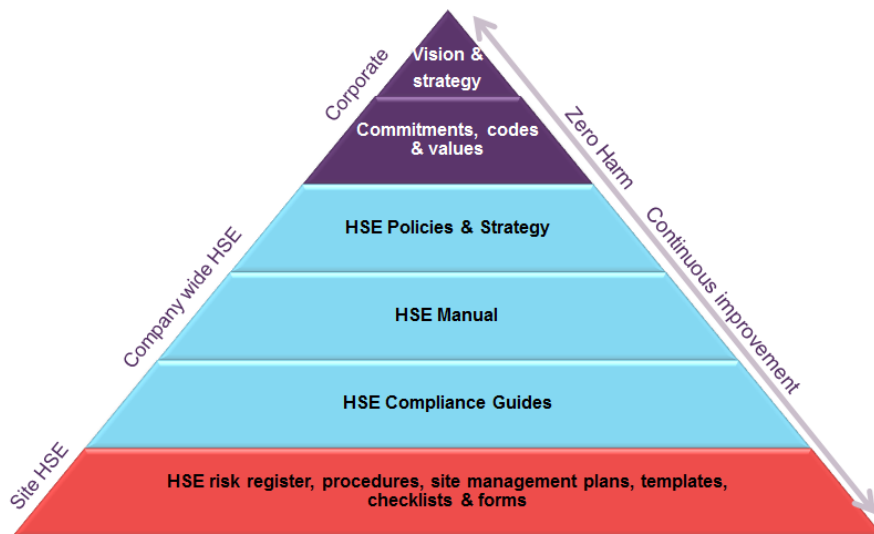


Figure 5: HSEMS Document Structure

Figure 4 illustrates the hierarchy of documentation found within the hierarchy commences with the Iberdrola vision, strategy and commitment material including policies followed by HSEMS Manual and minimum standard Compliance Guides. The lower section of the structure includes site management plans such as this OEMP, forms, templates, checklists and audit tools that are used on site.

4.3 BPS Environmental Management Structure and Responsibility

Iberdrola has the responsibility to oversee the implementation of the environmental responsibilities of the BPS, and requires its employees and contractors to conduct all its operations in accordance with the relevant requirements.

To ensure compliance, Iberdrola and contractors must have:

- Identified the approval and other statutory requirements;
- Allocated responsibilities for management of issues;
- Reviewed the proposed activities in the context of potential impacts;
- Developed suitable environmental management controls to mitigate the project’s impacts.

Details regarding the frequency and scope of environmental monitoring and recording, the complaints management process, and the emergency / incident response procedures can be found in the management sub-plans contained within this document.

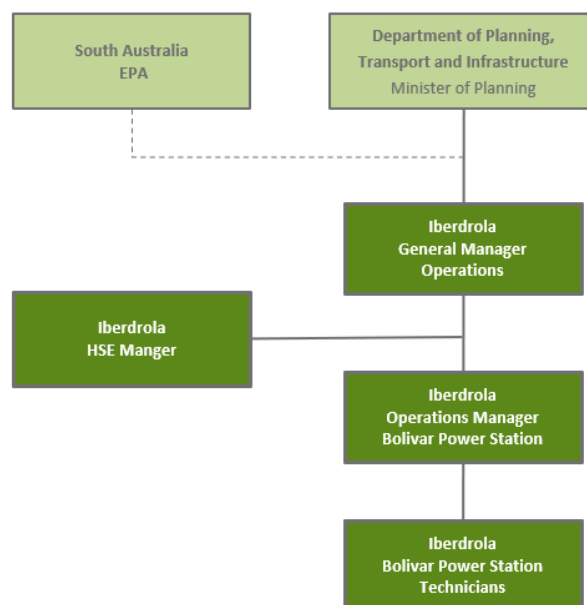


Figure 6: BPS environmental management structure

4.3.1 Environmental Management Responsibilities

The responsibilities of key BPS personnel include, but are not necessarily limited to, the following.

Role	Responsibility
Iberdrola General Manager Operations	<p>It is the responsibility of the General Manager Operations to ensure that sufficient resources are available to implement, develop and maintain this OEMP throughout the operational life of the BPS.</p> <p>This role will ensure actions and delegations have been completed to introduce and manage systems to meet Iberdrola's project and corporate requirements.</p> <p>The General Manager Operations is accountable for the environmental performance of the BPS.</p>
Operations Manager Bolivar Power Station	<p>The BPS Operations Manager reports to the General Manager Operations. The Operations Manager is responsible for the practical day-to-day implementation of this plan.</p> <p>In addition, the Operations Manager will:</p> <ul style="list-style-type: none"> • Review incident/hazard reports, minutes of meetings and audit reports; • Conduct or participate in regular site environment inspections; • Participate in incident/hazard investigations where appropriate and coordinates corrective actions, if required; • Foster a continuous improvement approach to all Health, Safety and Environment (HSE) matters; and • Report all environmental incidents and near misses with significant potential to the Iberdrola HSE Manager and Iberdrola General Manager Operations
Iberdrola HSE Manager	<p>The Iberdrola HSE Manager supports the Iberdrola General Manager Operations and the BPS Operations Manager. The Iberdrola HSE Manager is to provide advice and support to assist in the development, review and implementation of this OEMP.</p> <p>In addition, the Iberdrola HSE Manager will:</p> <ul style="list-style-type: none"> • Support the Iberdrola General Manager Operations and BPS Operations Manager and provide environmental management advice during the operations of the BPS; • Review and monitor that the environmental risk management requirements within this plan are met; • Review incident/hazard reports, minutes of meetings and audit reports; • Foster a continuous improvement approach to all HSE matters; • Attend or lead the investigation of any environmental incident or near miss as required; and • Conduct, lead or arrange for regular environmental inspections and audits and provide feedback and recommendations.
BPS Technicians	<ul style="list-style-type: none"> • All BPS technicians must carry out their work in a manner consistent with Iberdrola's HSE Policy. They are responsible for the environmental impacts of their own actions and have a duty to carry out their work in a manner which does not present a risk to the environment. • All personnel are required to report any deviation from the conditions anticipated in this OEMP and report environmental incidents and risks to the BPS Operations Manager or Iberdrola HSE Manager, as appropriate.

Table 4: BPS Roles and Responsibilities

4.4 Environmental Pollution Incidents

Figure 6 provides a flow chart for the reporting and management of environmental pollution incidents.

In accordance with general requirements of EPLs, and in the unlikely event of an incident, Iberdrola shall report pollution incidents *immediately* to the South Australian EPA, South Australian Health, South Australian Metropolitan Fire Service, SafeWork SA and the relevant local council/s. 'Immediately' has its ordinary dictionary meaning of promptly and without delay.

BPS has in place an incident reporting and communication protocol, which will be followed in the event of a pollution incident. Anyone who identifies a pollution incident must verbally report it to site management immediately. Site management must then verbally notify the Iberdrola HSE Manager immediately. To ensure accurate information is provided, the Iberdrola HSE Manager shall arrange with the BPS Operations Manager a notification and all subsequent communication of the incident to environmental regulatory authorities as required.

Iberdrola General Manager Operations shall be verbally notified of all environmental incidents within 24 hours. SA Water is to be notified of any pollution incidents that have occurred in the drinking water catchment where there are potential impacts on water quality.

The BPS Incident Register of all environmental incidents or potential incidents (near miss) shall be maintained by the BPS Operations Manager and Iberdrola HSE department. This register will be made available for inspection upon request by appropriate regulatory authorities.

Iberdrola must ensure that an appropriate level of investigation is undertaken for all environmental incidents relating to the operation of BPS. The investigation must be undertaken in a timely manner without delay. Iberdrola has an implemented system whereby any follow up actions from these incidents can be recorded and status tracked to completion. The BPS Emergency Response Plan (ERP) must be referred to as required in the unlikely event of a pollution incident at BPS.

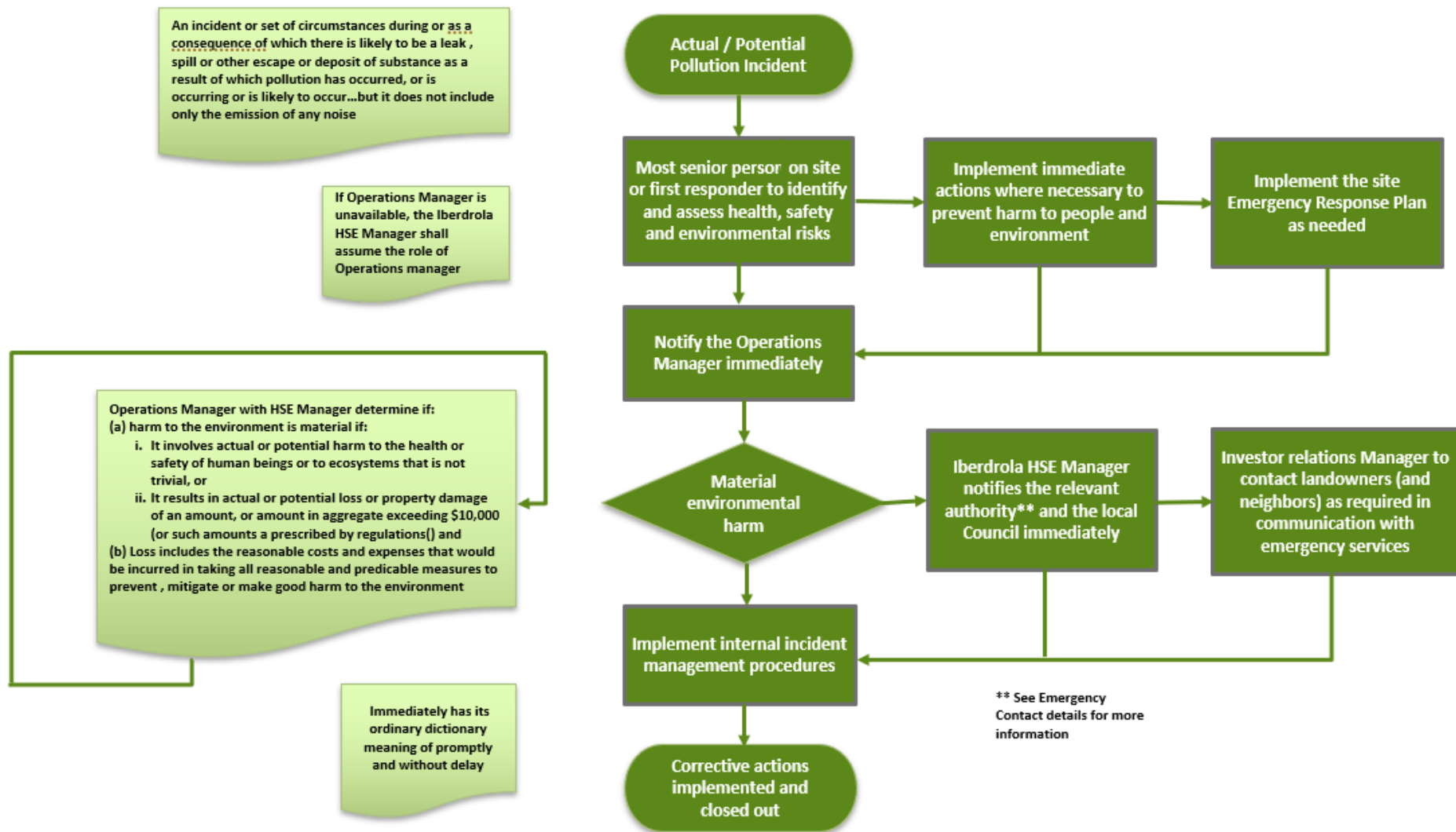


Figure 7: Iberdrola Pollution Incident Response Flow Chart

4.5 Site Specific HSE Risk Register

The Site Specific HSE risk register provides a detailed list of all identified site hazards and the control measures implemented in order to eliminate or minimise the risk of harm to the environment. The site-specific risk register will be developed and administered by Iberdrola and ensures the risk assessment takes into consideration both the likelihood of an environmental hazard, aspect or impact becoming an event or incident and the consequence and severity of such an incident or event and ensures that prior to the implementation of control measures, the proposed measures are reviewed to ensure they do not create a new hazard or impact.

The hierarchy of controls shall be applied so that risks associated with identified hazards are eliminated or controlled to as low as is reasonably practicable. The results of the site-specific risk register are communicated to everyone during relevant site HSE inductions as they are relevant to the work they are undertaking or sites they are visiting. The risk register is an agenda item on the Monthly site HSE meetings and is formally reviewed at least annually.

5. BPS Facility Description

5.1 BPS Site

The BPS site will comprise of the following:


- Electricity generating plant, infrastructure and equipment, including:
 - Four diesel/gas turbines GE aeroderivative TM2500;
 - One standby diesel generator;
 - Four diesel fuel storage tanks with capacity of 240 kL and associated equipment, including a fuel off-load area for delivery trucks;
 - 2 x 11/66kV Switchyard transformers;
 - Plant compressed air system
 - Plant control system Internal Use
 - Oily water separator and stormwater improvement device;
 - Reverse osmosis demineralization system
 - 500 kL demineralisation water storage tank; and
- Single story site office and facilities building
- Workshop/warehouse storage building
- Sealed hardstand areas and bunding
- Car parking area for vehicles
- Chainmesh security fence

The list of terminal points for the facility is provided below:

- Gas Fuel Supply – an inlet flange connecting the facility to an Epic Energy gas Pressure Reduction and Metering System (PRMS);
- Liquid Fuel Supply – a quick coupling inlet flange for diesel supply from third party diesel suppliers.
- Water Supply – connection to SA Water Potable Water Mains;
- Water Supply – connection to SA Water Bore Water supply;
- Wastewater – connection to SA Water Return Wastewater line;
- Telephone/ Internet – Connection to the closest Telstra Node;
- Generation Export – the substation 66kV landing gantry at the terminal point between the Project and SAPN 66 kV transmission line. The transmission line connects Bolivar Power Station to the Parafield Garden West Substation.

The BPS comprises four GE aero-derivative TM2500 trailer mounted turbines, with associated equipment, which was previously supplied by APR Energy to the Lonsdale site and subsequently moved to the Bolivar site. The turbines are capable of dual fuel operation i.e. natural gas and liquid fuel oil, however, they will primarily operate on natural gas which will be supplied via a pipeline, with the diesel fuel used as a backup. As a worst-case, diesel fuel may be used up to about 20% of the time and will be supplied via road tanker and stored on-site.

Table 5 summarises the components for each of the four gas turbine generators.

Turbine components	
Turbine	
<ul style="list-style-type: none"> • Gas turbine engine with turbine enclosure • Turbine gauge panel (TGP) • Fire protection aerosol canisters • Auxiliary skid, containing the following: <ul style="list-style-type: none"> – Turbine control panel – Hydraulic starting system – Turbine lube oil system – Off-line water wash system – Air inlet silencer with enclosure – Inlet air filter system – Standard annular combustion (SAC) system – Dual fuel with water injection system – Turbine exhaust – High speed coupling shaft – Ventilation fan assembly skid – Alignment system. 	

Turbine components

Generator

- BDAX62-170ERT air cooled generator,
- Brushless excitation system including permanent magnet
- Generator and main exciter
- Generator air filter and exhaust system
- Rotor earth fault monitor (REFM)
- Generator circuit breaker (GCB)
- Bus duct between Generator and GCB
- Neutral earthing transformer and resistor
- Instrument transformers
- Oil supply and cooling system
- Generator space heating
- Canopy/ enclosure.



