

Portland Energy Park

Application Number: **02517**

Commencement Date:
22/07/2024

Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Portland Energy Park

1.1.2 Project industry type *

Energy Generation and Supply (non-renewable)

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

01/06/2025

1.1.4 Estimated end date *

01/06/2075

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Pacific Green Energy Park Portland Pty Ltd (Pacific Green) ('Person proposing the action') proposes the construction, operation and decommissioning of the Portland Energy Park, a utility-scale Battery Energy Storage System (BESS) ('the proposed action'). The proposed BESS will have a capacity of 1GW / 2.5GWh, making it one of the largest battery storage projects in Australia. The Project Area covers approximately 119.87 (referred to as the 'Project Site') and has an overall disturbance footprint of approximately 33.95 ha (referred to as the 'Project Development Area'), meaning an avoidance footprint of

approximately 85.92 ha. The disturbance footprint is considered the maximum extent of disturbance considering all infrastructure and construction requirements (with buffers). It is envisaged that as the physical construction eventuates, the actual disturbance may lessen, however, a conservative disturbance area has been defined to ensure potential construction laydown and access requirements are accounted for (refer to Att B - Concept Layout, pp. 2 & 3 for a clear delineation between the Project Site, Project Development Area, the maximum extent of disturbance, and expected physical footprints of permanent infrastructure).

The proposed action will comprise 250 MW battery 'parks', electricity switchyard infrastructure, transmission line connection into the existing high-voltage network, and associated infrastructure and works such as access tracks, benching, drainage and landscaping. Construction activities will include topsoil scraping (site preparation), electricity cable trenching, benching (imported fill) and foundation piling. Once operational the Portland Energy Park will provide critical energy storage and stability for the National Electricity Market (NEM) grid. By helping to store and manage energy generated from renewable energy sources, the proposed action will support existing and proposed renewable energy projects within Victoria's South West Renewable Energy Zone (SWREZ), while helping to strengthen energy supply and price stability for households across Victoria and support Victoria's energy transition.

The activities subject to this referral will occur on existing farmland (and adjacent road reserves). The land is addressed as Madeira Packet Road, Portland (no street number), within the Glenelg Shire Local Government Area. The proposed action will occur across five parcels of private freehold (Allotment 61A Section 13 Parish of Portland; Lot 1 TP592015 Madeira Packet Road; 333 Madeira Packet Road (SPI 1\LP120030); and 305 Madeira Packet Road (2\LP120030 & 5A~13\PP3414)). Access to Madeira Packet Road will be required within its road reserve, as well as overhead transmission lines oversailing the road.

The following factors provide support for the use and development of a BESS and associated infrastructure within the location:

- Large landholding and appropriate zoning as Industrial 2 Zone (IN2Z – heavy industry)
- Seamless integration with the surrounding electrical infrastructure, particularly the 500 kV high-voltage transmission lines crossing through the north of the Project Site.
- Proximity to energy-intensive users such as the existing Portland Water Treatment Plant and Portland Aluminium smelter (responsible for approximately 10% of Victoria's energy consumption), and access to main roads (Madeira Packet Road is part of the Victorian Principal Freight Network, with direct access to the deepwater Port of Portland).
- Located within the Southwest Renewable Energy Zone (as designated by the Australian Energy Market Operator and the Victorian Government), providing support for existing and proposed renewable energy projects.
- Conducive to Portland's transition to renewable energy, with onshore windfarms in operation and proposed, as well as the recently declared Southern Ocean Offshore Wind Area.

Nature Advisory Pty Ltd have undertaken ecological assessments to inform the proposed action's design and State and EPBC processes. Multiple site investigations (including targeted surveys in April 2024) have informed their report, a Matters of National Environmental Significance (MNES) Self-Assessment report (June 2024) (Att A – MNES Report). The concept design for the project has evolved iteratively to consider multiple technical assessments and seeks to avoid and minimise impacts where possible.

Nature Advisory's investigation combined both desktop analysis and field surveys, where vegetation and habitat were mapped, and targeted surveys were completed. Based on their findings, an assessment of the significant impact of the proposed action on potential listed flora and fauna species and ecological communities was completed. The core assessment area comprised 90 hectares across the private landholdings at Lot 1 Madeira Packet Road ('Portland West'), Allotment 61A Madeira Packet Road ('Portland East'), 333 Madeira Packet Road and 305 Madeira Packet Road ('Portland North') Portland, and the adjacent roadsides of Madeira Packet Road, Tecoma Road and Oleria Road. Additionally, a broader landscape assessment was undertaken of Blue-winged Parrot *Neophema chrysostoma* habitat.

Of the activities associated with the proposed action, the two activities that are considered to interact with MNES are expanded below:

1. Ground disturbance (site preparation/topsoil scraping for benching and construction):

The proposed development footprint is expected to impact the foraging habitat of the Blue-winged Parrot, which has been recorded foraging on-site during both summer and winter. This foraging habitat is mapped only on Lot 1 TP592015, Madeira Packet Road. A total of 10.827 hectares of foraging habitat for the Blue-winged Parrot will be affected by the construction of the 500kV terminal station, including activities such as earthworks, drainage, and other construction requirements. For more details, please refer to Figure 4: Impacts to MNES in Att A - MNES Report (pp. 19). Importantly, the proposed action and associated disturbance activities are limited to foraging habitats made up of predominantly exotic pasture grasses and sedges and do not impact the roosting and nesting habitats, which are locally abundant throughout the region. Given the exotic nature of the foraging habitat lost, the impact is not considered significant (Att A – MNES Report, Section 7.1.1, pp. 20).

2. Vegetation removal (access and power lines):

The presence of Southern Brown Bandicoot *Isododon obesulus* and Swamp Antechinus *Antechinus minimus* within coastal scrub around the farm dam (Habitat Zone AA) and along the boundary of the study area (Habitat Zone's X, AU, RC, RE, RF and RG) is assumed (Att A – MNES Report, Section 5.3, pp 16). Any removal or fragmentation of suitable habitat is considered a threatening process for these species, which depend on dense cover for breeding, foraging, and movement. A total of 0.072 hectares of potential habitat (Heathy Woodland EVC 48) for the Southern Brown Bandicoot and Swamp Antechinus may be affected due to road access construction to Madeira Packet Road and the construction of transmission lines, which will require vegetation to be cleared and/or lopped. Please refer to Figure 4: Impacts to MNES in Att A - MNES Report (pp. 19). As detailed in the MNES Report (Attachment A – MNES Report, Section 7.1.3, pp. 26) this impact is considered non-significant, as only a small area of foraging and dispersal habitat will be removed. This is unlikely to result in a long-term decrease in the size of an important population of these species.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Planning Application

In Victoria, planning approvals are administered through the *Planning and Environment Act 1987* (P&E Act). The proposed action is located within the Glenelg Shire local government area and falls under the Glenelg Planning Scheme. According to the planning scheme, the proposed action's land use term (development of a BESS and associated infrastructure) is classified as 'Utility Installation' and will require planning permission. The Minister for Planning will be the Planning Authority for the application.