Turbine Control House

A control house trailer is mounted separately to each of the four individual gas turbines and includes:

- Generator Control panel housing the following equipment:
- AVR (GE EX2100e)
 - Synchronising controls (Woodward SPM-D plus synch check relays)
 - Dual microprocessor-based protection units (Beckwith M-3425A – one only used)
 - Rotor earth fault monitor (Brush Prismic R10)
 - Fire and gas detection and protection equipment (eagle quantum)
 - Emergency Stop pushbutton
 - Metering
- Switchgear for the generator (and GT) auxiliaries
- Battery chargers and batteries (2 x 24 V DC, 1 X 125 V DC).



Cables link the Generator Trailer to the Control House Trailer

Table 5: BPS Components

5.2 Specific Environmental Management Controls

The Gas turbine generating units are diesel and natural gas fuelled with demineralised water injection for NOx abatement. The Gas Turbine Generators are in self-contained structures located in bunds to capture and inadvertent leakage of lubrication oil and diesel fuel.

Diesel fuel is supplied via road tanker and is stored onsite. The liquid fuel supply system at comprises:

- Diesel fuel unloading area (bunded);
- Fuel forwarding and unloading skids;

- Diesel fuel filter skids;
- Four 60m³ capacity fuel storage tanks (total capacity 240kl).

The diesel fuel supply system has been appropriately designed and positioned within a bunded, graded, compacted hard stand area which will ensure drainage into a blind collection sump in the event of any spills. This is described in more details in the following sections.

5.2.1 Fuel Tanker Unloading Area

The diesel fuel unloading area at the Bolivar site consists of a bunded, concrete pad area, formed with a gradient that drains into a blind collection sump (See **Figure 7**).

Bund capacity: The drive over area for tanker unloading has a total surface area of 58.5m² (13 m x 4.5m) and depth of 0.05 to 0.1 m, resulting in capacity of 2.44 m³ (2.44kL).

The area is sloped to a blind collection sump with a further capacity of 0.49m³ (490L), resulting in a total bund capacity of 2.93m³ (2.93kL). The collected water/oil/fuel in the sump will be pumped out as required by an EPA Licenced waste management contractor. Daily inspections during rainfall events and formal weekly site inspections will check the standing water level of these sumps. During tanker unloading, Iberdrola and the fuel contractor personnel will be on site monitoring the process and have drip and spill protection in place. Any minor spills will be cleaned up using portable spill kits located on site at the fuel storage and unloading area.



Figure 8: View of the Tanker Unloading Bay and Sump

5.2.2 Fuel Forwarding and Bulk Fuel Storage Area

The fuel storage area consists of a series of double skinned tanks and self-bunded fuel forwarding and unloading skids. Approximately 168,000 L of diesel is stored on site in three 56,000 L, double skinned storage tanks; this allows the power station to operate for 4 hours under full load conditions. When two tanks are in-service, this equates to 112,000 L

Bunding capacity: The bunded area for Fuel Storage and Forwarding has a total volume capacity of 313m³. This equates to 130% of the 240 m³ rated diesel fuel storage capacity.



Figure 9: Fuel Storage and Fuel Forwarding Bund at BPS

The area consists of a concrete bund constructed on a compacted hard stand area. The area is sloped to a blind collection sump from which collected water/oil will be pumped out as required by an EPA Licenced waste management contractor. Daily site inspections check the standing water level of these sumps and action as required.

5.2.3 Oil-filled Transformers

Two x 66kV (100MVA) Step-up Transformers are contained within sealed and impervious bunded areas. Each Transformer contains 25,300L of mineral oil, requiring a bunding requirement of 30,360L (120% capacity).

Bunding capacity: Each of the two transformer bunded areas has a total volume capacity of 43.3 m³.



Figure 10: Main transformer at BPS

Collected rainwater is drained from the transformer bunds by opening a manual valve and draining the bund contents into the oil water separator system which includes a Class 1 Full-Retention Oil-Water Separator followed by a Class 2 Stormwater Quality Improvement Device (SQID).

In the event of a high oil loss scenario, the oil will remain in the bund and be removed by an EPA Licenced waste removal contractor.

5.2.4 Reverse Osmosis (RO) Demineralised Water Treatment Plant

Process water is supplied to the BPS facility from a SA Water bore adjacent to the site. The demineralised water system consists of a 2-pass Reverse Osmosis (RO) water treatment plant and one demineralised water storage tank (500kl).

The GTGs at BPS require approximately 9800 l/hr of demineralised water when the units are operating on natural gas fuel at full load of 32 MW and require 6200 l/hr if running on diesel fuel at full load of 32 MW. This demineralised water flow is monitored via an electronic flow meter at the RO plant and GTGs and live via Supervisory Control and Data Acquisition (SCADA) screens located in the BPS and OCC control rooms.



Figure 11: RO Water Treatment Plant and Raw Water Storage Tank

Regular inspection and maintenance of the RO Plant and all associated pollution control equipment is undertaken in accordance with audit schedules outlined within this OEMP.

The RO system produces high purity demineralised water for the Gas Turbine NO_x (nitrous oxide) emission reduction system and creates a high salinity wastewater biproduct which is pumped to the SA Water WWTP high salinity plant for processing.

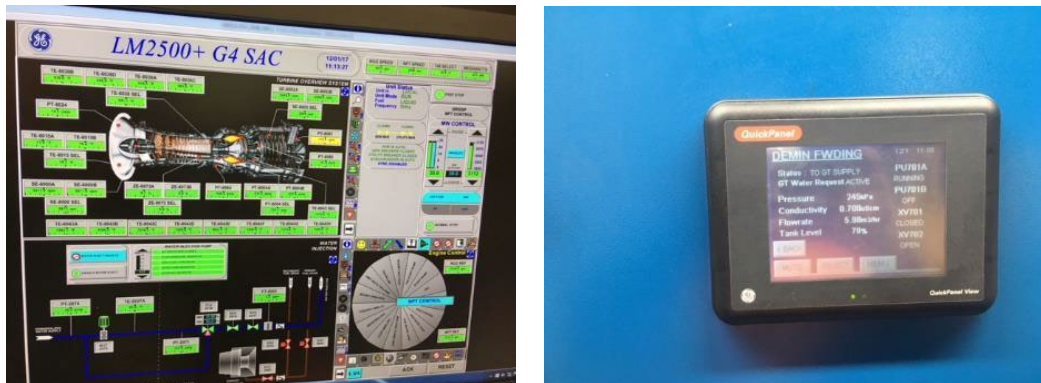


Figure 12: Control Room and RO Plant Monitoring of Demineralised Water Injection

5.2.5 Bunds

Each GTG unit is located on a footing specific to that unit which incorporates bunding sufficient to contain a spill in accordance with the SA EPA Bunding and Spill Management Guideline and AS1940. Other areas of the site with equipment that contain hydrocarbons or contaminants (e.g., transformers), , are self-bunded or located within in bunds to ensure that any release of hydrocarbons or contaminants is contained.

Sizing of the bunds, including the volume of the sump pit, is based on the SA EPA Guidelines and Australian Standards. All concrete bunded areas have a sump pit which has an outlet isolation valve for the containment of the hydrocarbon or chemical spill. The sump pits of each area are connected in series and drain, via gravity flow drain lines, to a full-retention oil-water separator followed by a stormwater quality improvement device (SQID). The sump pit has sufficient space for the placement of a temporary sump pump to drain the water out (if required).

Operation and maintenance

After a rain event, after confirming that the bund content does not contain a significant quantity of oil, the valve will be opened to release the oily water to the oil-water separator and SQID. The standard maintenance protocol requires that plant operators remove all oily-water content from bunds after any rain event. If at any time a bund contents contains a high percentage of oil, site operations staff will arrange for removal of contents by a licensed contractor. All bunds contain a high-level alarm which will advise plant operators to inspect contents and open the valve (if caused by rainwater reaching high level).

Fuel storage bunds

The bund area and height have been taken from dimensions shown on drawing BPSG1-C-DWG-STR-5516_1. The total bund volume is taken as the sum of bunded area and sumps, and considers the volume occupied by the 4 x 40' containerised fuel tanks. A summary of the bund volume calculation is provided in **Table 6**.

Description	Area (m ²)	Height (m)	Volume (m ³)
Fuel Storage Bund (without equipment)	406.8	0.8 - 0.975	348.32
Sump – S1	0.2	0.5	0.1
Sump – S2	0.81	0.6	0.486
Adjustments Volume accounts for the containerised tanks and concrete plinths within the bunded area.			
Calculation of area and volume for 4 x 40' ISO containerised fuel tanks	14.78	0.525	7.76 x 4
Plinth – P1 x 24	0.45	0.275 - 0.325	0.135 x 24
Plinth – P2 x 12	0.16	0.825 - 0.875	0.136 x 12
Total Bund Capacity			313 m³

Table 6: Fuel Storage Bund Capacity Summary Calculation

Transformer Bunds

As detailed in the civil drawings, each transformer bund wall is 0.35 m in height and its area has been calculated based on Drawing BPSG1-C-DWG-GA-0042_0. See **Table 7**.

Description	Area (m ²)	Height (m)	Volume(m ³)
Main Transformer Bund (11/66 kV, 100 MVA)	134.03	0.35-0.4	49.42
Adjustments in the volume to account for transformer equipment			
Transformer Base Slab (6.7m x 2.5m)	16.75	0.35	5.86
Bund Step	1.05	0.175	0.18
Total Bund Capacity			43.38 m³

Table 7: Transformer Bund Capacity Summary Calculation

The bund capacity is 170% of the oil volume.

5.2.6 Mitigation Measures

#	Mitigation measure	Responsibility
HC1	All hydrocarbons will have an up-to-date Safety Data Sheet (SDS)	BPS Operations Manager
HC2	Hydrocarbons will be stored in accordance with the requirements of the SDS	BPS Operations Manager
HC3	Hydrocarbons will be handled in accordance with the SDS, including the provision of applicable PPE	BPS Operations Manager
HC4	Plant and equipment maintenance will be conducted off-site, or where required, in a designated area	BPS Operations Manager
HC5	Any spill/leak will be investigated to determine the cause, and actions will be implemented to prevent re-occurrence	BPS Operations Manager HSE Manager
HC6	Packaged hydrocarbons will be stored within a designated chemical storage container	BPS Operations Manager
HC7	Hydrocarbon tanks will either be double skinned, or within designated bunds	BPS Operations Manager

#	Mitigation measure	Responsibility
HC8	Refuelling will be conducted in a designated area	BPS Operations Manager
HC9	Spill Kits will be available at designated hydrocarbon storage areas	BPS Operations Manager
HC10	Applicable firefighting equipment (extinguishers) will be available at all designated hydrocarbon storage areas	BPS Operations Manager
HC11	Applicable fire extinguishers will be available within all mobile plant and at refuelling or maintenance locations	BPS Operations Manager

Table 8: Hydrocarbons mitigation measures

6. Environmental Management

6.1 Traffic and access

The BPS utilises the existing road access established by SA Water to support operations at the SA Water Bolivar WWTP.

The BPS is accessed via the Norther Connector located to the east of the site. Vehicles travel turn west off the North Connector and then turn left and then right onto the access road towards the entrance of the WWTP. Vehicles then travel south towards through the security gates and proceeding towards the carparking area and BPS which is enclosed within a separate perimeter security fence line (See **Figure 12**).

Natural gas will be supplied by pipeline, but diesel fuel trucks will be used to deliver diesel for storage on the site. Between two to three fuel tankers are required to completely refill the fuel storage system located on site and this is expected to occur approximately 10-15 times per year. The diesel tankers arrive to the off-loading point inside the BPS compound.

Other traffic / vehicle movements will also include:

- Ad hoc removal of waste material by licenced waste removal contractors (including general waste, liquid waste and contaminated waste);
- Light vehicles for staff working at the site. All staff will park at the car park located on site.

Light vehicles (e.g., elevated work platforms) and other equipment required on an as needed basis for general maintenance activities will only operate within the operating area of the BPS.

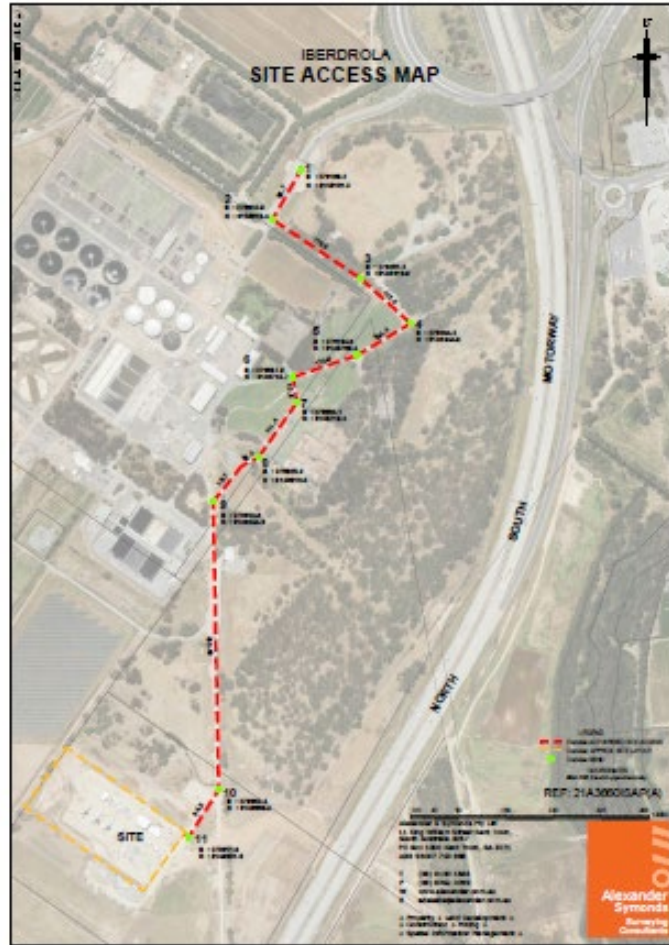


Figure 13: Traffic access to BPS

Ongoing access requirements to support the operation of the diesel/ gas turbine plant will require that Iberdrola and SA Water continue to work closely, particularly so that the delivery of diesel fuel to the turbine plant can be managed around SA Water’s access requirements.

6.2 Noise and Vibration Management

The following information is taken from various Sonus reports prepared for the BPS development, both prior and during construction.

6.2.1 Introduction

Sonus undertook an environmental noise assessment of the proposed site arrangement for the Bolivar gas turbine power plant. The assessment considered the impacts of the operation of the four generators on environmental noise levels at the closest noise sensitive receivers and was based on near field operating noise measurements taken at the Lonsdale site, ambient noise measurement undertaken in the vicinity of the Bolivar site and the proposed operation of the permanent BPS’s.

The Bolivar site is predominately located amongst other industrial land uses. The closest residences are located approximately 1.0 km and 1.1 km away to the southeast and east, respectively. The closest noise sensitive receivers (residences) are shown in **Figure 13**.