The proposal aligns with the purposes of the relevant zones and overlays, as well as key State, Regional, and Local policies within the Glenelg Shire Planning Scheme. It supports various Federal and Victorian policy objectives related to grid infrastructure, renewable energy and emissions reduction. A planning permit application is currently being prepared for submission to the Minister of Planning.

The proposal does not meet the thresholds to trigger assessment under the *Environment Effects Act 1978*.

Flora and Fauna Assessment

Threatened species, ecological communities and migratory species declared Matters of National Environmental Significance (MNES) are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cth.). An assessment of the proposed action and its potential impacts on MNES was completed by Nature Advisory to inform this referral (See Att A - MNES Report). The report concludes that the proposed action has the potential to – but is unlikely to – have a significant impact on the Blue-winged parrot. Additionally, the proposed action is unlikely to have a significant impact on the Southern Brown Bandicoot and Swamp Antechinus.

The *Flora and Fauna Guarantee Act 1988* (FFG Act)(Vic.) lists threatened and protected species and ecological communities. The Proposal is consistent with the purposes of the FFG Act in that it does not impact threatened species or communities. The MNES Report (Att A, Appendix 3, pp 73) addresses the requirements of the FFG Act.

Other relevant legislation/guidelines that the project will address include:

- *Catchment and Land Protection Act 1994* (CaLP Act).
- Victoria's Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017a)

Cultural Heritage

The project is located on Gunditjmara Country.

Places of Aboriginal Cultural Heritage are protected under the *Aboriginal Heritage Act 2006* (AH Act). The primary purposes of the AH Act are to protect Aboriginal cultural and intangible heritage in Victoria and to empower Traditional Owners to act as guardians of their cultural heritage on behalf of Aboriginal people and the broader community.

In 2023, a desktop assessment was conducted to understand the local Indigenous history of the project area and identify any First Nations heritage values relevant to the site. The assessment revealed three previously recorded Aboriginal places within the proposed project area. To ensure the proposed action does not unduly impact these known locations of First Nations cultural heritage, a Cultural Heritage Management Plan (CHMP) is being prepared.

Community Engagement

A community and stakeholder engagement strategy was prepared for the project in accordance with the following key policies:

- Clean Energy Council's Best Practice Charter for Renewable Energy Projects (2019)
- Department of Transport and Planning's (DTP) Community Engagement and Benefit Sharing in Renewable Energy Development: Guide for Renewable Energy Developers (updated 2021),
- DTP's Solar Energy Facilities Design and Development Guideline (updated 2022, which contains guidelines on BESS facilities),
- International Association for Public Participation's (IAP2) Public Participation Spectrum (2018).

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Pacific Green is committed to open and transparent engagement with the Portland community and relevant stakeholders. A project-specific strategy was prepared, replaced by a Consultation Summary Report (Att D) that outlines key objectives, activities and outcomes of the community and stakeholder engagement process. The primary phases of community and stakeholder engagement have included:

- **Early design and feasibility:** engagement with involved and potential landowners, engagement with direct neighbours, direct stakeholder meetings, and a Community Information Drop-in Session (February 2024) coinciding with the public announcement of the project. These activities included meetings with various State and Local Governments and agencies, a project-specific website and letter mailouts.
- **Planning application:** Further direct neighbours, stakeholder and community information drop-in session engagement is planned to occur mid-2024, prior to lodging the planning permit application. The team has been actively monitoring and responding to local stakeholders' interest in the project.
- **Construction and operational phases:** ongoing stakeholder and community engagement will occur prior to and during future project stages.

Direct engagement with the relevant Registered Aboriginal Party (RAP) has been undertaken through the Cultural Heritage Management Plan process. This process and key steps are summarised in Section 6.1.4 of Att D - Consultation Summary Report (pp. 22 & Appendix I). There have been more than 20 meetings/points of contact about the CHMP, including in-person, site walkover, and online. Key steps include the September 2023 inception meeting, October 2023 walkover, and complex site testing investigations between February and May 2024.

1.3.1 Identity: Referring party

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The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

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See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

☒ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	90656657984
Organisation name	COGENCY AUSTRALIA PTY LTD
Organisation address	Level 6 West, 84 William Street, Melbourne 3000

Referring party details

Name	Billy Greenham
Job title	Associate Director
Phone	0452593428
Email	hello@cogencyaustralia.com.au
Address	Level 6 West, 84 William Street, Melbourne 3000 VIC

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	73667082911
Organisation name	PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD

Organisation address 3121 VIC

Person proposing to take the action details

Name Joel Alexander

Job title Managing Director

Phone 0497335833

Email joel.alexander@pacificgreen.com

Address Level 4/459 Church St, Richmond VIC 3121

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Pacific Green has a satisfactory record of responsible environmental management record and has had no proceedings under Commonwealth or State law regarding the protection of the environment.

Pacific Green is a global leader in grid-scale battery development with over 1 GWh of energy storage capacity delivered globally. By developing and maximising return from renewable energy, energy storage systems and emission control technologies, Pacific Green is helping to address the world's demand for cleaner and more sustainable energy. The organisation is committed to open and transparent engagement with the communities in which it operates and is dedicated to creating a cleaner environment for our communities. It does this by delivering innovative energy storage solutions that enable Australia's net-zero transition and partnering with communities where it delivers projects to develop wider social value beyond its core business.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Pacific Green is dedicated to creating a cleaner environment for our communities, by delivering innovative energy storage solutions that enable Australia's net-zero transition. Pacific Green is committed to responsible development. In addition to first-class technical engineering that's designed to meet International Electrotechnical Commission (IEC) and Australian standards, all Pacific Green energy storage projects undergo rigorous safety and security testing to minimise safety risks.

Pacific Green is committed to providing a positive environmental development for the Portland Energy Park. The primary mitigation tool is to avoid impacts through intelligent design, then minimise and offset any impacts as required. The project will include planting local species vegetation and rehabilitation of wetland areas, to improve biodiversity values. Already, Pacific Green has fenced exclusion areas and planted native species, with significant additional planting to come.

Please see Att F - Pacific Green Climate Change Statement & Att G - Pacific Green Sustainability Policy and Approach.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

No

1.3.3.2 Is Proposed designated proponent an organisation or business? *

Yes

Proposed designated proponent organisation details

ABN/ACN 73667082911

Organisation name PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD

Organisation address 3121 VIC

Proposed designated proponent details

Name James Segundo

Job title	Project Administrator
Phone	0432034631
Email	james.segundo@pacificgreen.com
Address	Level 4/459 Church St, Richmond VIC 3121

1.3.4 Identity: Summary of allocation

✔ Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	90656657984
Organisation name	COGENCY AUSTRALIA PTY LTD
Organisation address	Level 6 West, 84 William Street, Melbourne 3000
Representative's name	Billy Greenham
Representative's job title	Associate Director
Phone	0452593428
Email	hello@cogencyaustralia.com.au
Address	Level 6 West, 84 William Street, Melbourne 3000 VIC

✔ Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	73667082911
Organisation name	PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD
Organisation address	3121 VIC
Representative's name	Joel Alexander
Representative's job title	Managing Director

Phone	0497335833
Email	joel.alexander@pacificgreen.com
Address	Level 4/459 Church St, Richmond VIC 3121

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

ABN/ACN	73667082911
Organisation name	PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD
Organisation address	3121 VIC
Representative's name	James Segundo
Representative's job title	Project Administrator
Phone	0432034631
Email	james.segundo@pacificgreen.com
Address	Level 4/459 Church St, Richmond VIC 3121

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

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1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

Yes

1.4.10 Enter purchase order number *

Pacific Green Energy Park Portland Pty Ltd

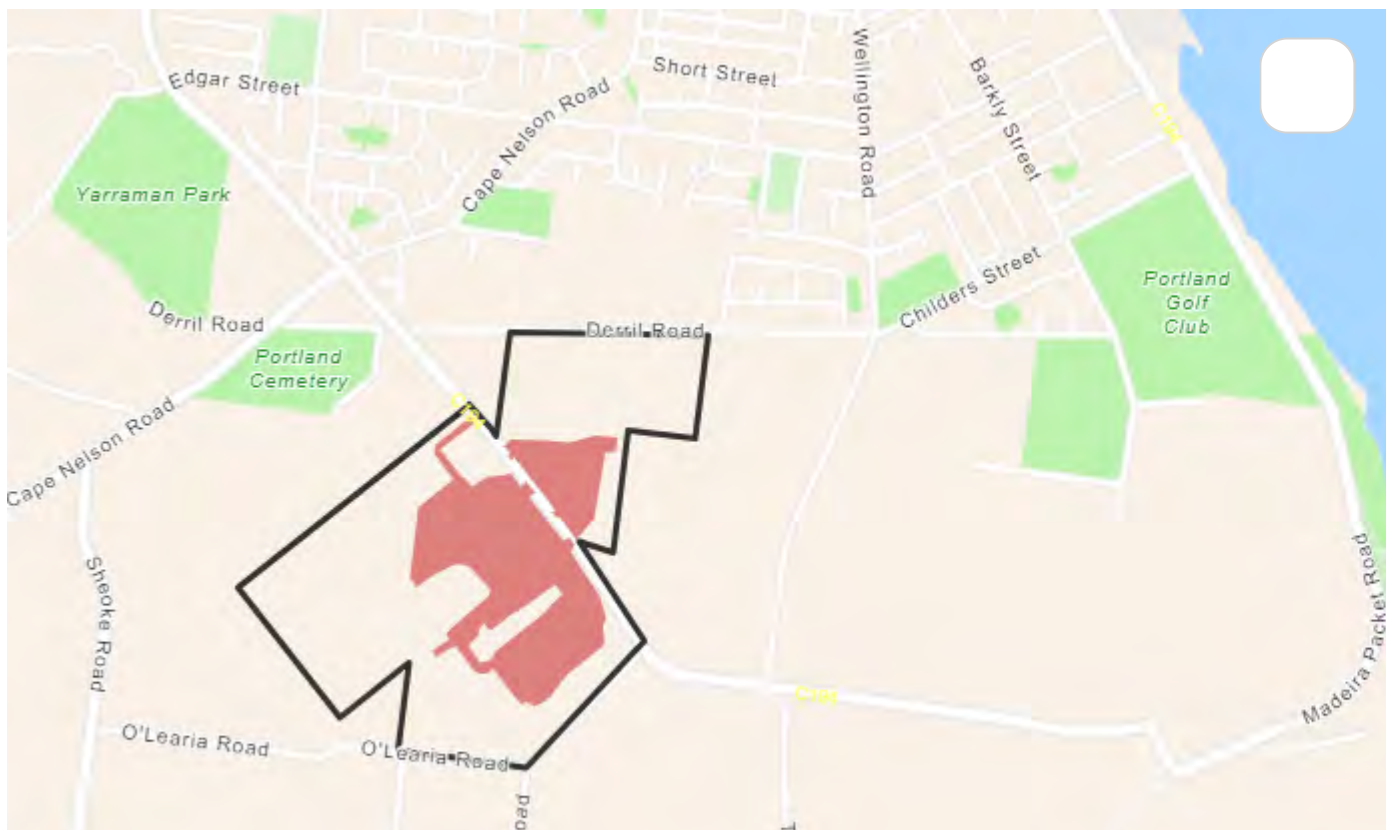
1.4 Payment details: Payment allocation

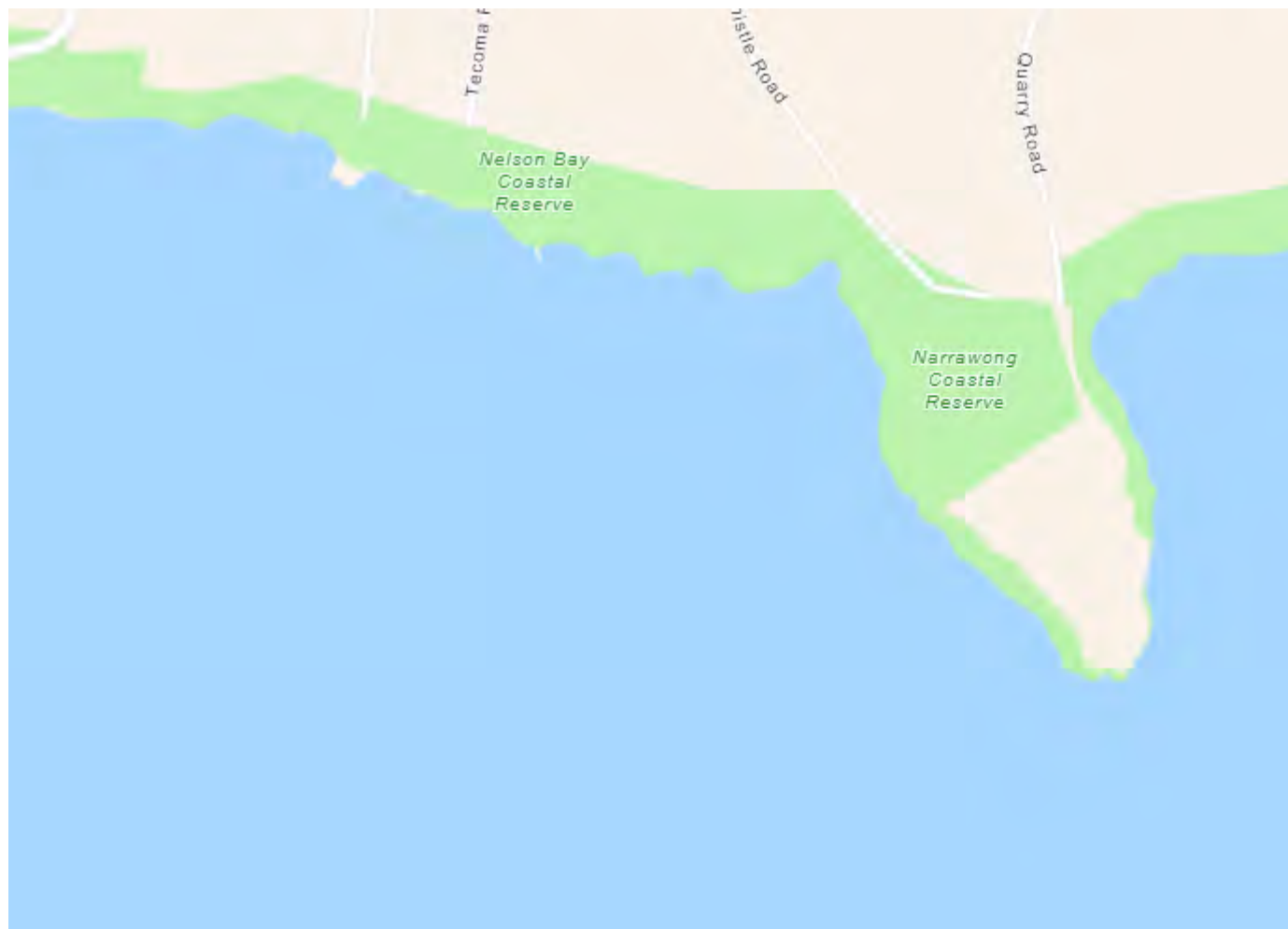
1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint