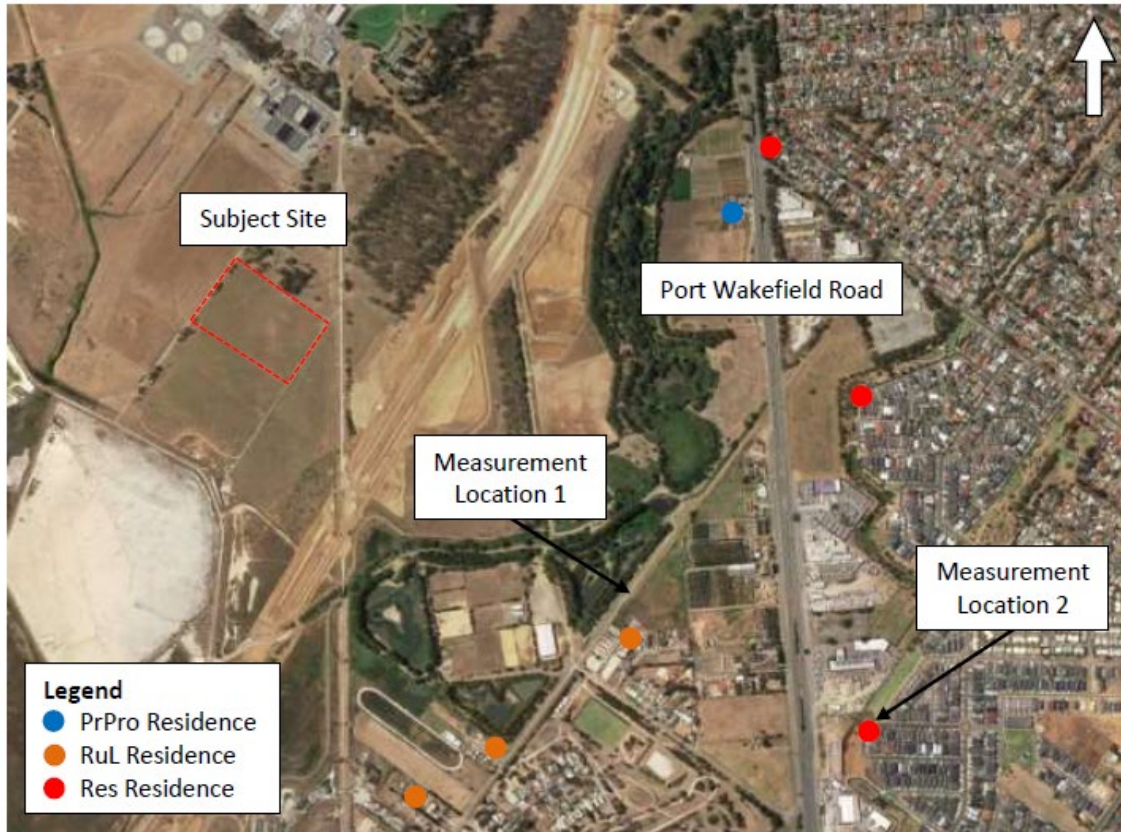


Figure 14: Location of closest sensitive receivers (Source: Sonus, August 2020)

6.2.2 Noise Criteria

The BPS site is located within the Infrastructure 9 Policy Area in the Industry Zone as defined in the Salisbury Council Development Plan³. Nearby residences are located within the Bolivar 19 Policy Area within the Rural Living Zone, within the Primary Production Zone, and within the Residential Zone. Additionally, there are intermediate Open Space Zones between the subject site and all nearby residences.

Prior to relocation and signing of a contract for the attenuators, a pre-construction assessment (the Pre-Construction Assessment) was prepared summarising criteria determined in accordance with the *Environment Protection (Noise) Policy 2007* (the Policy). The Pre-Construction Assessment (S6452C9) was dated September 2021. The purpose of the Pre-Construction Assessment was to confirm the approach with the EPA prior to the procurement of the attenuators.

The report considered:

- The Planning and Design Code (the Code);
- Background noise monitoring;
- The prevalence of various weather conditions.

The report concluded that the power station would achieve the requirements of the Policy, when the noise:

- Measured at a residence;
- In accordance with the environment protection (noise) policy 2007;
- Without adjustment for noise character;
- In CONCAWE1 Weather Category 4 conditions, is no greater than the far field noise criteria shown in **Table 9**:

Zone	Far Field Noise Criteria
Animal Husbandry	46 dB(A)
Rural	50 dB(A)
General neighbourhood	45 dB(A)

Table 9: Plant far field noise criteria

6.2.3 Existing Acoustic Environment

BPS operational noise

Measurements were undertaken on 4 March 2020 at the Lonsdale site during continual operation of all turbines in a manner consistent with the operation expected at the Bolivar subject site.

The results were as follows:

- The dominant noise source was measured to be the exhaust stacks with an unattenuated sound power level of 126 dB(A) each. This closely correlates with the manufacturer's noise data for the exhaust stack which states a total sound power level of 124.5 dB(A) from each stack.
- Lesser noise sources (generators, air filters, turbines, and auxiliary skid) were measured to have a combined sound power level of 106 dB(A) compared to the manufacture's stated sound power level of 110 dB(A).

Ambient noise

Noise logging was conducted at Bolivar between 3 June and 10 June 2020, at the two measurement locations shown in **Figure 13**. It is noted that the noise logging was conducted at a time when restrictions were in place as a result of COVID-19 and therefore it is expected that higher noise levels might be experienced at other times.

- The logging indicated that the existing acoustic environment remains dominated by traffic noise from the Northern Connector or Port Wakefield Road at both

locations at all times, as would be expected in the vicinity of major public road corridors.

- Average (Leq) noise levels were typically in the order of 50 dB(A) during the day and 46 dB(A) during the night.
- The C-weighted average (LCeq) noise level, which is a measure of the low frequency noise within the ambient environment, was always higher than 49 dB(A) at both locations.

6.2.4 Noise Assessment

Noise model

Noise levels were predicted using the SoundPLAN noise modelling software which was calibrated using far field and near field noise measurements taken at the Lonsdale site.

This included:

- Logging the noise level at the stack exhaust
- Attended near field measurements of the generator, air filter, turbine, and auxiliary skid at one unit
- Attended far field measurements at nearby residences (about 950 m away).

The noise model also took into account topography, time and duration operation, buildings and structures on site and ground and atmospheric effects etc.

The predicted noise levels determined that additional noise attenuation was required in order that the far field noise criteria be met. Accordingly, an additional two stage exhaust silencer was installed downstream (above) of the original equipment manufacturers standard exhaust silencer.

Zone	Criteria	Predicted level
	dB(A)	dB(A)
Rural Living Zone - (Animal Husbandry subzone)	46	44
Rural Zone	50	44
General neighbourhood Zone	45	42

Table 10: Predicted average (Leq) noise levels with attenuation

As shown in **Table 10**, with the implementation of the appropriate acoustic treatment measures, the noise levels at nearby residences from the proposed development are predicted to achieve the goal noise levels of the Policy at all times.

6.2.5 Mitigation Measures

#	Mitigation measure	Responsibility
1	If far field noise levels are exceeded, an investigation will be undertaken, and appropriate actions will be implemented	BPS Operations Manager
2	If near field noise levels are exceeded, an investigation will be undertaken, and appropriate actions implemented	BPS Operations Manager

Table 11: Noise mitigation measures

The Bolivar Power Station Noise Management Plan is included in Appendix B.

6.3 Air Quality Management

6.3.1 Introduction

Wilkinson Murray Pty Limited (WMPL) undertook an Air Quality Impact Assessment (AQIA) for the operation of the four gas turbines at Bolivar. The AQIA has been prepared in accordance with relevant SA government guidelines and policies.

6.3.2 Air quality criteria

The primary air pollutants associated with the operation of gas turbines are Nitrogen dioxide (NO₂), Carbon monoxide (CO), Sulphur dioxide (SO₂) and Particulates (PM₁₀ and PM_{2.5}).

The SA EPA is responsible for regulating the management and control of air quality in SA and the *Environmental Protection (Air Quality) Policy 2016* (the Air EPP) is the most relevant policy for the pollutants of interest. The Air EPP prescribes the criteria for ground level concentrations of a range of air pollutants, including those identified above. These are summarised in **Table 12**.

Pollutant	Averaging Period	Maximum Concentration (µg/m ³)
PM₁₀	24 hours	50
	24 hours	25
	Annual	8
Carbon Monoxide	1 hour	31,000
	8 hours	11,250
Nitrogen Dioxide	1 hour	250
Sulphur Dioxide	1 hour	570
	24 hours	230
	Annual	60

Table 12: Air EPP air quality criteria

The criteria relate to total concentrations of pollutants in the air, not just those emitted from a particular activity and the ambient concentrations of air pollutants was also considered.

6.3.3 Existing environment

Sensitive receivers

A range of residential and non-residential sensitive receptors are located near the site. The Bolivar WWTP is located to the north by, the Northern Connector (under construction at the time of preparing the AQIA) is located to the east, and salt flats are located to the south and west. See **Figure 1**.

The discrete receptors identified in **Figure 14** were used to assess the range of potential impacts associated with the operation of the Site, with nearby receptors likely to experience similar or lower levels of impact. The impact assessment criteria identified in Section 6.3.2 are still applicable to sensitive receptors not explicitly shown in **Figure 14**.

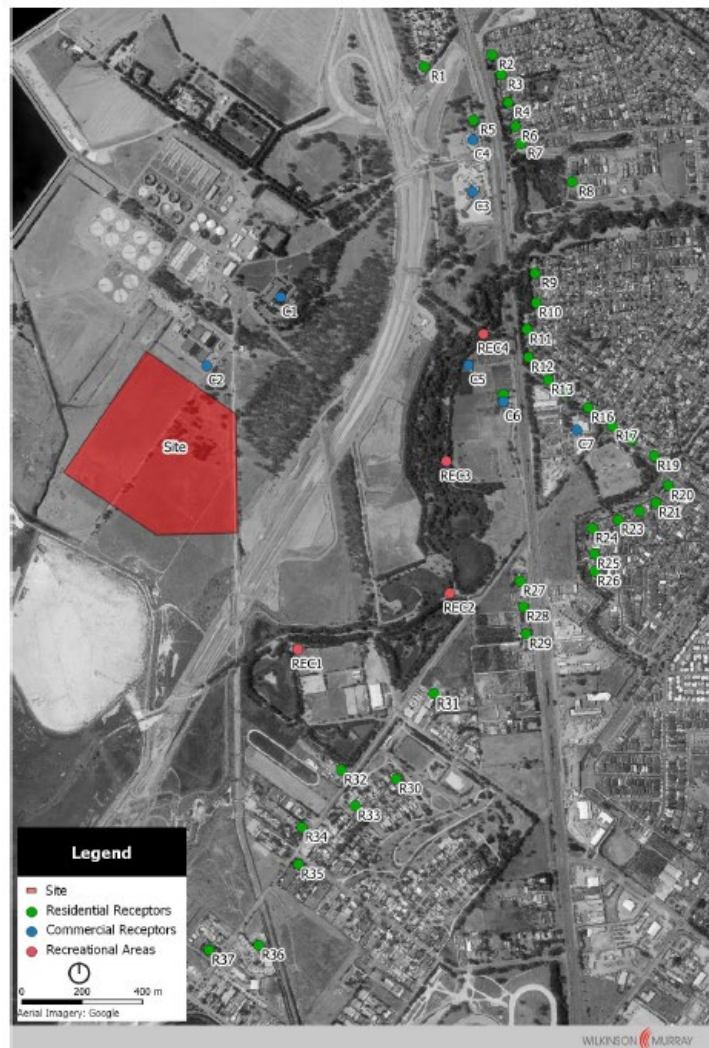


Figure 15: Closest sensitive receivers (Source: Wilkinson Murray, October 2019)

Climate

Long term meteorological data for the area was obtained from the Parafield Airport Automatic Weather Station (AWS), located about 5 km southeast of the Site operated by the Bureau of Meteorology (BoM). The Parafield Airport AWS indicates that January is the hottest month of the year, with a mean daily maximum temperature of 29.8°C, July is the coolest month with a mean daily minimum temperature of 6.3° and July is the wettest month with an average rainfall of 59 mm falling over nine days. There are, on average, 62 rain days per year, delivering 451 mm of rain.

Local Ambient Air Quality

The SA EPA operates a network of air quality monitoring stations (AQMS) across South Australia. Data from the Le Fevre 1 and Le Fevre 2 AQMS (located west and southwest) and Elizabeth Downs AQMS (located northeast) were used to characterise the existing ambient air quality.

Table 13 summarises the existing ambient concentrations of air pollutants near the Site, as described by the nearby AQMS.

Pollutant	Averaging Period	Criteria (µg/m ³)	Average background concentration (µg/m ³)		
			Maximum	70 th percentile ⁴	Annual
PM ₁₀	24 hours	50	60.88	23.83	23.83
PM _{2.5}	24 hours	25	21.17	8.13	7.11
Carbon Monoxide	1 hour	31,000	800	12.17	20.44
	8 hours	11,250	275	20.55	20.44
Nitrogen Dioxide	1 hour	250	60.03	10.44	10.44
Sulphur Dioxide	1 hour	570	105.7	0.786	0.786
	24 hours	230	11.72	0.786	0.786

Table 13: Summary of ambient pollutant concentrations

NOTE: Nexif Energy relocated the five gas turbines, leased from the South Australian Government, from a site in Elizabeth to the new site at Outer Harbour about 7 kms west of the Bolivar site. These turbines have been in commercial operational since 10th June 2022 and were considered in the AQIA.

6.3.4 Air Quality Assessment

Air quality model

AERMOD – the US EPA regulatory Gaussian plume air dispersion model was used for the AQIA. The model is steady state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts. It includes treatment of both surface and elevated sources, and both simple and complex terrain. AERMOD is accepted by SA EPA for use in air quality impact assessments.

⁴ The 70th percentile values of 1-hour, 8-hour and 24-hour averages for each pollutant have been adopted for assessment purposes to avoid elevated background concentrations, typically caused by extreme events such as fires, dust storms and hazard reduction burns.

Results

The results indicate that the operation of the four gas turbines, and the five gas turbines at the Outer Harbour site, will have a small impact on air quality at sensitive receptors, and that the predicted ground level concentrations comply with the established impact assessment criteria for all pollutants (See **Table 12**).

The assessment methodology adopted for the AQIA is conservative, primarily due to the use of emissions factors for diesel fuel and the assumption that the gas turbines are running continuously. Given that the annual utilisation of the gas turbines is expected to be around 10%, the actual impact by the gas turbines is likely to be significantly less.

A full suite of emissions data for the gas turbines running on gas fuel is not available. However, based on some general marketing information on the gas turbines, NO_x emissions when running on gas fuel are approximately 40% less than those when running on diesel fuel. Accordingly, when gas fuel is used at the site, incremental NO₂ impacts associated with the Site would reduce by approximately 40%. Emissions of particulates, CO and SO₂ when running on gas fuel are also likely to be lower than those for diesel fuel.

6.3.5 Mitigation Measures

#	Mitigation Measure	Responsibility
AQ1	Annual emissions testing for NO _x . If found to be unacceptable levels, the cause will be determined and will be rectified with gas turbine or balance of plant maintenance	BPS Operations Manager
AQ2	Inspection and or repair of gas turbine demineralisation water injection system will be undertaken as per original manufacturers requirements	BPS Operations Manager

Table 14: Air quality mitigation measures

6.4 Stormwater Management

6.4.1 Existing Environment

There are no major surface water bodies on the site. The Barker Inlet is located 3.7 km south-west of the BPS and is the closest major water body. The Little Para River which flows from the Para River Reservoir to Barker Inlet in a south-westerly direction is located approximately 550 m southeast of the site (up-gradient).

There are numerous drainage channels located in the area associated with the WWTP and the Cheetham salt evaporation ponds. The main drain discharges to the south in the Barker Inlet Estuary and is considered to most likely represent the groundwater baseflow, with the exception of during periods of heavy rainfall where the water level in the drain is higher than groundwater elevations and flow back into the groundwater system may occur.

Hydrogeological studies undertaken of the WWTP indicate that groundwater is flowing in a general easterly to south-easterly directions across the former TWL towards the main drain located on the eastern perimeter of the WWTP. Groundwater flows recorded on the eastern side of the drain indicate that groundwater flows to the south-west.