Project area: 119.87 Ha

Disturbance footprint: 33.95 Ha

Maptaskr © 2024 -38.373718, 141.671227

Powered By Esri - Sources: Esri, TomTom, Garmin, F...

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Madeira Packet Road

2.2.2 Where is the primary jurisdiction of the proposed action? *

Victoria

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The proposed action spans multiple parcels of land, either side of Madeira Packet Road, Portland. Not all land parcels include street address numbers. Refer to Att B – Concept Layout for an overview of the land comprising the proposed action. The relevant project land covers five parcels of freehold land known under multiple addresses, as well as the adjacent road reserves:

- (*Street address, 'Project Reference', Standard Parcel Identifiers*):
- Madeira Packet Road, 'Portland East', Lot 1 TP592015;
- Madeira Packet Road, 'Portland West', Allotment 61A Section 13 Parish of Portland;
- 333 Maderia Packet Road, 'Portland North', 1\LP120030; and
- 305 Maderia Packet Road, 'Portland North' 2\LP120030 and 5A~13\PP3414.

All land parcels are private freehold land, with works also required in the adjacent road reserve (public). Pacific Green have option agreements in place for all involved private land, for purchase or long-term lease. Please refer to Att B - Concept Layout, pp. 2.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The proposed action is located near Portland, Victoria, approximately 2.4 km south of the town centre (See Att B – Concept Layout. pp 1).

The immediate vicinity of the project area is characterised by a mix of industrial, recreational, and rural residential uses. Nearby, the Portland area features several parks and forests, including Cape Nelson State Park (6.8 km southwest), Mount Chaucer Heath (4.3 km west), Portland H47 Bushland Reserve (2.2 km west), Yellow Rock Coastal Park (1.2 km southwest), Nelson Park (0.64 km north), and Yarraman Park (0.8 km northwest).

The project area's existing environmental conditions are highly modified due to historic land clearing for farming purposes. Historically the land would have supported dense heathy woodlands and woodland scrubs, on a natural landform. This has all been historically cleared except for small fragmented patches that occur along the boundary of the project area. The landform also has historically been subject to earthworks that have modified low-lying depressions (ephemeral water areas) and informal drainage lines (Please refer to Att A - MNES Report Section 4 pp. 11-12).

In addition to clearance and earthworks, the properties have been used (and still are) for active cattle farming throughout the paddocks within the project area. This practice has resulted in the ground being heavily pugged and highly modified from its original condition. The condition of the remaining vegetation is poor and considered to be of low quality due to the absence of canopy trees, loss of native species diversity and a very high cover of noxious weeds including grassy, herbaceous and woody weeds. Further information is available in Att A - MNES Report Section 4 pp. 11-12 for further information on the conditions of the project area.

The land selected for the proposed action is within an Industrial 2 Zone under the Glenelg Planning Scheme and is currently used for agricultural grazing. The surrounding land is also zoned Industrial 2 Zone. The high voltage 500 kV Heywood Terminal to Portland Aluminium transmission line dissects the north of the project area. The surrounding area includes operational wind farms. The project area is bordered by the Wannon Water Portland Water Reclamation Centre and the Bald Hill Reservoir to the south, an access road and agricultural land to the east, and additional agricultural land to the northwest and west. The project area is also located in proximity to the existing Portland Aluminium smelter.

Access to the project area is via Madeira Packet Road, with some land parcels on the northern and southern sides. This two-lane sealed road connects southern Portland to the major road network (A1, A200) and the Port of Portland. Secondary access is available via Tecoma Road and Oleria Road. These secondary roads are also used for accessing nearby residential dwellings, the Wannon Water facility and agricultural land.

3.1.2 Describe any existing or proposed uses for the project area.

The project area is currently used for agricultural grazing. Consistent with the clearing for the historic and ongoing use of the project area for grazing, there is minimal remnant native vegetation. There are no other known proposed uses for the project area.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

There are no notable natural features within the project area. Due to historical and current agricultural use, the majority of the project area has been cleared and is dominated by introduced pasture grasses and commonly associated weed species, with native vegetation generally restricted to drainage lines, wet depressions, and roadsides.

The proposed action lies within the Glenelg Plain bioregion, within the Glenelg Hopkins catchment management area and on the Traditional Lands of the Gunditjmarra People.