6.4.2 Legislative Requirements

To reduce the level of pollution entering the coastal waters, the SA EPA aims to ensure that new developments do not increase stormwater flows above pre-development levels and at the same time minimise the level of pollutants in the stormwater that is discharged.

The most recent Department of Environment, Water and Natural Resources (DEWNR) guidelines are provided in **Table 15**.

Pollutant	Current best practice performance targets
Total suspended solids (SS)	80% reduction of the untreated urban annual load
Total phosphorus (TP)	60% reduction of the untreated urban annual load
Total nitrogen (TN)	45% reduction of the untreated urban annual load
Litter	90% reduction of the untreated urban annual load
Flows	Maintain discharges to within the capacity of the existing receiving stormwater infrastructure

Table 15: DEWNR Stormwater Performance Targets (DEWNR, 2013)

These targets have been used for the development of strategies for this stormwater management plan.

Additionally, the *Environmental Protection (Water Quality) Policy (2015)* states that ‘A person must not discharge a class 1 pollutant into any waters or onto land in a place from which it is reasonably likely to enter any waters (including by processes such as seepage or infiltration or carriage by wind, rain, sea spray or stormwater or by the rising of the water table’.

6.4.3 Drainage System

The drainage system has been designed to achieve the following objectives:

- Limiting entry and diverting stormwater catchment from outside of the BPS to eliminate the risk of potential external contamination.
- Capturing contaminated stormwater (with Class 1 contaminants) from the bunded areas and treating the stormwater prior to releasing it into the stormwater system.
- Capturing clean stormwater (with a low probability of Class 2 contaminants only) from non-bunded areas and removing any possible contaminants and sediments prior to releasing it to the existing council stormwater channels.

In general, the drainage system on site can be separated into two main areas:

- Stormwater collection and transfer drains;
- Stormwater Quality Improvement Device (SQID) and Surge Vessels;

These two systems are discussed further below.

6.4.3.1.1 BPS Catchment and Runoff

The site layout is provided in **Appendix A**.

The BPS has an estimated catchment area of 2.77 ha, of which 1.5 ha is comprised of bunded areas (e.g. for the gas turbines, tank storage) and about 1.25 ha gravel. The facility office and workshop have an estimated roof area of 158 m².

The runoff from BPS, including roads, hardstands, roofs and gravel areas is estimated to be around 5,730 m³/year, against the pre-development catchment runoff which was estimated to be 4,820 m³/year.

6.4.3.2 Stormwater Collection and Transfer

The foundation design ensures that the flow of stormwater water is towards the drainage channels/drains contained within the site to capture uncontaminated water. This excludes the bunded areas, where the rainwater is collected and treated separately.

The internal site drainage capillaries will be in the form of the following drain sizes:

- The equipment area drains are covered with grating, aimed to capture the stormwater in the vicinity of the equipment. These are typically 450 mm (W) x 300 mm (D);
- The road-verge drains collect the stormwater from the equipment area drains and transfer this to the SQID. The road verge drains are typically covered by a grating except for heavy vehicle road crossings where the covers are trafficable lids. The road verge drains are typically 600 mm (W) x 450 mm (D);
- The main site drain is located to the north of the site and is outside of the site fence. The main site drain is 1200 mm (W) x 1200 mm (D) and performs two functions:
 - Captures the stormwater flow from the catchment area north of the site through the natural gradient and diverts this stormwater around the site
 - Captures the discharge from the site areas, after removal of sediments and contaminants by the SQID;

All site drainage capillaries slope 0.5% U.N.O to ensure maximum flow through the drainage pipes.

6.4.3.3 SQID and Surge Vessels

Captured rainwater from all high risk bunded areas and from the low-risk catchment areas will be diverted to the Class 1 SQID. The Class 1 SQID is sized such that it can capture and process the containment of the non-bunded catchment areas of the site for a 1:20 year ARI for a period of 4 hours.

The surge vessel ensures that the discharge velocity in a major storm event can be appropriately managed. These surge vessels will be fitted with pumps that will pump out the captured rainwater at a specified rate after a certain level is reached. It has been sized based on the hydrology review undertaken during the detailed design phase.

The sizing of the SQID, the surge vessel (and associated pumps) and the controlled release of the bundled oily water allow for sufficient retention and controlled velocity of discharge to ensure that the existing stormwater system around site is not stressed by a sudden discharge. The current design for the site does not significantly change the hydrological characteristics of the area and does not change the amount and velocity of the catchment.

How the diverted water is treated in the SQID is summarised in **Table 16**.

Area	Treatment
High Risk Bundled Areas	<ul style="list-style-type: none"> After the rain event, the captured rainwater from the high risk bundled areas will be tested and based upon the quantity of oil present in the containment, will be either discharged to the SQID or removed by a licenced waste management contractor. If released to the SQID, the water is released in a controlled manner to ensure that the capacity of the SQID is not exceeded. The stream is not discharged directly to the environment but will go through a second retention in the form of surge vessel with submersible pumps. The SQID is designed to achieve a concentration of less than 5 mg/l of oil in the stream that is being discharged. The provision of Coalescing Filters in the SQID provides the necessary control to manage the risk of discharging Class 1 contaminants off site. The separated oil and sediment are disposed by using external service providers for removal, via trucking, of sludge waste.
Low Risk Catchment Areas	<p>The advanced design facilitates a retention period that provides quiescent conditions within the secondary chamber, efficiently promoting the separation of:</p> <ul style="list-style-type: none"> total suspended solids (TSS) light liquids and pollutants. <p>This allows the water diverted from the low risk areas to also be appropriately treated.</p>

Table 16: SQID Treatment

6.4.4 Wastewater Management Strategy

Wastewater resulting from site include the following:

- Staff amenities
- Contaminated wastewater resulting from spills and leaks
- Fire water
- Reject wastewater from the reverse osmosis (RO) plant.

The strategy for managing this wastewater is summarised in **Table 17**.

#	Area	Treatment
WW1	Staff wastewater	Toilets and site office amenities will be discharged to the public sewage system.
WW2	Spills in bundled areas	The BPS site includes liquid storage tank yards and unloading zones where there is potential for spills or leakages to occur. There may also be some washdown activities within the engine hall and workshop.

#	Area	Treatment
		<p>These areas have been bunded in accordance with the <i>Bunding and Spill Management Guidelines (EPA, 2016)</i> to prevent contamination of receiving waterways.</p> <ul style="list-style-type: none"> • Small spills will be managed through using absorbent materials to clean up. The contaminated material will be sent offsite for disposal at an appropriately licenced waste facility. • Any minor spill within these areas will be directed to and treated with the onsite Class 1 SQID which includes an emergency shutoff and alarm system. • Treated wastewater will be gravity feed into the SQID and then discharged through the surge vessels and stormwater pumps to the council stormwater system (if less than 5mg/l of oil in the stream that is being discharged). • Large liquid spill such as oil, will be pumped into Intermediate Bulk Containers (IBCs) using a mobile pump and removed offsite for disposal at an appropriately licenced waste facility
WW3	Spills outside of bunded areas	<p>Liquid wastes can potentially arise from accidental spills outside of a bunded area. Should any spills occur outside of the bunded area, the area will be:</p> <ul style="list-style-type: none"> • Cleaned adequately with the spill management kits on site. • All contaminants including, if necessary, removal of gravel and soil, will be removed. • Where contaminants cannot be removed, it will be minimised such that any water runoff in those areas can be managed by the SQID, where it will be contained.
WW4	Fire water	<p>Firewater will be managed in accordance with the <i>EPA Guidelines for fire protection services pipework systems —wastewater removal (2003)</i>.</p> <ul style="list-style-type: none"> • Fire water that falls within bunded areas will be managed as per Item WW2 above • Fire water that drains to the drainage capillaries will continue through to the SQID (for bunded areas). • Firewater will be treated in the same way as stormwater in these systems and all contaminants managed in the same manner. • Where oily-water sediment chambers are overfilled by firewater, the overflow will be directed to the surge vessels.
WW5	RO Wastewater	<ul style="list-style-type: none"> • Will be discharged through underground piping to the Bolivar WWTP – High Salinity Sub-plant for processing. • The connection location and sizing to the Bolivar WWTP will be developed during detailed design.

Table 17: Wastewater treatment

6.4.5 Stormwater Management Strategy

The stormwater runoff must be managed appropriately so that the receiving waterways are protected from potential site contaminants, sediments, and an increase in runoff volumes. Runoff from areas of the site is managed to meet current best practice water quality targets as defined in **Table 15**.

Stormwater can runoff from:

- Roads and hardstands
- Areas of gravel
- Building (office and workshop) roofs
- Bunded area.

The strategy for managing this stormwater is summarised in **Table 18**.

#	Area	Treatment
SW1	Roads and hardstands	<p>This runoff could contain silt, suspended solids and attached pollutants, hydrocarbons and heavy metals mainly be sourced from vehicles and machinery traversing the site.</p> <ul style="list-style-type: none"> • This stormwater runoff will be directed, using the drain system, to the U drain via inlet pits to the SQID system. • The drainage system is graded and sloped towards the SQID and then discharged through the surge vessels to the council stormwater drains.
SW2	Gravel	<p>Due to infiltration, there is limited runoff generated from the gravel. The gravel areas comprise of a single sized gravel layer (diameter 25mm) to a depth of 50mm.</p> <ul style="list-style-type: none"> • Rainfall falling on the gravel surface will be retained onsite to infiltrate rather than quickly running off. This will reduce erosion and the generation of suspended solids when runoff does occur. • Runoff that does occur will be directed to drainage channel and then to the heavy duty precast concrete U-ditch with a concrete cover to the SQID and then discharged through the surge vessels to the council stormwater drains.
SW3	Roof	<ul style="list-style-type: none"> • Runoff from roofed building (Flat pack office) is considered 'clean' and will either be recycled or can be directed straight to the council stormwater system.
SW4	Bunded area	<p>All bunded areas are built in accordance with the <i>Bunding and Spill Management Guidelines (EPA, 2016)</i>.</p> <ul style="list-style-type: none"> • The net capacity of a bunded compound in a storage facility is 120% of the net capacity of the largest tank. • The bunded area is capable of preventing the migration of any spillage or leakage to the surrounding environment. • All bunded areas are contained and diverted to the SQID where all hydrocarbon contaminants are removed. • Rainfall on bunded areas which has not been drained to the SQID, will be contained by the bund and will evaporate over short time frames. • When a greater level builds-up, a high level alarm will be triggered in the local control room and the remote operating centres, to alert site operations staff team to remove the water within these bunds.

Table 18: Stormwater Treatment

6.5 Hazardous substances

6.5.1 Chemical Management

All spare chemicals and oils shall be stored on site in self-bunded pallets and vinyl rain covers with spill management kits next to the storage areas. Rainwater accumulating in the pallet bunds will be pumped to bulky bins and removed by licenced contractor as required.

There are industrial size spill kit bins next to each turbine and chemical storage area and a large trailer mounted emergency spill kit at the BPS. All spill kits shall be regularly inspected, and records maintained of their inspection and re-fill requirements.



Figure 16: Chemical Storage in Mobile Bunds

6.5.2 Mitigation Measures

#	Mitigation measure	Responsibility
HS1	Chemicals will have an up-to-date Safety Data Sheet (SDS)	BPS Operations Manager
HS2	Chemical will be stored in accordance with the requirements of the SDS	BPS Operations Manager
HS3	Chemical will be handled in accordance with the SDS, including the provision of applicable PPE	BPS Operations Manager
HS4	Chemical handling requirements will be stipulated on the applicable JRA/JHA	BPS Operations Manager
HS5	The cause for any spill/leak will be investigated, and actions to prevent re-occurrence will be implemented	BPS Operations Manager / HSE Manager
HS6	Packaged chemicals will be stored within a designated chemical storage container	BPS Operations Manager
HS7	Bulk chemicals will either be stored within double skin tanks, or within designated bunds	BPS Operations Manager
HS8	Spill kits will be available at designated chemical storage areas	BPS Operations Manager
HS9	Applicable firefighting equipment (extinguishers) will be available at all designated chemical storage areas	BPS Operations Manager

Table 19: Hazardous Substance Mitigation Measures

6.6 Waste management

All waste generated on site as part of the operation and maintenance activities shall be managed in accordance with this OEMP and include appropriate controls for the storage, separation, and disposal of waste at the sites.

Identified waste includes:

- Waste oils (including lubricating oils, jacking oil, mineral oil, transformer insulating oil)
- Engine coolant and additives
- Battery acid and old batteries
- Contaminated waste from sump areas
- Stormwater (contaminated)
- Mixed contaminants
- General waste
- Recycling
- Spill kit material

Engine (lubricating/jacking) oil is required for lubrication of the gas turbines. The oil is degraded in quality as it passes around the moving engine components while the generators are operating and requires replacement on a periodic basis. The estimated usage of lubricating oil is approximately 2,000 L per year. Waste oil will be stored in 240 L drums prior to off-site disposal by an EPA Licenced contractor.

Turbine fuel and water purge lines will be connected to 1000 L IBC bulk bins on bunded pallets and will be removed and replaced by an EPA Licenced waste contractor on an on-call basis as required.



Figure 17: Turbine Fuel/Water Purge Collection Bins

Any oily water accumulated from bunded areas is collected in the blind sumps and pumped out via vacuum truck as required (on call basis) by an EPA Licenced contractor. All other waste components, including used food waste, recyclables or general waste are separated on site into the respective bins and then removed to Licenced facilities for recycling or appropriate disposal.

Table 20 provides a summary of the waste storage and disposal methods, actual volume will vary as a result of operations and off-site removal frequency.

Waste Type	Storage	Disposal Method
Waste oils (including lubricating oils, jacking oil, mineral oil, transformer insulating oil)	240 L drum	EPA Licenced contractor

Waste Type	Storage	Disposal Method
Turbine fuel and water purge lines	1000L IBC bulk bins on banded pallets	removed and replaced by an EPA Licenced waste contractor on an on-call basis as required
Battery acid and old batteries	2 x 24 V DC, 1 X 125 V DC	EPA Licenced contractor
Contaminated waste from sump areas, including contaminated stormwater,	Collected in the blind sump	Pumped out via vac truck as required (on call basis) by an EPA Licenced contractor
Rainwater accumulating in the pallet bunds	Pumped to bulky bins	EPA Licenced contractor
Mixed contaminants, Waste Soil	Contaminated material bin	Removed and replaced by an EPA Licenced waste contractor on an on-call basis as required
Food waste, recyclables or general waste	Appropriately labelled bins	EPA Licenced contractor

Table 20: Types of Waste, Storage and Disposal Methods

6.6.1 Mitigations measure

#	Mitigation measure	Responsibility
W1	Waste materials will be segregated depending on the waste disposal strategy, i.e. hazardous waste facility, landfill	BPS Operations Manager
W2	Hazardous wastes will be transported and disposed by Licenced contractors	BPS Operations Manager / HSE Manager
W3	Records of all listed wastes stored on and removed from site will be maintained	BPS Operations Manager / HSE Manager
W4	Housekeeping will be maintained in all work areas	BPS Operations Manager / HSE Manager
W5	The cause for any spill/leak will be investigated, and actions to prevent re-occurrence will be implemented	BPS Operations Manager / HSE Manager
W6	Bins will be provided for the segregation of waste, and the prevention of the spread of rubbish	BPS Operations Manager / HSE Manager
W7	Refuse bins will be covered to prevent access by fauna and spread of rubbish by wind	BPS Operations Manager / HSE Manager

Table 21: Waste Mitigation Measures

6.7 Fire risk

The site is set amongst rural paddocks on three sides and SA Water infrastructure the other. The risk of bush fire is low, but the possibility of fire is still present. The design of the power plant to reduce the risk of fire includes:

- Clearing around the power plant
- Fire water and fire safety systems within the power plant fenced area

- Underground electrical cables
- Fire suppression systems within the gas turbine enclosures
- Fire water sprinkler system within the office building and warehouse
- Fire detection system within the electrical enclosure.
- Exclusion of vegetation from within the substation enclosure and power plant;
- The use of circuit breakers and fuses to interrupt any electrical fault; and
- The adoption of the lightning protection measures.