Nearby significant natural features (See Att B – Concept Layout, pp.1) include the Nelson Bay Coastal Reserve, Discovery Bay Coastal Park, and Narrawong Coastal Reserve. These reserves are characterized by heathy woodland and coastal scrub, common natural features in the area. A large patch of this habitat type is located adjacent to the southeastern boundary of the study area. Native vegetation within the study area is connected to this habitat through dense coastal scrub along the roadsides, creating a contiguous corridor with the local reserves. Roadside vegetation in the study area serves as an important link between smaller habitat areas to the northwest, within an otherwise largely modified landscape.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The project area is predominantly flat, with some low-points and small dune rises. The majority of the site is between 36-37 m AHD, with a full range between 35-45 m AHD. The project area is characterised by areas of relatively flat pasture land, small sand dune rises (with elevated cultural heritage sensitivity), and low points that are seasonal swamps. The concept layout has been designed to avoid low swamp areas and the higher elevations with cultural sensitivity.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Initial assessments conducted by Nature Advisory identified three habitat types within and surrounding the project area: wooded, grassland, and aquatic. Significant nearby habitats include a large patch of heathy woodland/coastal scrub adjacent to the southeastern boundary, connected by dense coastal scrub along roadsides to the Nelson Bay Coastal Reserve, Discovery Bay Coastal Park, and Narrawong Coastal Reserve.

The **wooded habitat** identified within the assessment consists of non-indigenous trees and dense coastal scrub along roadsides. No hollow-bearing trees were observed during the field assessment, however, trees planted as windbreaks provide breeding and foraging habitat for common native bird species, mammals and potentially roosting habitat for bats. Brown Falcon *Falco berigora* and Brown Goshawk *Accipiter fasciatus* were likely utilising the windbreak on 305 Madeira Packet Road, both species were observed feeding fledglings perched in the pines. Yellow-tailed Black Cockatoo *Zanda funereal* were observed foraging on the pinecones on each day of the summer survey and two Koalas *Phascolarctos* were observed resting in the planted windbreak of eucalypts adjacent to the eastern boundary of 305 Madeira Packet Road. Dominant native species included Coastal Wattle (a recognised native 'weed' species), Coastal Beard-heath *Leucopogon parviflorus*, and Coastal Tea-tree *Leptospermum laevigatum*. Native graminoids including Coast Sword-sedge *Lepidosperma gladiatum*, Thatch Saw-sedge *Gahnia radula* and Spear-grass *Heteropogon contortus* occurred sparsely. Weed cover was generally high with Sweet Pittosporum *Pittosporum undulatum*, Mirror Bush *Coprosma repens*, Kikuyu *Pennisetum clandestinum* and Blackberry being common. Weediness aside, this habitat provided an important foraging and nesting resource for threatened species including Rufous Bristlebird *Dasyornis broadbenti* and potentially Southern Brown Bandicoot and Swamp Antechinus. This habitat is recognised to provide sufficient cover to be utilised as a movement corridor for these species as well as other, more common native fauna.

Grassland habitat is dominated by introduced pasture grasses. Generally, the condition of this habitat was considered to be poor due to the absence of native species diversity and high cover of noxious weeds. Sparse native rush areas provide a foraging habitat for Blue-winged Parrots.

Aquatic Habitat within and surrounding the project area includes wetlands and drainage channels which provide breeding and foraging habitat for common frogs and waterbirds. Wetlands fringed by native rush also support habitat for Blue-winged Parrots.

Based on the assessments undertaken to date, the proposed action has the potential to impact flora and fauna species. No listed ecological communities were considered to have the potential to occur within the project area and are not expected to be impacted by the proposed action.

The following listed flora species were considered to have the potential to occur within the project area:

- River Swamp Wallaby Grass *Amphibromus fluitans* (Vulnerable)
- Swamp Fireweed *Senecio psilocarpus* (Vulnerable)
- Swamp Everlasting *Xerochrysum palustre* (Vulnerable)

Subsequently, targeted surveys were undertaken for these species in October and November 2023 (Att A – MNES Report, Appendix 3, pp 45). Allotment 61A Section 13 Parish of Portland, Lot 1 TP592015 Madeira Packet Road and the adjacent roadsides were surveyed for the abovementioned species, in accordance with the relevant guidelines. No individuals of the above-mentioned species were recorded. These species are considered unlikely to occur. Therefore, no listed threatened flora species are expected to be impacted by the proposed action.

The following nine listed fauna species were considered to have the potential to occur within the project area:

- Blue-winged Parrot (Vulnerable)
- Fork-tailed Swift *Apus pacificus* (Migratory)
- Latham's Snipe *Gallinago hardwickii* (Vulnerable & Migratory)
- Rufous Fantail *Rhipidura rufifrons* (Migratory)
- Satin Flycatcher *Myiagra cyanoleuca* (Migratory)
- White-throated Needletail *Hirundapus caudacutus* (Vulnerable & Migratory)
- Southern Brown Bandicoot (Endangered)
- Swamp Antechinus (Vulnerable)
- Southern Bent-wing Bat *Miniopterus oriane basssanii* (Critically Endangered)

However, development of the study area was deemed only to have the potential to impact on the following three species:

- Blue-winged Parrot (Vulnerable)
- Southern Brown Bandicoot (Endangered)
- Swamp Antechinus (Vulnerable)

Blue-winged Parrot were observed foraging within the study area during summer and winter, confirming their presence and utilisation of the project area for feeding. The proposed action will require the removal of 10.827 ha of foraging habitat for the species. Given the extensive areas of similar habitat throughout the broader landscape, it is unlikely that the species is reliant on habitat within the study area. Additionally, no roosting or nesting habitat is proposed to be impacted by the project. However, the MNES listing of the species states that habitat critical to the survival or important habitat for Blue-winged Parrot includes (but is not limited to) areas that are necessary for foraging and staging habitats found from coastal, sub-coastal and inland areas, and wetlands near the coast (DCCEEW 2023c). Any removal of such habitat is considered a threatening process for this species, as such there is the potential for a significant impact to the species.

Targeted surveys have not been undertaken for Southern Brown Bandicoot or Swamp Antechinus. Therefore, presence for Southern Brown Bandicoot and Swamp Antechinus have been assumed in all areas of suitable habitat. The proposed action will require the removal of 0.072 ha of potential habitat for these species. Given that the proposed action is only proposing to remove a relatively small area of habitat in comparison to the extensive areas of suitable habitat in the surrounding landscape, impacts to these species are unlikely to be significant

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Due to historical land clearing and intense grazing pressure on the land, the vegetation of the project area has been highly modified and in some areas is also heavily pugged. In general, the condition of the vegetation is poor due to the absence of canopy trees, loss of native species diversity and a very high cover of noxious weeds including grassy, herbaceous and woody weeds. The study area contained relatively uniform introduced pasture, the most common species including Kikuyu, White Clover, Capeweed *Arctothea calendula* and Flatweed *Hypochaeris radicata*. Occasional woody weeds included African Boxthorn *Lyceum ferocissimum*, Blackberry and Gorse *Ulex*.

Native vegetation within the project area consisted predominantly of Aquatic Herbland and healthy woodland that had been significantly modified. Additionally, scattered Austral Bracken *Pteridium esculentum* and native Rush *Juncus usitatus* at varying covers were observed within the study area. Native tree cover in the study area was limited, with two isolated Swamp Gum *Eucalyptus ovata* in very poor health and planted trees occurring in Allotment 61A Section 13 Parish of Portland and a number of eucalypts in 333 Madeira Packet Road. The roadside native vegetation included a shrub layer of Coast Wattle *Acacia sophorae* with some Coastal Beard-heath over a densely weedy understorey, mainly Kikuyu and Cocksfoot *Dactylis glomerata*, with scattered Austral Bracken. Native graminoids included Coast Sword-sedge Thatch Saw-sedge and Spear-grass.