Plant operation is focused on preventing fires and being prepared in the event that a fire is either ignited or passes through the project site. Management activities include:

- Manage all works that have the potential to cause ignition of fire using the permit to work system - hot works permit;
- Ensure adequate fire-fighting equipment is located sufficiently around the site, in vehicles, offices, and wherever the risk assessment for a task requires;
- Procedures and programs maintained with the fire service including periodic workshops and drills.

6.7.1 Potential Impacts and Mitigation Measures

Potential Environmental Impacts	Mitigation Strategies
Ignition of materials on site as a result of hot work.	Hot Works Permits must be obtained for all works which may result in the ignition of a fire. A hot work permit is issued by an authorised person before any hot work (grinding or cutting using angle grinders, cutting or welding works using arc /gas equipment or any activity that generates a flame or spark) is carried out.
	Fire blankets, shields, extinguishers, and any other fire prevention devices identified in the JSA for the task must be present.
	Annual inspections by the Fire Service and implementation of any recommendations.
	Paper/cardboard/rags/etc waste receptacles will be regularly emptied.
Ignition source created by electrical short circuit, malfunction, or explosion.	The BPS has been designed and constructed in accordance with Australian fire safety regulations and original equipment manufacturers recommendations. Appropriate fire extinguishers will be located on the site. All electrical equipment will be serviced as per product manuals and standard procedures.
Ignition from lightning strikes	Adoption of lightning protection measures have been incorporated into the BPS design. Appropriate fire extinguishers, fire systems will be located around the site.
Ignition of fire caused by cigarette smoking and disposal of butts.	Smoking will only be permitted in designated areas and where appropriate disposal units are provided.
Inadequate storage of combustible or flammable substances.	All Hazardous Chemicals and Dangerous Goods must be kept in secure storage facilities according to the regulations and designation of the SDS requirements.
	All BPS inductions are to clearly explain the site's fire contingency plan and emergency response procedure.

Potential Environmental Impacts	Mitigation Strategies
Inadequate knowledge of fire contingency plan in an emergency situation.	All Hazardous Chemicals and Dangerous Goods must be kept in secure storage facilities according to the regulations and designation of the SDS requirements.
	Everyone entering any part of the project site must either be accompanied by someone who is inducted to BPS or be inducted to BPS themselves. All BPS inductions are to clearly explain the site's fire contingency plan and emergency response procedure.
	Clearly display site plan with relevant contact details and emergency meeting point.
Site personnel having no knowledge of declared Total Fire Ban Days	Establish effective liaison with emergency services. Site personnel to check Rural Fire Service website (www.rfs.nsw.gov.au) daily during the fire season (October 1st - March 31st).

Table 22: Potential Environmental Impacts

6.8 Native Flora and Fauna

6.8.1 Existing environment

An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) search was completed for a 1 km radius of the site. The desktop assessment identified one Threatened Ecological Community and numerous flora and fauna species as having the potential to occur within the project area. The findings are summarised in **Table 23**.

Flora

Category	Species / Threatened Ecological Community	Status
Listed Threatened Ecological Community (TEC)	Subtropical and Temperate Coastal Saltmarsh	Vulnerable
Listed Plant species	<i>Caladenia tensa</i> (Greencomb Spider-orchid, Rigid Spider- orchid)	Endangered
	<i>Tecticornia flabelliformis</i> (Bead Glasswort)	Vulnerable

Table 23: Listed flora

Fauna

Table 24 summarises the listed fauna and migratory species having the potential to occur within a 1 km radius of the site. A full list of the species is provided in **Appendix C**.

Category	Number	Status			
		None	Vulnerable	Endangered	Critically endangered
Listed bird species	17	6	5	6	-
Listed mammal species	1	1	-	-	-
Migratory bird species	37		-	-	-
• Marine bird	1	1	-	-	-
• Terrestrial	3	3	-	-	-
• Wetland	33	27	1	2	3

Table 24: Listed fauna

Native vegetation

The *Native Vegetation Act 1993* applies to land west of Port Wakefield Road. There are some trees within the boundaries of the site and wider SA Water land holding. An assessment was not undertaken to determine whether trees and other vegetation was considered native vegetation under the Native Vegetation Act given the limited impact from the BPS.

Wetlands of National Importance

The site is located about 600 m east of the St Kilda Wetlands, which hold significant ecological value for fauna to breed and utilise the habitat as a nursery for a number of important commercial and recreational marine fish and crustacean species.

The variety of coastal habitats provide roosting, sheltering and feeding grounds for a large number of bird species, including migratory species (See Appendix C). The wetlands and associated mangroves are an important habitat for numerous listed EPBC flora and fauna.

The wetlands and mangrove forest are considered sensitive ecological receptors. As discussed in **Section 6.4**, appropriate stormwater infrastructure and measures to capture of contaminated water have been installed and are operational at the BPS site.

Adelaide Dolphin Sanctuary

The Adelaide Dolphin Sanctuary comprising 118 km² square kilometres of the Barker Inlet and Port River is noted as a sensitive ecological receptor for the BPS. The Sanctuary is home to 40 resident Indo-Pacific bottlenose dolphins (*Tursiops aduncus*) and an estimated 400 transient dolphins that visit at various times. The Sanctuary and Barker Inlet area is also a tourist attraction for bird watching and kayaking.

The Adelaide Dolphin Sanctuary falls under the *Adelaide Dolphin Sanctuary Act 2005* and the *National Parks and Wildlife Act 1972* (Protected Animals – Marine Mammals Regulations 2010).

As discussed in Section 6.4, appropriate stormwater infrastructure and measures to capture of contaminated water have been installed and are operational at the BPS site to ensure that there are no impacts on the Adelaide Dolphin Sanctuary.

Adelaide International Bird Sanctuary

The Adelaide International Bird Sanctuary covers approximately 60 kilometres of the South Australian coastline from Port Parham to Port River / Barker Inlet connection south of Torrens Island. The Sanctuary crosses four council areas and is one of Australia’s longest continuous conservation areas. During summer the Sanctuary comprises tens of thousands of migratory shorebirds which breed in the northern hemisphere and travel over 11,000 km to Gulf St. Vincent to feed.

The Sanctuary is governed under the *National Parks and Wildlife Act 1972*. The Sanctuary is noted as a sensitive receptor to the development due to its proximity. Development and potential on-going operation of the facility will be undertaken in a manner to avoid impacting migratory species who reside in the Sanctuary over the Summer.

6.8.2 Potential impacts

Due to the site being used for horse agistment prior to construction of the BPS, it is highly unlikely that these flora and fauna species would be impacted. Areas of greatest importance to various bird species and mammals would be the Port River estuary and Barker Inlet, lagoons for the Bolivar WWTP, vegetation to the north of the development site and areas along the Little Para River, which were not impacted by the BPS.

There is a potential that migratory species may traverse through the area on an infrequent basis, however the on-going operation of the facility is not expected to impact on the migratory path of these species. As the site was previously cleared and used as horse agistment, there is no habitat present to support roosting, feeding and other activities of migratory species.

The nearby wetlands and mangrove forests, Adelaide Dolphin Sanctuary and the Adelaide International Bird Sanctuary could potentially be impacted by contaminated stormwater, if stormwater is not appropriately contained and managed at the BPS.

6.8.3 Mitigation Measures

#	Mitigation measure	Responsibility
FF1	The BPS will be maintained and operated in accordance with the approved Storm Water Management Plan	BPS Operations Manager
FF2	If bunds require draining, bund valves will be opened sequentially such that no areas or the storm water separator are flooded.	BPS Operations Manager
FF3	Bunds and the seals around any pipes through bund walls will be well maintained.	BPS Operations Manager
FF4	Stormwater infrastructure will ensure the capture of contaminated water on-site to minimise the potential impact on the Adelaide Dolphin Sanctuary.	BPS Operations Manager

Table 25: Flora and fauna quality mitigation measures

6.9 Heritage

6.9.1 Aboriginal Heritage

Much of the Adelaide region, from Myponga to Hamley Bridge and spanning from the coast to the suburbs of the Adelaide Hills, is land that falls under the Kurna Peoples Native Title Claim. The Kurna People received native title over the Adelaide region in 2018 under the *Native Title Act 1993*.

The site is not known to be in close proximity to any heritage items listed under the SA heritage Council or HP Act. A Construction Environmental Management Plan (CEMP) was prepared for the BPS construction. RAW SA was employed during the construction to monitor excavation activities. No aboriginal cultural heritage artifacts were found during construction. Should a trench be required during operation in areas not already disturbed during construction, the CEMP will be followed, inclusive of cultural heritage monitoring will take place during excavation.

6.9.2 European Heritage

There are no Commonwealth, State or Local Heritage places within the site or in its proximity. The nearest heritage place (State Listed) is located about 1.9 km north-east of the site and is a heritage listed dwelling.

No impact on European heritage is expected as a result of the operation of the BPS.

6.9.3 Mitigation Measures

#	Mitigation Measure	Responsibility
CH1	Operation of the BPS will comply with the requirements of the CHMP.	BPS Operations Manager
CH2	In the event that any Aboriginal archaeological material or European Heritage sites or artefacts are encountered during operation of the BPS, ground activities within 100m will cease immediately to allow an archaeologist to assess the finds and any finds reported to the relevant authorities.	BPS Operations Manager

Table 26: Cultural heritage quality mitigation measures

6.10 Site rehabilitation (post construction)

The Development Approval requires revegetation to take place post construction of the power plant. A vegetation rehabilitation plan has been approved, the requirements of which will be completed by mid-May 2023

6.11 Weeds and pests

Within the fenced area of the BPS compound the ground is either cement, asphalt or aggregate for drains, hence the opportunity for weeds to manifest within the BPS is small. In the landscaped area along the fence line of the facility, weeds will be able to take but over time it is expected that the plants will grow extensively to the extent as to minimise weeds in this area. A small portion of area at the rear of the property is original grazing land and will be monitored and controlled for weeds.

The facility is located adjacent to rural land. However, the risk of seeds being dispersed in this area is minimal due to:

- Operating's staff vehicles on site are few and come from residential Adelaide with small likelihood of picking up weeds seeds and transport them to site.
- The primary fuel for plant operation is gas fuel, which is delivered via pipeline, hence diesel fuel truck deliveries will be minimal.
- Access to the site is via the Bolivar Connector and through SA Water facility hence the opportunity to pick up seeds while driving to the site is minimal.
- Having constructed the BPS and moved into commercial operation there is no need to disturb the ground for any new construction activity.

6.12 Contamination

The storage of chemicals and storage of liquid fuel on site is undertaken within Australian Standard guidelines in order to prevent contamination. Controls in place to prevent contamination include:

- Effective storage of fuel oil in tanks, including bunding to prevent uncontrolled run off into the storm water system.
- Lubricating oil and chemical storage area with bunding
- Storm water oily water separator
- Site spill kits for maintenance work
- Hazardous storage area for hazardous waste

Contaminated or hazardous waste will be collected, contained, stored and disposed of according to respective standards for this activity.

6.13 Public safety

As an operating power plant the BPS is a facility with inherent risk as a work environment due to rotating machinery, electrical and control systems, fuel systems, chemical storage, maintenance activities and fuel truck unloading activity. To prevent the public from access to the facility the BPS is fenced off with a 3 m high fence, a security gate, and security closed circuit cameras. Furthermore, the BPS facility is situated within the SA Water Treatment Plant secured further restricting easy access to the BPS facility.

Should the public be invited to the BPS for an event, then the invited guests will be required to complete the BPS Site Induction on entry, wear the necessary personal protective equipment and be escorted by a fully inducted and trained member of IASAGT staff.

6.14 Emergency response planning

An Emergency Response Plan (ERP) for the commercial operation of BPS has been prepared, the details of which will be included in the site induction documentation. The ERP includes the emergency response requirements in the event of an environmental emergency.

7. Monitoring and Review

7.1 Inspections

BPS technicians will report all environmental hazards they identify as part of their normal day-to-day operations to site management.

Annual inspections of site activities and environmental performance will be undertaken by Iberdrola and will include personnel using an Iberdrola developed inspection checklist. Records of completion shall be maintained by Iberdrola and made available upon request by a relevant government authority. Iberdrola shall implement a system whereby any follow up actions from these inspections can be recorded and status tracked to completion.

Where necessary, Iberdrola may review the level, scope and timing of inspections to ensure continuous improvement through the life of the BPS.

7.2 Audits

Iberdrola shall develop an HSE audit schedule for BPS with respect to the areas of responsibility, control and influence. This shall include a regular audit of compliance to this OEMP and its sub-plans.

Iberdrola utilises a risk management system whereby any follow up actions from these audits can be recorded and status tracked to completion. Iberdrola will provide the results of audits to management groups upon completion of audits and make it available for person/s working at Iberdrola upon request.

Iberdrola may procure the services of a third-party independent auditor to undertake audits of compliance with the OEMP and its sub-Plans. Government authorities such as the DPTI, SA EPA and the local council are also able to undertake audits of environmental compliance with approval conditions and relevant legislation at any time.

7.3 Reporting requirements

7.3.1 Operation reporting

In accordance with EPA Licence Condition U-777, IABPS will maintain a written record of the operation each turbine unit on the Premise. Records will include as a minimum, the time, date and duration of operation.

A summary of the records will be submitted to the satisfaction of the EPA every six months by the 31st day of July and the 31st day of January of each year.

7.3.2 Annual returns

As required by the EPA Licence Condition (A-4) and Section 48(2)(a) of the Environmental Protection Act 1993, an Annual Return is required to be submitted to the EPA. The Annual Return must be submitted no later than 90 days before the anniversary of the grant or renewal of the Licence.

7.4 Complaints

Complaints may come from several avenues, for example the complaints line, direct contact with Iberdrola or Iberdrola's contractors, direct to the BPS Operations Manager by phone (telephone number is displayed on the site notice board) or by personal contact with Iberdrola. Any complaints received shall be treated seriously and with respect.

Should any complaints be received at/or involving the BPS they shall be reported to the Iberdrola General Manager Operations and be recorded within the administered complaints register.

Iberdrola's complaints register/system will record the details of the complaint, action taken to investigate, any actions taken to address the problem, and any recommendations for further action. An updated copy of the complaints register will be included in the monthly report and made available upon request.

For complaints regarding significant matters, these shall be referred to Iberdrola management and the General Manager Operations within 24 hours. Complaint response times shall be in compliance with the requirements within the Iberdrola Energy Complaints Handling Policy.

7.5 Non-Compliance

The operation of the BPS shall be undertaken to avoid instances of non-compliance with this OEMP requirements. In the event that a non-conformance involving failure to implement or adhere to the identified requirements of the OEMP does occur, the incident will be notified to the General Manager Operations immediately and an appropriate investigation into the matter will be undertaken.

7.6 Continuous improvement

The OEMP will be reviewed at least annually, to review the adequacy of the environmental controls, procedures, objectives and targets within the OEMP. This will enable IABPS to determine whether the controls are still applicable to the activities being undertaken and to track progress against the objectives and targets.

The review will consider as a minimum:

- Reviewing the results of audits;
- Review of complaints, non-compliances and incidents; and
- Evaluation of the system, which improvements and corrective actions are sought

The review will be documented and changes to the plan made by IASAGT. Any revision made to the OEMP will be approved in writing by the EPA.