The field assessment was completed in August 2023 and during this time all the wetlands observed had relatively large open-water zones and shallow submerged zones. They lacked fringing emergent vegetation such as rushes and sedges, native grasses and riparian woody vegetation. Introduced pasture grass often remained dominant except in the deepest areas, with herbaceous weeds in all of the wetlands including White Clover Buck Horn's Plantain *Plantago lanceolata*, Water-buttons *Cotula coronopifolia* and Hairy Hawkbit *Leontodon taraxacoides*. Native aquatic species in the deeper drainage lines and shallow wetlands included River Buttercup *ranunculus papulentus*, Swamp Crassula *Crassula helmsii*, Pennywort *Hydrocotyle spp.* and Southern Water-ribbons *Cyanogeton alcockiae*. The native wetland plants were likely the result of natural colonisation rather than from a remnant wetland community in the area. Please refer to Att A – MNES Report for more information.

The soil profile of the project area is typically sandy and/or clay base.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

The project area is not affected by a heritage overlay under the planning scheme. No areas are listed on the World Heritage Convention occurring within or adjacent to the project area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The project area is located on Gunditjmara Country.

Gunditjmara Country is made up of four distinct landscapes; Tungat Mirring (stone Country), Koonang Mirring (Sea country), Woorraworook Mirring (forest Country) and Bocara Woorraworook Mirring (River Fores Country). The proposed action is located on Koonang Mirring (Sea country).

A Cultural Heritage Management Plan (CHMP) is being prepared by GML Heritage. A desktop assessment was completed in 2023 to understand the local Indigenous history of the project area and to determine any First Nation's Heritage values relevant to the area. Three previously recorded Aboriginal places are present within the area of the proposed action. To ensure the proposed action does not unduly impact upon known locations of First Nation's Cultural Heritage Values, a CHMP is being prepared. Currently, the CHMP is in early draft, following significant complex testing across the project area. Early investigations, including site walkover, identified heightened cultural sensitivity on the dune rises and as such, informed the concept design, which has been reworked to predominantly avoid dune rises. Please see Att C - CHMP Desktop DRAFT July 2024 (DRAFT_Redacted) for more details. Please also note that Att C - CHMP Desktop DRAFT July 2024 (DRAFT_Redacted) will not be made publicly available as it contains Indigenous cultural sensitivities.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

There are no defined waterways that run through or near the project area, with the topography creating low-lying wetland areas. During the project area's use for agricultural grazing, informal drainage channels have been dug, and several depressions that are filled during rainfall events are highly modified. These modified wetlands within the project area are of varying size and depth, including constructed drainage lines, seasonally-flooded pastures, and shallow wetlands with open water. The project design layout has been informed by pre and post-development hydrology modelling. The design achieves no net-negative offsite flood impacts.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

There are no World Heritage listed sites within or near the location of the proposed action.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

There are no National Heritage listed sites within or near the location of the proposed action.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The nearest Ramsar wetlands are approximately 17km away from the location of the proposed action, and the proposed action is not directly upstream of the Ramsar wetlands.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
No	No	Amphibromus fluitans	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass
Yes	No	Antechinus minimus maritimus	Swamp Antechinus (mainland)
No	No	Ardenna grisea	Sooty Shearwater
No	No	Balaenoptera borealis	Sei Whale
No	No	Balaenoptera musculus	Blue Whale
No	No	Balaenoptera physalus	Fin Whale
No	No	Botaurus poiciloptilus	Australasian Bittern
No	No	Caladenia hastata	Melblom's Spider-orchid
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Callocephalon fimbriatum	Gang-gang Cockatoo
No	No	Carcharodon carcharias	White Shark, Great White Shark
No	No	Caretta caretta	Loggerhead Turtle
No	No	Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
No	No	Chelonia mydas	Green Turtle
No	No	Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)
No	No	Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
No	No	Diomedea antipodensis	Antipodean Albatross
No	No	Diomedea epomophora	Southern Royal Albatross
No	No	Diomedea exulans	Wandering Albatross
No	No	Diomedea sanfordi	Northern Royal Albatross
No	No	Euastacus bispinosus	Glenelg Spiny Freshwater Crayfish, Pricklyback
No	No	Eubalaena australis	Southern Right Whale
No	No	Falco hypoleucos	Grey Falcon

Direct impact	Indirect impact	Species	Common name
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Glycine latrobeana	Clover Glycine, Purple Clover
No	No	Grantiella picta	Painted Honeyeater
No	No	Hirundapus caudacutus	White-throated Needletail
Yes	No	Isodon obesulus obesulus	Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern)
No	No	Ixodia achillaeoides subsp. arenicola	Sand Ixodia, Ixodia
No	No	Lathamus discolor	Swift Parrot
No	No	Lepidium aschersonii	Spiny Peppercress
No	No	Limosa lapponica baueri	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit
No	No	Lissolepis coventryi	Swamp Skink, Eastern Mourning Skink
No	No	Litoria raniformis	Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog
No	No	Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel
No	No	Macronectes halli	Northern Giant Petrel
No	No	Miniopterus orianae bassanii	Southern Bent-wing Bat
No	No	Nannoperca obscura	Yarra Pygmy Perch
No	No	Neophema chrysogaster	Orange-bellied Parrot
Yes	No	Neophema chrysostoma	Blue-winged Parrot
No	No	Neophoca cinerea	Australian Sea-lion, Australian Sea Lion
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
No	No	Pachyptila turtur subantarctica	Fairy Prion (southern)
No	No	Petaurus australis australis	Yellow-bellied Glider (south-eastern)
No	No	Potorous tridactylus trisulcatus	Long-nosed Potoroo (southern mainland)
No	No	Prasophyllum litorale	Coastal Leek Orchid
No	No	Prasophyllum spicatum	Dense Leek-orchid