7.7 Related Documentation

All persons involved with the operation of BPS shall undertake their respective activities in accordance with the relevant requirements of the OEMP. The OEMP shall also be read in conjunction with the following related documents which exist as separate documents:

- BPS – Emergency Response Plan;
- BPS – Safety, Reliability, Maintenance and Technical Management Plan (SRMTMP);
- Online Site Induction or similar information format.

The operation will also be carried out in accordance with the following documents:

- Development Application DA 361/V025/20 Decision Notification, dated 11 August 2020
- Environmental Protection Licence No 51712
- SONUS, Iberdrola Gas Turbines – Bolivar, Environmental Noise Assessment, dated October 2022.
- Fyfe, Storm Water Management Plan, Iberdrola Australia Bolivar Power, Reference 69291-1, dated 26/4/2022.
- Fyfe, Construction Environmental Management Plan, Iberdrola Australia Bolivar Power, Reference 69291-1, dated 29/11/2021.
- Iberdrola Australia SAGT Pty Ltd Noise Management Plan

8. Reference Documents

Iberdrola endeavour to achieve best practice for all their work activities and acknowledge the importance of the relevant legislative requirements. These requirements include relevant Act, Regulations, Australian Standards, State and National Codes of Practice, along with Iberdrola’s own procedures and policies.

The processes and procedures incorporated into this OEMP are designed to meet the following documents (but not limited to these):

1. Environmental Legislation

- Environmental Protection Act, 1993 SA
- Environmental Protection Regulation, 2009 SA
- Local Government Act, 1999 SA
- National Parks and Wildlife Act, 1972 SA
- Road Traffic Act, 1961 SA
- National Resources Management Act, 2004 SA
- Water Industry Act, 2012 SA
- Work Health and Safety Act, 2012 SA
- Work Health and Safety Regulation, 2012 SA
- Environment Protection and Biodiversity Conservation Act, 1999 (Commonwealth)

2. Iberdrola Policies

- [Health and Safety Policy](#)
- [Code-of-Ethics](#)
- [Workplace-Bullying-Policy](#)

- [Risk-Management Framework Policy](#)
- [Risk Management Framework](#)

3. Australian Standards

- AS/NZS ISO 9001 – Quality Management Systems
- AS/NZS 4801 – Occupational Health and Safety Management Systems
- AS/NZS ISO 14001 – Environmental Management Systems

4. South Australian Gas Turbine Forms

- JSA/SWMS
- Incident Report Form
- Hot Work Permit
- Incident Reporting Communication Protocol
- Vehicle Inspection Checklist
- HazoB's
- Site Induction and Personal Details
- Safety Toolbox Meeting Minutes
- Service Safety Inspection
- Compliance Inspection – Environmental

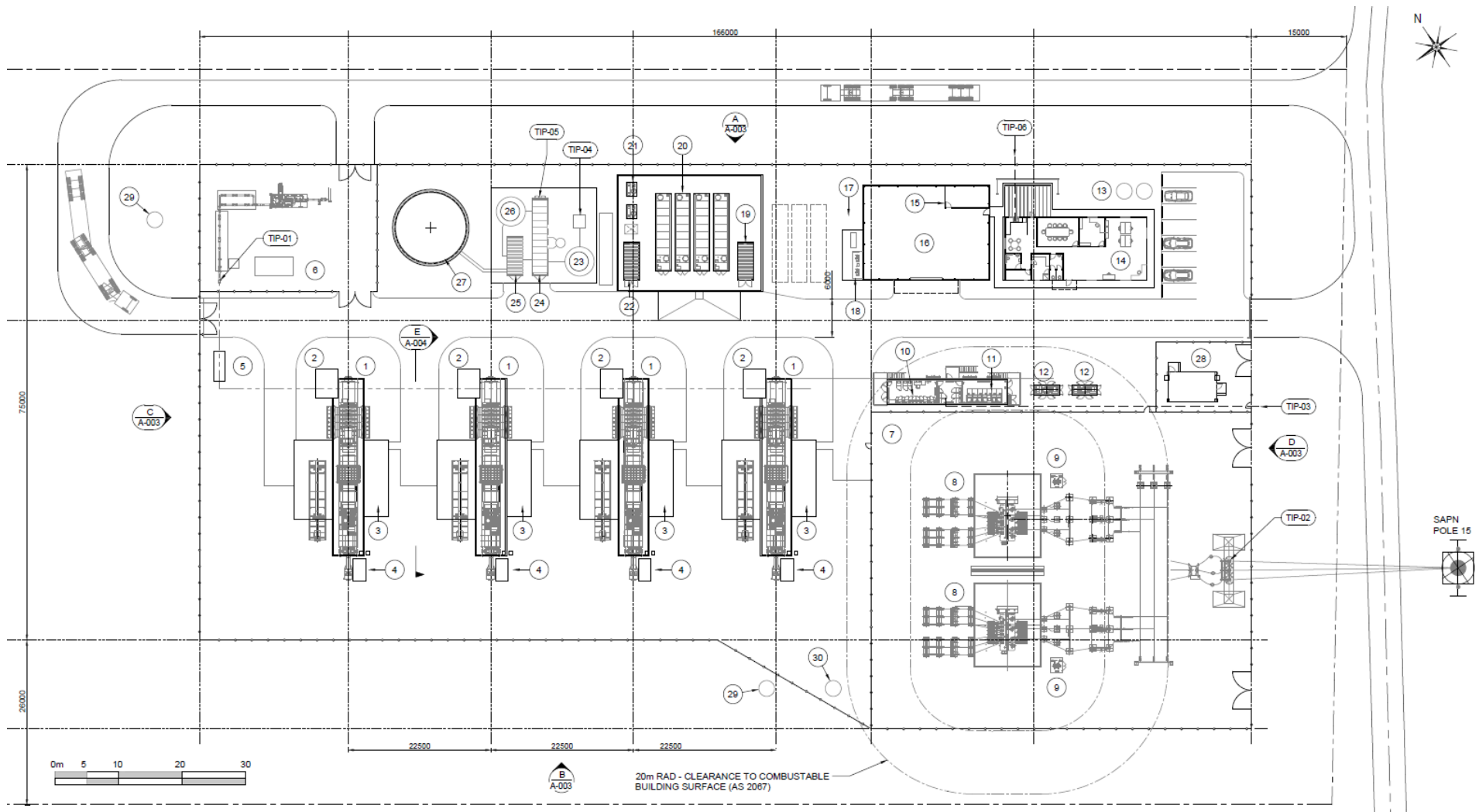
5. South Australian Gas Turbine Plans and Documents

- BPS Safety Management Plan
- BPS Emergency Response Plan
- Service HSE Risk Register
- BPS Community Engagement Plan (Included in the Noise Management Plan)
- BPS Audit Schedule
- BPS Incident Register
- BPS Corrective Action Register
- BPS SDS Register

APPENDIX A Site and locality plan

Internal Use

Internal Use



APPENDIX B Noise Management Plan

Bolivar Power Station

Noise Management Plan

Doc No: BPSG1-IBA-PRJ-PLN-0015



IBERDROLA
AUSTRALIA

Revision History

Date	Author/Reviewer	Version	Revision Notes
01/09/2022	Tim Maddever	A	First draft
12/10/2022	Tim Maddever	B	First Issue
26/10/2022	Tim Maddever	C	Second issue after discussions with EPA
20/02/2023	Tim Maddever Stephen Murphy Jeremy Minahan Elvira Ramos	D	Revised in accordance with issued EPL
05/04/2023	Tim Maddever	E	Revised after EPA comments

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1. Introduction

The Iberdrola Australia SAGT Pty Ltd (Iberdrola) Bolivar Power Station (BPS) facility is comprised of four (4) GE TM 2500 GEN8 Gas Turbine Generators and associated Balance of Plant (BOP) equipment. Iberdrola leases the main generation equipment from the Government of South Australia and the BPS facility provides up to 128 Megawatts (MW) of electricity into the National Electricity Market (NEM).

2. Background

The equipment was originally installed by the Government of South Australian at Lonsdale, South Australia, in November 2017 and operated as an emergency power station. Under the terms of the 25-year lease, Iberdrola relocated the main generation equipment from Lonsdale to 9 Bolivar Interchange Connector Road, Bolivar, South Australia. The Bolivar Power Station was commissioned on fuel oil in December 2022 and is due to be commissioned on gas in May 2023.

Iberdrola is registered in the NEM to operate the facility as an electricity market generator. Iberdrola operates the facility to support renewable energy generation from Iberdrola's wind and solar power generation portfolio and to supply electricity customers in South Australia.

Iberdrola obtained a Development Approval (361/V025/20) for the construction of Bolivar Power Station in 2021. As part of the process to obtain the Development Approval, environmental matters and potential impacts to surrounding areas were assessed.

In coordination with the Environmental Protection Authority (EPA) of South Australia, Iberdrola carried out noise monitoring of the plant when installed at Lonsdale and has used this data to predict its noise emissions and any impacts on relevant noise sensitive receptors at its new location at Bolivar. Iberdrola also conducted a background noise level assessment at Bolivar prior to construction of the plant to assist in determining the environmental noise criteria and for the design of additional noise attenuation for the gas turbines which was installed at BPS.

It is intended that the implementation of this Noise Management Plan (NMP) is in accordance with the conditions of Section 2.6.2 of the Environmental Licence 51712.

The purpose of this NMP is to provide management measures to ensure that any potential noise impacts of the facility on Noise Sensitive Receptors (NSRs) are addressed and minimised where possible. The NMP aims to outline the following:

- Existing environment
- Description of the operational activities, noise data and potential noise impacts
- Noise measurements
- Noise management measures and additional testing required
- Description of roles and responsibilities for implementation
- Community engagement and complaints handling policies

3. Existing Environment

3.1 Noise Sensitive Receptors (NSR's)

The BPS site is located within the Infrastructure Zone as defined in the Planning and Design Code. Nearby NSRs are located within:

- Animal Husbandry Subzone of the Rural Living Zone to the Southeast (Globe Derby Park)
- Rural Zone to the East (Globe Derby Park)
- General neighbourhood Zone to the East (Parafield Gardens)

The closest residences are located approximately 1.0 km and 1.1 km away to the Southeast and East, respectively. The site (red hatching) and closest NSRs (blue shading) are shown in the figure below.

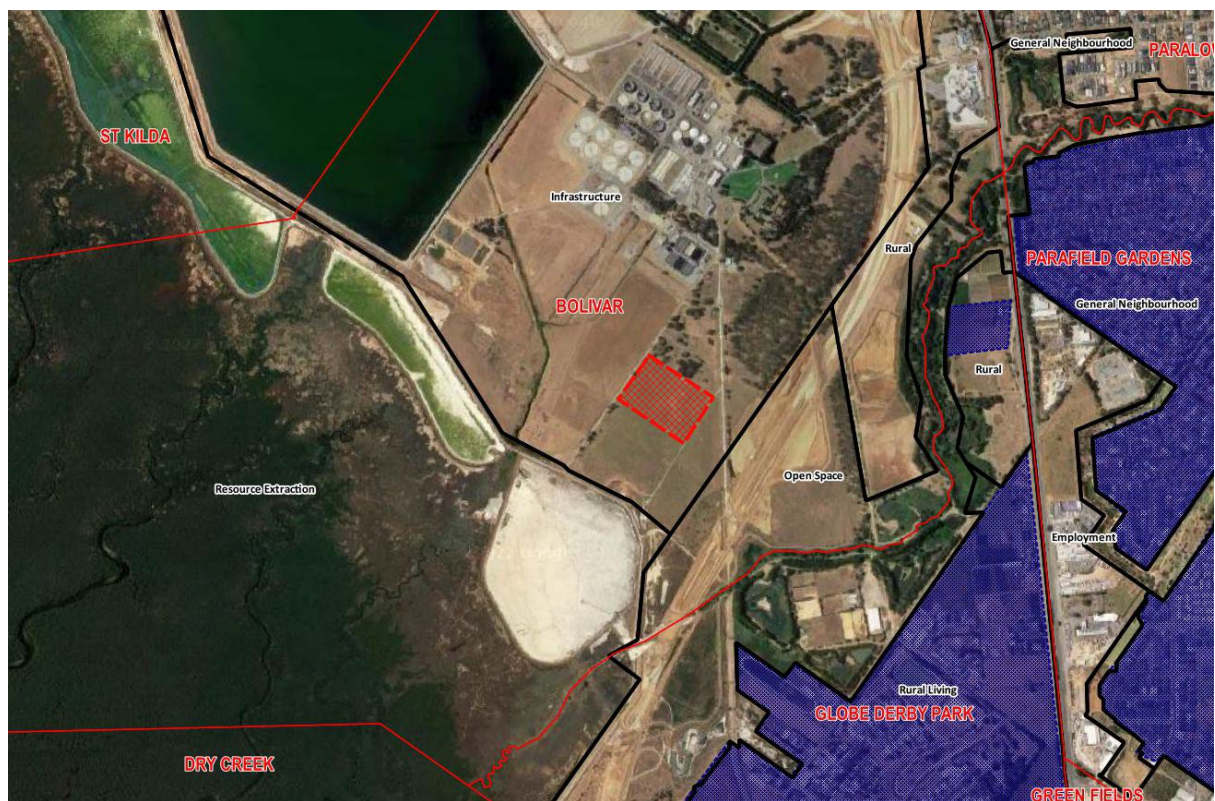


Figure 1 - Bolivar Power Station Site and Surrounding Area

3.2 Measured Ambient Noise Levels

The current acoustic environment is dominated by road traffic noise from the Northern Connector and Port Wakefield Road with some influence from industrial noise from the SA Water Bolivar Wastewater Treatment plant. Background ambient noise measurements were measured in June 2021 (Animal Husbandry Subzone) and August 2021 (Rural Zone and General Neighbourhood Zone).

Animal Husbandry Subzone

The lowest background noise level (L_{90}) recorded during the 7-day period was 41 dB(A) at night (10:00pm to 7:00am) with typical levels of 45 dB(A) at night. The lowest background noise level (L_{90}) recorded during the day (7:00am to 10:00pm) was 44 dB(A) with typical levels of 51 dB(A).

The lowest equivalent noise level (L_{eq}) recorded at any time was 45 dB(A) with typical levels of 50 dB(A) at night and 56 dB(A) during the day.

These levels are indicative of an urban area with the continuous influence of traffic noise.

Rural Zone

The lowest background noise level (L_{90}) recorded during the 7-day period was 37 dB(A) at night (10:00pm to 7:00am) with typical levels of 49 dB(A) at night. The lowest background noise level (L_{90}) recorded during the day (7:00am to 10:00pm) was 50 dB(A) with typical levels of 60 dB(A).

The lowest equivalent noise level (L_{eq}) recorded at any time was 51 dB(A) with typical levels of 61 dB(A) at night and 67 dB(A) during the day.

These levels are indicative of an urban area heavily influenced by traffic noise.

General Neighbourhood Zone

The lowest background noise level (L_{90}) recorded during the 7-day period was 40 dB(A) at night (10:00pm to 7:00am) with typical levels of 48 dB(A) at night. The lowest background noise level (L_{90}) recorded during the day (7:00am to 10:00pm) was 48 dB(A) with typical levels of 56 dB(A).

The lowest equivalent noise level (L_{eq}) recorded at any time was 45 dB(A) with typical levels of 55 dB(A) at night and 60 dB(A) during the day.

These levels are indicative of an urban area with the continuous influence of traffic noise.