Direct impact	Indirect impact	Species	Common name
No	No	Prasophyllum suaveolens	Fragrant Leek-orchid
No	No	Prototroctes maraena	Australian Grayling
No	No	Pseudomys shortridgei	Heath Mouse, Dayang, Heath Rat
No	No	Pteropus poliocephalus	Grey-headed Flying-fox
No	No	Pterostylis chlorogramma	Green-striped Greenhood
No	No	Pterostylis cucullata	Leafy Greenhood
No	No	Rostratula australis	Australian Painted Snipe
No	No	Senecio psilocarpus	Swamp Fireweed, Smooth-fruited Groundsel
No	No	Seriolella brama	Blue Warehou
No	No	Stagonopleura guttata	Diamond Firetail
No	No	Sternula nereis nereis	Australian Fairy Tern
No	No	Thalassarche bulleri	Buller's Albatross, Pacific Albatross
No	No	Thalassarche bulleri platei	Northern Buller's Albatross, Pacific Albatross
No	No	Thalassarche carteri	Indian Yellow-nosed Albatross
No	No	Thalassarche cauta	Shy Albatross
No	No	Thalassarche chrysostoma	Grey-headed Albatross
No	No	Thalassarche impavida	Campbell Albatross, Campbell Black-browed Albatross
No	No	Thalassarche melanophris	Black-browed Albatross
No	No	Thalassarche salvini	Salvin's Albatross
No	No	Thalassarche steadi	White-capped Albatross
No	No	Thelymitra orientalis	Hoary Sun-orchid
No	No	Thinornis cucullatus cucullatus	Eastern Hooded Plover, Eastern Hooded Plover
No	No	Tringa nebularia	Common Greenshank, Greenshank
No	No	Xerochrysum palustre	Swamp Everlasting, Swamp Paper Daisy

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Grassy Eucalypt Woodland of the Victorian Volcanic Plain
No	No	Natural Temperate Grassland of the Victorian Volcanic Plain

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Whilst the proposal has been designed to avoid the most sensitive areas and minimise any potential impacts on protected matters, the proposed action will likely result in some impacts on threatened species. Note, potential impacts are not likely to occur to any listed ecological communities or listed flora species.

The project team (including Nature Advisory) do not consider that any significant indirect impacts will occur to the three MNES. The project area occurs within the industrial zone in close proximity to the Portland Aluminium Smelter which is recognised to contribute significant noise and artificial light. Any species that occur, do so within a highly modified landscape and are mobile species that can disperse if desired.

As stated within, the Project does recognise the potential for direct impacts on three listed fauna species as described below:

Blue-winged parrot:

- A total of 10.827 ha of foraging habitat for Blue-winged Parrot – occurring within Lot 1 TP592015 Madeira Packet Road, which includes Habitat Zones U and V as well as extensive areas of exotic pasture grasses.
- The direct impact on the species will be the potential loss of foraging habitat from the construction of the 500kV terminal station. Activities that may directly impact the species include activities such as earthworks, drainage, and other construction requirements which will be required for the construction of the terminal station.
- Importantly, the proposed action and associated disturbance activities are limited to the foraging habitat and do not impact the roosting and nesting habitats, which are locally abundant throughout the region. Blue-winged parrot is a highly mobile species that can be dispersed to other plentiful foraging habitats throughout the region if required.

For further information on the potential impacts on the Blue-winged parrot (Att A – MNES Report, Section 7.1.1, pp 20-23).

Southern Brown Bandicoot and **Swamp Antechinus** are presumed to be present, although no targeted assessments were undertaken for these species. Despite this, the project has assumed the following direct impacts:

- A total of 0.072 ha of potential (assumed) habitat for Southern Brown Bandicoot and Swamp Antechinus, which includes a part of Habitat Zone RC.
- Both species may be affected due to road access provision along Madeira Packet Road and the construction of transmission lines, which will require vegetation to be cleared to be constructed.
- The direct impact on the Southern Brown Bandicoot and Swamp Antechinus will be the loss of a small area of foraging and dispersal habitat will be removed.

- This is unlikely to result in a long-term decrease in the size of an important population of these species.

For further information on the potential impacts on the Southern Brown bandicoot (Att A – MNES Report, Section 7.1.2, pp. 23-26) and Swamp Antechinus (Att A – MNES Report, Section 7.1.3, pp 23-29).

Based on targeted surveys and impact assessments, the impacts on these species are predominantly the loss of foraging or dispersal habitat. It is thus considered that impacts to these species will be minimal as the proposed action and associated disturbance activities are limited to the foraging habitat and do not impact the roosting and nesting habitats, which is unlikely to result in significant long-term impacts to these species.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact?

*

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

The impacts of the proposed project on Blue-winged Parrot have been considered against each of the significant impact criteria from the Significant Impact Guidelines for Vulnerable Species (refer Att A – MNES Report, Table 6, pp 23).

The potential effects of the proposed action on the Blue-winged Parrot, Swamp Antechinus and Southern Brown Bandicoot have been evaluated according to the Significant Impact Guidelines for Vulnerable Species (Att E - MNES-Significant Impact Guidelines 1.1 - EPBC Act). After conducting a site-based assessment and considering the ecology of these species, it is believed that the proposed action is unlikely to have a significant impact. The land selected for the proposed action has previously been cleared and has historically been subjected to intense grazing. This means that existing habitats for both species have already been highly modified and are not of high quality or considered to be critical habitats.

During the field assessments conducted by Nature Advisory, no Swamp Antechinus or Southern Brown Bandicoots were observed and no further targeted surveys were carried out. Based on the initial observations, it is assumed that this species exists in suitable habitat within the study area. Based on the relevant conservation advice and significant impact criteria, it is unlikely that the proposed action will significantly impact the Southern Brown Bandicoot. This is due to the removal of only a small area of foraging and dispersal habitat, which is not expected to lead to a long-term reduction in the size of an important population of the species or decrease the area of occupancy of an important population by negatively affecting critical habitat for the species.

Blue-winged Parrots were observed during the field assessments within the project area during winter and summer surveys conducted by Nature Advisory ecologists, indicating that this area is regularly used by the local population of the species. A population of at least 20 Blue-winged Parrots, including juveniles, was observed on two occasions within the study area. Importantly, the proposed action avoids impacts on the roosting and nesting habitat of the species, with disturbance being limited to foraging habitat, a resource that is locally abundant throughout the region. Further construction and environmental management will ensure that any additional impacts are minimised as much as possible.

As such, based on a site-based assessment and the known ecology of the species, it is considered that the impact of the proposed action is unlikely to have a significant impact on the Blue-winged Parrot.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action.

*

Given the impacts of the proposed action are considered to be minimal, and avoids critical habitat for the threatened species, the action is considered not to warrant being controlled.

As described in the attached MNES Report (Att A- MNES Report, pp 15), the blue-winged parrot foraging habitat being impacted is primarily pasture grass of low quality. It does not include any nesting or roosting habitat. The impact area is minimal within a broader landscape of suitable habitat.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The project area was partially selected for the proposed action given the land has previously been cleared and has historically been subject to intense grazing pressure. Through early design iterations based upon initial flora and fauna survey work, the southern area of the project area mapped as Blue-winged Parrot foraging habitat has been largely avoided, with impacts minimised as much as practicable. Habitat for Swamp Antechinus and Southern Brown Bandicoot is limited to the dense vegetation around the perimeters of the land, inside the adjacent road reserves, and will be avoided except for a small section at Madeira Packet Road.