4. Operational Activities

Iberdrola operates the plant within the National Electricity Market (NEM). Based on modelling forecasts of previous market conditions in South Australia, Iberdrola anticipates that it is likely to operate the plant as follows:

- Subject to electricity market conditions, the BPS facility is expected to operate on average between 2-4 hours on any one operational day, and approximately 650 - 850 hours total operation per annum (~7-10% of the time)
- Based on approximate average operating hours of 850 hours per annum, BPS is expected to be run for about 600 hours during the 'day' (7am to 10pm) which is about ~11% of the time, and about 250 hours during the 'night' (10pm to 7am) which is about ~8% of the time

- In a typical year the average amount of time that BPS will operate once it has commenced operation is expected to be about 2-4 hours continuously.

4.1 Noise Criteria

The Development Approval requires that the BPS be established in accordance with the *Iberdrola Gas Turbines - Bolivar - Environmental Noise Criteria*, Sonus Report Reference S6452C9.

S6452C9 specifies that the Policy is achieved if:

The noise from the power station

- *when measured at a residence,*
- *in accordance with the Environment Protection (Noise) Policy 2007,*
- *without adjustment for noise character,*
- *in CONCAWE Weather Category 4 conditions,*

is no greater than:

- *46 dB(A) within the Animal Husbandry Subzone;*
- *50 dB(A) within the Rural Zone; and*
- *45 dB(A) within the General Neighbourhood Zone.*

It is proposed that testing for compliance would be conducted in accordance with the above.

In addition, noise monitoring would be conducted in downwind conditions for information purposes.

4.2 Noise Predictions

Noise predictions have been conducted by Sonus and presented in their report (S6452C14, October 2022), based on a traditional noise model (CONCAWE) under neutral weather conditions. The predictions also include the effect of exhaust stack silencers with the following resultant stack sound power level:

31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
126 dB	1298 dB	120 dB	114 dB	107 dB	88 dB	69 dB	89 dB

The predictions result in the following expected far field noise outcome:

Location	CONCAWE Meteorological Category 4
Animal Husbandry Subzone NSRs	46 dB(A)
Animal Husbandry Subzone NSRs	46 dB(A)
General Neighbourhood Zone NSRs	45 dB(A)

Table 1 - Predicted noise levels at the NSRs under neutral weather conditions

5. Noise Management Measures

Noise management measures for operational activities and noise monitoring processes are described in this section of the NMP.

5.1 Commissioning Noise Measurements

The commissioning noise measurement methodology for environmental noise emissions (i.e. far field) is detailed in the Noise Compliance Testing Plan. It generally consists of the following:

- Unattended Class 1 or Class 2 noise monitors installed at a representative location for each NSR group. That is, within the Animal Husbandry Subzone, Rural Zone and General Neighbourhood Zone (i.e., three unattended noise monitors in total).
- Logging duration to be for a minimum of one month to capture at least 30 hours of running time of the BPS (note monitors to be left on site for longer if 30 hours running time is not captured).
- Meteorological data to be captured from the nearest BoM weather station at Parafield Gardens and/or from a local weather station installed at the BPS site.
- Operational parameters of the BPS to be captured via SCADA system to aid with acoustic data analysis and processing.

If the commissioning noise measurements demonstrate compliance with the criteria outlined in Section 4.1, further monitoring will be conducted in accordance with Section 5.4. If the commissioning measurements demonstrate non-compliance with the criteria outlined in Section 4.1, this Noise Management Plan will be updated to consider all reasonable and practicable measures to reduce the impact of the noise.

5.2 Potential Noise Impacts

The potential impact of noise from the BPS is dependent on a number of factors. These include:

- The time of operation;
- The frequency of operation;
- The ambient noise environment while operating;
- The meteorological conditions present;
- The number of turbines operating; and
- The power output of each of the turbines.

Consideration of these factors along with those outlined in the *Environment Protection (Noise) Policy 2007* (Clause 19) must be taken into account when determining the suitable course of action in the event of non-compliance with criteria or a noise complaint.

5.3 Noise Mitigation Measures

5.4 General

A noise hazard/impact identification assessment has been prepared for BPS, refer to APPENDIX C.

5.5 Operation of Gas Turbine Generators and Ancillary Plant

The noise emitted from the exhaust stacks accounts for the majority of all material noise emissions from the Bolivar Power Station, this is also the case for any Open Cycle Gas Turbine unit/s. The individual GE TM2500 Gas Turbine Generators that were installed at the Lonsdale Site and subsequently transferred to BPS are housed inside the OEM standard enclosure packages and are fitted with OEM standard gas turbine exhaust silencers, the enclosures and the exhaust silencers being the means for noise attenuation on the original standard TM2500 gas turbine units.

Noise studies and modelling demonstrated that the standard OEM measures were not sufficient to achieve noise emissions within permitted levels. Iberdrola engaged a specialist engineer to study, specify and design purpose built two-stage noise attenuators for each of the four TM2500 gas turbine generators in order to comply with noise emission requirements and protect the NSR's from impact. The two stage silencers increase the overall height of the exhaust stacks by approximately 10 meters, to a total height of 17 meters per stack, and significantly increase the noise absorption material which exhaust gas is exposed to. At BPS the new two-stage silencers are the primary means for noise mitigation of the operation of the gas turbine generators and ancillary plant.

5.6 Site Traffic and Mobile Plant Activities

Traffic and mobile plant activities, including both heavy and light vehicles, are not assessed as posing either material hazard or impact to the identified NSR's. This is on basis of; the localised nature of the noise emissions, the power and frequencies of the noise emissions and also the low frequency & time of operations being undertaken.

Despite traffic and mobile plant activities being assessed as not representing a material hazard or impact to the NSR's, administrative controls restrict heavy vehicle and mobile plant operations from occurring between 10pm and 6am under normal operating conditions.

5.7 Site Maintenance Works

Site maintenance activities are not assessed as posing either material hazard or impact to the identified NSR's. This is based on the 'light' nature of mechanical works applicable to the TM2500 aero-derivative gas turbine generators, which are physically smaller units and involve predominantly hand-held mechanical tooling used by a single worker or small team of workers, as opposed to larger industrial turbines where larger mechanical tooling and more numerous work parties are required for mechanical maintenance activities.

Despite site maintenance works being assessed as not representing a material hazard or impact to the NSR's administrative controls and restrictions on the permitted hours of these activities are being implemented with all maintenance works prohibited between 6pm-6am under normal operating conditions.

Noise from site maintenance works may represent an occupational health hazard to individual workers in the immediate vicinity of works, this hazard and risk is addressed under processes for the WHS Act and Regulation separate to this Plan.

5.8 Noise Measurement and Monitoring Process

Once the BPS has been commissioned, and the commissioning noise measurements as outlined in Section 5.1 have been completed (with compliance being demonstrated), the BPS will operate the plant subject to demand within the South Australian electricity market conditions.

Over the course of the first year of operation, unattended monitoring in the far field, as described in Section 5.1, will be repeated on a quarterly basis (i.e., on three further occasions) to cover all seasons.

Following this, regular reporting (outlined in Section 7) will be provided to demonstrate that the BPS operational conditions have not changed and that the plant has been appropriately maintained. The far field monitoring, as described in Section 5.1, will occur once (for one month only) every five years to demonstrate on-going compliance with the environmental noise criteria. However, should non-compliance be suspected or identified at any point during operations, further noise testing will occur to verify noise levels to determine if compliance is or is not being achieved.

6. Communication

6.1 Iberdrola's Community Engagement Process

As part of Iberdrola's planned commissioning activities associated with the establishment of BPS, Iberdrola will undertake systematic and proactive communications directly with both residential and business occupancies that are located within the identified NSR's in order to inform them of the existence of the BPS facility, of Iberdrola's commitment to playing a positive role within the local communities in which it operates and also the available mechanisms for contacting Iberdrola in the case of concerns relating to its operations.

Throughout the life of the BPS facility Iberdrola will engage with the community in accordance with its Community Engagement Plan (attached in Appendix A).

6.2 Complaints Handling Process

Iberdrola will respond to and manage complaints in accordance with the Iberdrola Complaints Management Policy and BPS Operations Complaints Management Plan.

Complaints shall also be managed by Iberdrola in accordance with conditions of the Environmental Licence Section 2.3 (S-1).

Where complaints are made regarding noise from the BPS operations, each complaint will be investigated. Initially the investigation will include an assessment of the complaint by Iberdrola with respect to the operation at the time of the event, the known noise characteristics of the facility, and any other activities that occurred on site at the time that may have contributed to the complaint. Based on the internal evaluation, Iberdrola will provide feedback to the complainant and seek satisfactory closure of the matter by the complainant. If the matter is not suitably resolved, Iberdrola will investigate the matter further and may engage an independent noise consultant to assist in further investigation/s.

If recommended by the consultant, Iberdrola will undertake noise monitoring at the location of the complainant's residence to further assist in the investigation. Once monitoring data is available and assessed by the specialist noise consultant, how Iberdrola will address the any issues can be determined and communicated to the complainant.

All noise complaints are recorded in a Noise Complaints Register, including name and address of complainant, address of the event of concern, date and time of day, and the nature of the noise complaint.

7. Reporting

Iberdrola will provide a written annual report to the EPA within 30 days of the end of each reporting period. This report will include the following information:

- Total number of hours of operation for the reporting period (expressed as both total number of hours and the percentage of the total hours in the reporting period)
- Total number of operations/starts for the calendar year as at the end of the reporting period
- If any noise monitoring was undertaken to confirm performance of the facility, the results of noise monitoring undertaken during the reporting period
- Total number of any noise complaints received during the reporting period and the actions taken to address any complaints

The purpose of the reporting is in regard to the implementation and effectiveness of the NMP, pursuant to condition U-1582;

In accordance with the EPL Iberdrola will make the Noise Management Plan and Annual Report available to the public on the Iberdrola Australia website. The NMP will be made available within 7 days of it being approved, and the Annual report will be made available within 7 days of submission.

APPENDIX A - Community Engagement Plan

Bolivar Power Station

Community Engagement Plan

Doc No: BPSG1-IBA-PRJ-PLN-0016



IBERDROLA
AUSTRALIA

Revision History

Date	Author/Reviewer	Version	Revision Notes
01/04/2023	Tim Maddever	0	First draft
17/04/2023	Tim Maddever	1	Issued with Noise Management Plan

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1. Purpose

The purpose of this document is to provide a framework for how Iberdrola proposes to consult, engage and communicate with the community in relation to the liquid fuel generators based at the Bolivar site. Iberdrola is committed to supporting a culture of quality and effective stakeholder and community engagement. Good engagement helps to create better decisions by bringing the voices of citizens and stakeholders into the issues that are relevant to them. This plan has been developed to support the operation of Bolivar Power Station under EPA Licence 51712.

2. Introduction

The Iberdrola Australia SAGT Pty Ltd (Iberdrola) Bolivar Power Station (BPS) facility is comprised of four (4) GE TM 2500 GEN8 Gas Turbine Generators and associated Balance of Plant (BOP) equipment. Iberdrola leases the main generation equipment from the Government of South Australia and the BPS facility provides up to 128 Megawatts (MW) of electricity into the National Electricity Market (NEM).

3. Stakeholders

The following list identifies the key community, government and industry stakeholders:

- Local residents and businesses around the Bolivar site
- SA Power Networks
- SA Water (including the sewerage treatment plant)
- Environment Protection Agency (SA)
- Department of Energy and Mining (SA)
- Department of Planning, Infrastructure and Planning (SA)
- City of Salisbury Council
- Local community groups, including those interested in understanding more about the National Electricity Market

4. Engagement

4.1 Levels of Engagement

During general operation of BPS, communication with stakeholders will be as required for usual business exchange and general information on the BPS available on the Iberdrola Australia web site. In the event of unusual activities on site, a specific engagement process will be undertaken to ensure relevant stakeholders are informed and are given the opportunity to provide input to the circumstance at hand. In accordance with the International Association for Public Participation framework, Iberdrola proposes to adopt the following techniques:

Inform	
Public Participation Goal	To provide the public with balanced and objective information in regard to Bolivar Power Plant operations.
Commitment	For unusual operational circumstances, keep stakeholders informed of relevant information
Public Participation Tools	Bolivar Power Station information is published on the Iberdrola Australia web site

Consult	
Public Participation Goal	To allow and obtain public feedback regarding the ongoing operations of the facility
Commitment	To keep the public informed, listen and acknowledge concerns and provide information on how public input may have influenced decision making processes
Public Participation Tool	Iberdrola website, Complaints Hotline and points of contact for the Bolivar Power Station

Involve	
Public Participation Goal	To work directly with the public operational life of the facility to ensure that public concerns and aspirations are consistently understood and considered
Commitment	To work together with the community to obtain and incorporate their feedback, advice and recommendations into any decisions that may affect them.
Public Participation Tool	Iberdrola website, Complaints Hotline, points of contact for the site and one-on-one meetings where requested by a stakeholder or considered necessary by Iberdrola

Collaborate	
Public Participation Goal	Inform the surrounding community members of the existence and normal operations of the facility
Commitment	To seek advice when formulating a solution or decision that may impact the local community and stakeholders
Public Participation Tool	Plant and/or operations change management public participation which may impact stakeholders associated with the Bolivar Power Station facility.

4.2 Future Engagement

In the event a major maintenance activity of a significant logistics nature is required, Iberdrola will inform relevant stakeholders, e.g., local residences, SA Water, DTF and Salisbury council.

5. Managing Feedback

Iberdrola Energy is committed to addressing any complaints or feedback that may be received from the general public, businesses or local residents.

Complaints handling will require relevant staff to exercise reasonableness, impartiality, fairness and ethics in the decision-making process by officially acting in the public interest.

Iberdrola will endeavour to address complaints in line with its Complaint Management Policy and Protocols.

The table below demonstrates the guiding principles of managing feedback and complaints and provides examples of how these are being implemented or addressed:

5.1 Enabling Feedback

Principle	Detail	Action
People focused	Acknowledge that everybody has the right to provide feedback, and ensure a people focused and proactive approach is adopted when seeking feedback and receiving complaints	Each response is dealt with in a consistent manner to ensure that every correspondent is treated equally
Ensure there is no detriment to the correspondent	No detriment should be suffered by the individual that is providing feedback	Contact details only provided to those who require it to respond to the correspondent
Visibility and Transparency	Well publicised information about how and where feedback can be provided, for example via website, email or phone	Information is easily accessible on the Iberdrola website (www.iberdrola.com.au) and the general public are able to contact Iberdrola via our Dedicated Operations Centre Complaints Line: 1800 917 372

Accessibility	Ensure all communications are accessible.	Communications and engagement tools will meet accessibility standards.
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5.2 Managing Feedback

Principle	Detail	Action
Responsiveness	Promptly acknowledging all feedback received and assess and advise correspondent about process and timelines.	An acknowledgement email will be provided to those who send feedback or complaints via the online submission tool. In respect to phone calls, if an immediate answer cannot be provided, contact details will be taken and a response will be provided as soon as possible.
Objectivity and fairness	All feedback should be managed in an objective, fair and unbiased manner. Each person should be treated respectfully and in the same way no matter what issue is being raised.	Each response will be dealt with in a respectful and consistent manner to ensure that every correspondent is treated fairly and equally.
Privacy and disclosure	Personal information should only be disclosed or used in compliance with relevant privacy laws.	Contact details will only be provided to those who require it to correspond with the complainant.
Communication	Communicate the reason behind your decision to the correspondent, so they understand the facts and reasoning that formed the basis of the decision.	Communications will be reviewed by the relevant technical experts to ensure appropriate level of detail included in each response.

5.3 Stakeholder Management Database

A stakeholder management database will be used to track community engagement. The database will assist in the collation of stakeholder contact details, issues and concerns, resolution, method of contact, contact notes and outgoing communications.

6. Review

This Community Engagement Plan will be reviewed and updated if and when there are any changes at either site that impact on the community or other stakeholders, and require a change to the way in which Iberdrola communicates with the community.

7. Contact Details

Dedicated Operations Control Centre Complaints Line
(9am – 5pm, Monday – Friday)

+61 (02) 8031 9947

Email: complaints@iberdrola.com.au

Website: <https://www.iberdrola.com.au/our-assets/firming-assets/#e223>

APPENDIX B - Operations Complaints Management Plan

Bolivar Power Station



Iberdrola Australia SAGT Pty Limited
ABN 77 635 710 360
Level 17, 56 Pitt Street, Sydney, NSW, 2000
T: 02 8031 9900

Complaints Management Plan

Guidelines for receiving, recording and handling of complaints related to the Bolivar Power Station facility.

SEPTEMBER 2022

Document Reference: BPSG1-PRJ-IBA-PLN-0011-0

Bolivar Power Station

Complaints Management Plan



Revision History

Date	Author	Version	Revision Notes
11/4/2020	Andrew Davis	0	Draft for Internal Review
4/6/2020	Andrew Davis	1	Draft for EPA Review
8/9/2020	Andrew Davis	2	Issue for EPA Review
22/02/2022	Tim Maddever	3	Issue for IBA review
23/02/2022	Stephen Murphy	3.1	Migrated doc to IBA standard template, revised for Bolivar Power Station
6/4/2022	Tim Maddever	3.2	Issued.
21/07/2022	Brenda Harris	0	Controlled to BPSG1
29/9/2022	Stephen Murphy	1	Revised

Bolivar Power Station

Complaints Management Plan



1. INTRODUCTION

This protocol outlines the complaints management procedure to be used by Iberdrola Australia in relation to communication with external stakeholders wishing to register an inquiry or raise a complaint relating to the operation of the Bolivar Power Station (Facility), or during the construction and relocation of the plant from the current location at Lonsdale to the new location at Bolivar.

The definition of 'complaint' as per Iberdrola Australia's Complaints Handling Policy is *"an expression of dissatisfaction made by a third party to Iberdrola Australia, including to its agents and employees, which relates to Iberdrola Australia and its products or services, or the complaints handling process itself, where a response or resolution is explicitly or implicitly expected."*

i. Purpose

The objective of this protocol is to ensure there is a transparent process in place to efficiently and respectfully resolve legitimate issues, concerns or problems raised by individuals or groups in relation to the operation or relocation of the Facility.

The sections below identify the key personnel relevant to this process; describe the procedural obligations of each internal stakeholder; and set out minimum requirements for what information is recorded at the time a complaint or inquiry is received.

ii. Background

Bolivar Power Station is comprised of four (4) GE TM 2500 Gas Turbine Generators and Balance of Plant (BOP) leased from the Treasurer of the State Government of South Australia by Iberdrola Australia SAGT Pty Ltd (Iberdrola Australia). The lease and operation of the Plant by Iberdrola Australia commenced on November 1, 2021.

The Facility provides up to 128MW of electricity to the National Electricity Market (NEM) and is operated by Iberdrola Australia as a commercial firming generation asset. The Plant was previously located in Lonsdale, South Australia, however, has now been relocated to Bolivar, South Australia.

Construction of the plant at Bolivar commenced in February 2022. The plant is scheduled to be recommissioned and returned to commercial operation by the 1st December 2022.

Bolivar Power Station

Complaints Management Plan



The key planning and environmental approvals that govern the project are the Bolivar Development Approval (ref 145/V041/20, dated 29 May 2020) (DA) and the Lonsdale Environmental Protection Authority Licence 51178.

The aspects of these approvals relevant to this Protocol include:

iii. Noise Management Plan and Community Engagement Plan

The DA requires Iberdrola Australia to obtain an environmental authorisation that will include conditions. A condition of the Environmental Licence, Section 2.9, requires Iberdrola Australia to prepare and comply with a Community Engagement Plan (CEP) and a Noise Management Plan (NMP) which details ongoing noise monitoring to be undertaken and include provisions for reporting at the end of each season (four times per year) during the operational phase of the development.

The quarterly reports shall include:

- total number of hours of commercial operation for the season (expressed as both a total number and the percentage of the total hours in the season);
- total hours of commercial operation for the calendar year as at the end of the relevant season;
- results of noise monitoring during the relevant season; and
- the number of noise complaints received, and the actions taken to address these during the relevant season.

iv. Environmental Protection Authority (EPA) Licence

For Lonsdale site Licence 51178 issued by the South Australian Environment Protection Authority (**EPA**), Section 2.3 Complaints Register (S-1) requires that complaints register exists and includes;

- a) The date and time that the complaint was made;
- b) Details of the complaint including the likely cause of events giving rise to the complaint;
- c) The contact details of the complainant (if permitted by the complainant); and
- d) Details of any action take in response to the complaint by the Licensee.

The Environmental protection Licence for yet to be issued for Bolivar Power Station will require a similar complaint management process.

Bolivar Power Station



Complaints Management Plan

The complaints register will be managed by the Bolivar Power Station (BPSG1) Operations and Projects team.

2. CONTACT DETAILS

2.1 Website

The Iberdrola Australia website contains information relating to BPS.

The website is located at <https://www.iberdrola.com.au/our-assets/firming-assets/>

2.2 Social Media

Complaints made on Iberdrola Australia's social media platforms, e.g., Facebook or Twitter channels, are not considered as formally submitted complaints.

When a complaint regarding the South Australian Gas Turbines is made on any of Iberdrola Australia's social media channels, the General Manager, Corporate development, Sustainability and Communications (or other team members of the Communications Team monitoring Iberdrola Australia's social media channels), should advise the external stakeholder of the formal complaints management procedure outlined in this document.

The Operations Manager and relevant Project Manager should also be notified of any such complaint.

2.3 Postal Address

Correspondence to BPS operations team can be sent to Iberdrola Australia can be contacted at the following postal address:

Operations Manager
Iberdrola Australia SAGT Pty Ltd
PO Box 300
Brighton, South Australia, 5048

2.4 Email

The enquiries email address for the project is: complaints@iberdrola.com.au

The recipients of an email sent to this address include Iberdrola Australia's:

Bolivar Power Station



Complaints Management Plan

- Operations Manager – Bolivar Power Station
- General Manager – Operations & Projects
- QHSE Manager – Operations Project Manager – Bolivar Power Station Project

2.5 Phone Calls

Iberdrola Australia has set up a 24-hour phone number for any inquiries, which is:

Dedicated Operations Centre Complaints Line: 1800 917 372

2.6 Bolivar Power Station Project Site Contact

During the SAGT Relocation Project construction works a representative from Iberdrola Australia will be present at site during site operating hours. Any inquiries and/or complaints received in person at site shall be recorded in the register and forwarded to the BPS Project Manager and the BPS Operations Manager.

3. HANDLING INQUIRIES & COMPLAINTS

3.1 Receiving inquiries or complaints

All inquiries and/or complaints address via any of the communication routes and media outlined in Section 2 shall be treated seriously and met with respect.

When receiving a verbal complaint, it is important to record and confirm the complainant's details, if permitted by the complainant (i.e., name, contact number, date and time the complaint was made and an accurate date and time that the complaint is relevant to).

Any person with an inquiry or complaint should be encouraged to provide all the information required to enable Iberdrola Australia to understand the nature of the inquiry and the potential impact or urgency relating to the inquiry.

Once details have been recorded the person making the inquiry or complaint should be advised that their complaint will be registered in a register and that a representative from Iberdrola Australia will respond to their inquiry and/or complaint shortly.

Complaints Management Plan

3.2 Registering the complaint. On receipt of an inquiry or a complaint, it shall be registered immediately in the BPS Stakeholder Engagement Register [BPSG1-PRJ-IBA-REG-0004-A Stakeholder Engagement Register](#) and forward an e-mail notification to:

- complaints@iberdrola.com.au
- BPS Project Manager, Cameron Moore, cameron.moore@iberdrola.com.au
- BPS Operations Manager, Stephen Murphy, stephen.murphy@iberdrola.com.au
- General Manager Liberalised Operations & Projects, Stuart Black, stuart.black@iberdrola.com.au

If the inquiry and/or complaint is in regard to another party works or infrastructure, then we should record the details of the inquiry and forward the details and/or complaint to the third party as appropriate and then respond to the person who raised the inquiry/complaint that we have actioned this with details of who it has been passed through to.

If the complaint is regarding noise, and the OCC Operator did not receive and register the call, advise the OCC of the date and time of the complaint so wind speed and direction can be determined if necessary for far field noise emission impact.

Resolution of the complaints process will be the responsibility of the BPS Project Manager and BPS Operations Manager with support from others within the business depending on the nature of the inquiry and/or complaint.

When responding or communicating and responding to inquiries and/or complaints copies of any correspondence shall be linked and filed in the register itself so that all correspondence can be retrieved and checked.

The register shall be updated with the appropriate actions taken to resolve the complaint or respond to the inquiry.

To ensure consistency with the Iberdrola Australia Group Complaints Handling process:

- the initial response acknowledging receipt of an inquiry or complaint shall be responded to as soon as practicable, and normally within seven days;
- where feasible all complaints should be resolved within 30 days of being received. Any complaint not resolved within 30 days of being received should be referred to Iberdrola Australia's General Manager for Operations;
- once resolution of an inquiry or complaint has been determined, the complainant should be advised of the action made in relation to the complaint

Bolivar Power Station

Complaints Management Plan



and any further remedies (if any) available to the complainant if they are not satisfied with the outcome; and

- subject to any statutory requirements, complaints handling will be conducted at no charge to the complainant.

The BPS register shall be reviewed on a monthly basis and a summary of any inquiries or complaints shall be reported in the internal monthly report.

Refer link to Iberdrola Australia's website:

<https://www.iberdrola.com.au/assets/Complaints-Handling-Policy-12pt-font.pdf>

<https://www.iberdrola.com.au/about-us/about-iberdrola-australia/>

APPENDIX C - BPS Noise Hazard / Impact Identification Assessment

Bolivar Power Station (BPS) Noise Hazard/Impact Identification Assessment							
Noise Emission Source	Impact to NSR?	Occupational Exposure Hazard?	Near Field Noise Model dB(A)	Far Field Model dB(A)			Noise Mitigation Measures
				Animal Husbandry Subzone NSRs	Animal Husbandry Subzone NSRs	General Neighbourhood Zone NSRs	
Stack Emission - Gas Turbine Generators	Yes	Yes	88	46	46	45	Elimination N/A Substitution N/A Engineering Design, Fabrication, Installation and Maintenance of new two-stage noise attenuating exhaust silences Administration Baseline Noise Study of BPS Site Noise Monitoring at Lonsdale Noise Modelling Initial Noise Monitoring BPS Periodic Noise Monitoring Complaints Management Processes PPE Hearing protection required inside BPS boundaries during unit operation
Ancillary Plant - Gas Systems, Diesel and Water Pumps, Air Compressors	Yes	Yes	<88	<46	<46	<45	Elimination N/A Substitution N/A Engineering Enclosures on individual equipment/equipment sets Administration Baseline Noise Study of BPS Site Noise Monitoring at Lonsdale Noise Modelling Initial Noise Monitoring BPS Periodic Noise Monitoring Complaints Management Processes PPE Hearing protection required inside BPS boundaries during unit operation
General Site Operations - Light & heavy vehicle traffic and crane/mobile plant operation	No	Yes	Undefined	Not Applicable	Not Applicable	Not Applicable	Elimination N/A Substitution N/A Engineering Enclosures on individual equipment/equipment sets Administration Restriction on heavy vehicle and mobile plant operations between 6pm-6am under normal operating conditions PPE Task based risk assessment to identify hearing protection requirements
Site Maintenance - Mechanical and steel works	No	Yes	Undefined	Not Applicable	Not Applicable	Not Applicable	Elimination N/A Substitution N/A Engineering Enclosures on individual equipment/equipment sets Administration Prohibition on maintenance works between 6pm-6am under normal operating conditions PPE Task based risk assessment to identify hearing protection requirements

Bolivar Power Station



APPENDIX C Listed Flora and Fauna Species

Status: V = Vulnerable, E = Endangered, CE = Critically Endangered

Scientific Name	Common Name	Status
Birds		
<i>Acanthiza iredalei rosinae</i>	Slender-billed Thornbill (Gulf St Vincent)	V
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E
<i>Calidris canutus</i>	Red Knot, Knot	E
<i>Caildrius tenuirostris</i>	Great Knot	CE
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	V
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	E
<i>Grantiella picta</i>	Painted Honeyeater	V
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	V
<i>Limosa lapponica menzbieri</i>	Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit	CE
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CE
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	CE
<i>Pedionomus torquatus</i>	Plains-wanderer	CE
<i>Pezoporus occidentalis</i>	Night Parrot	E
<i>Rostratula Australia</i>	Australian Painted-snipe	E
<i>Sternula nereis</i>	Australian Fairy Tern	V
<i>Thinornis rubricollis</i>	Hooded Plover	V
Mammals		
<i>Pteropis poliocephalus</i>	Grey-headed Flying-fox	V
Migratory Marine Birds		
<i>Apus pacificus</i>	Fork-tailed Swift	
Migratory Terrestrial Bird Species		
<i>Motacilla cinereal</i>	Grey Wagtail	
<i>Montacilla flava</i>	Yellow Wagtail	
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	
Migratory Wetlands Bird Species		
<i>Actitis hypoleucos</i>	Common Sandpiper	
<i>Arenaria interpres</i>	Ruddy Turnstone	
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	
<i>Calidris alba</i>	Sanderling	
<i>Calidris canutus</i>	Red Knot, Knot	E
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE

Bolivar Power Station



Operational Environmental Management Plan

Scientific Name	Common Name	Status
<i>Calidris ruficollis</i>	Red-necked Stint	
<i>Calidris subminuta</i>	Long-toed Stint	
<i>Calidris tenuirostris</i>	Great Knot	
<i>Charadrius bicinctus</i>	Double-banded plover	
<i>Charadrius leschenaultia</i>	Greater Sand Plover, Large Sand Plover	V
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	E
<i>Charadrius veredus</i>	Oriental Plover, Oriental Dotterel	
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	
<i>Gallinago megala</i>	Swinhoe's Snipe	
<i>Gallinago stenura</i>	Pin-tailed Snipe	
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	
<i>Limosa lapponica</i>	Bar-tailed Godwit	
<i>Limosa limosa</i>	Black-tailed Godwit	
<i>Numenius madagascariensis</i> (Eastern Curlew, Far Eastern Curlew	CE
<i>Numenius minutus</i>	Little Curlew, Little Whimbrel	
<i>Numenius phaeopus</i>	Whimbrel	
<i>Pandion haliaeetus</i>	Osprey	
<i>Phalaropus lobatus</i>	Red-necked Phalarope	
<i>Philomachus pugnax</i>	Ruff (Reeve)	
<i>Pluvialis fulva</i>	Pacific Golden Plover	
<i>Pluvialis squatarola</i>	Grey Plover	
<i>Tringa brevipes</i>	Grey-tailed Tattler	
<i>Tringa glareola</i>	Wood Sandpiper	
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	
<i>Tringa stagnatilis</i>	Marsh Sandpiper, Little Greenshank	
<i>Tringa tetanus</i>	Common Redshank, Redshank	
<i>Xebus cinereus</i>	Terek Sandpiper	

Refer link to Iberdrola Australia's website:

<https://www.iberdrola.com.au/assets/Complaints-Handling-Policy-12pt-font.pdf>

<https://www.iberdrola.com.au/about-us/about-iberdrola-australia/>