Measures to mitigate impacts including revegetating additional habitat on site. The proposed action will include the preparation of a stormwater management plan providing an opportunity to undertake revegetation of the project area using a diverse mix of locally appropriate native species to enhance feeding habitat for the Blue-winged Parrot. If new habitat patches are established within the study area, as per the relevant conservation and recovery actions (DCCEEW 2023a), this will result in an overall improvement in the quality and extent of habitat for the species.

Revegetation works using indigenous species have already been undertaken along a 10 metre-wide buffer along the site's south-western boundary, to establish foraging habitat for Blue-winged Parrot with the added benefit of extending the current habitat around the site's perimeter for Rufous Bristlebird and Southern Brown bandicoot. The revegetation works aimed to establish a tall, dense shrub community similar to Damp Heathland (EVC 710) that is interspersed with clusters of rushes and sedges; these clusters were specifically incorporated to provide foraging locations for Blue-winged Parrot.

Measures to avoid and mitigate impacts to the Blue-winged Parrot and Southern Brown Bandicoot as a result of construction activities will be in accordance with best practice (e.g. pre-clearance surveys) and will be outlined in the Construction Environmental Management Plan (CEMP).

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are considered necessary. Nonetheless, revegetation works to provide additional habitat has already been undertaken and further revegetation works will be completed in accordance with a stormwater management plan, as mentioned in Section 4.1.4.10 above.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Ardenna carneipes	Flesh-footed Shearwater, Fleshy-footed Shearwater
No	No	Ardenna grisea	Sooty Shearwater
No	No	Balaenoptera borealis	Sei Whale
No	No	Balaenoptera musculus	Blue Whale
No	No	Balaenoptera physalus	Fin Whale
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper

Direct impact	Indirect impact	Species	Common name
No	No	Caperea marginata	Pygmy Right Whale
No	No	Carcharodon carcharias	White Shark, Great White Shark
No	No	Caretta caretta	Loggerhead Turtle
No	No	Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
No	No	Chelonia mydas	Green Turtle
No	No	Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
No	No	Diomedea antipodensis	Antipodean Albatross
No	No	Diomedea epomophora	Southern Royal Albatross
No	No	Diomedea exulans	Wandering Albatross
No	No	Diomedea sanfordi	Northern Royal Albatross
No	No	Eubalaena australis	Southern Right Whale
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Hirundapus caudacutus	White-throated Needletail
No	No	Lagenorhynchus obscurus	Dusky Dolphin
No	No	Lamna nasus	Porbeagle, Mackerel Shark
No	No	Limosa lapponica	Bar-tailed Godwit
No	No	Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel
No	No	Macronectes halli	Northern Giant Petrel
No	No	Megaptera novaeangliae	Humpback Whale
No	No	Motacilla flava	Yellow Wagtail
No	No	Myiagra cyanoleuca	Satin Flycatcher
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
No	No	Orcinus orca	Killer Whale, Orca
No	No	Sternula albifrons	Little Tern
No	No	Thalassarche bulleri	Buller's Albatross, Pacific Albatross
No	No	Thalassarche carteri	Indian Yellow-nosed Albatross

Direct impact	Indirect impact	Species	Common name
No	No	Thalassarche cauta	Shy Albatross
No	No	Thalassarche chrysostoma	Grey-headed Albatross
No	No	Thalassarche impavida	Campbell Albatross, Campbell Black-browed Albatross
No	No	Thalassarche melanophris	Black-browed Albatross
No	No	Thalassarche salvini	Salvin's Albatross
No	No	Thalassarche steadi	White-capped Albatross
No	No	Tringa nebularia	Common Greenshank, Greenshank

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

Nature Advisory assessed the likelihood of occurrence of listed Fauna Migratory Species. A total of five migratory species were known to occur within the project area. This includes:

- Fork-tailed Swift (Migratory)
- Latham's Snipe (Vulnerable & Migratory)
- Rufous Fantail (Migratory)
- Satin Flycatcher (Migratory)
- White-throated Needletail (Vulnerable & Migratory)

The MNES assessment has determined that the proposed action is unlikely to have direct or indirect impacts on these species and as such no significant impact on migratory species is predicted. This is generally based upon their aerial habits, occasional occurrence, and suboptimal site conditions to support the above-listed species (limited extent and quality of habitat). For more details on the assessment of potential impacts to migratory species refer to Att A - MNES Report Section 5.3 pp 14-16.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not a nuclear action.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not within a Commonwealth Marine Area.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not located within or near the Great Barrier Reef.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not a coal mine development or coal seam gas.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not near or proximate to Commonwealth land.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed action is not near or proximate to Commonwealth Heritage Places Overseas.

4.1.12 Commonwealth or Commonwealth Agency**4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? ***

No

4.2 Impact summary**Conclusion on the likelihood of significant impacts**

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)

- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

At a macro level, the strategic rationale for selecting this project area is based on the fact that it is the only land in the entire region with an industrial zone and an existing high-voltage transmission line intersecting it. Access to existing high-voltage transmission lines is critical to a BESS project, and the industrial zoned is highly suited (and preferred compared to farming land) to a BESS. Furthermore, AEMO supports the construction of the proposed switchyard at this location, as it can in future serve other needs in the area.

At a micro-siting level, the switching station is required to be located on the 'East Site' due to size requirements and land tenure requirements from the grid authority (fully owned freehold land, as opposed to leasehold). The nature of the electrical substation infrastructure means there is very little flexibility in layout of electrical 'bays'. Both the East and West Sites have their own constraints on layout flexibility, including cultural heritage sensitivity (dune rises have been committed to avoid), low-lying swampland, and a trunk sewer line dissecting the West Site.

The siting of the proposed infrastructure has been placed as far north as practical, to minimise impacts upon the mapped foraging habitat of the Blue-winged Parrot.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

Type	Name	Date	Sensitivity	Confidence
#1.	Document A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High

#2.	Document	Att B - Concept Layout.pdf	22/07/2024	No	High
This document provides three maps including a Context Plan, Project Boundaries and Areas Plan and a Functional Layout Plan					

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	01/07/2024	No	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att D - Consultation Summary Report.pdf This report details all the community engagement activities completed to date for the Portland Energy Park.	29/08/2024	No	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att F -Pacific Green Climate Change Statement.pdf This document details Pacific Green's commitment to addressing Climate Change.	01/09/2024	No	High
#2.	Document	Att G - Pacific Green Sustainability Policy and Approach..pdf This document outlines Pacific Green's commitment to sustainable practices	01/09/2024	No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att B - Concept Layout.pdf	23/07/2024	No	High
This document provides three maps including a Context Plan, Project Boundaries and Areas Plan and a Functional Layout Plan					

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High
#2.	Document	Att B - Concept Layout.pdf This document provides three maps including a Context	22/07/2024	No	High

Plan, Project Boundaries and Areas Plan and a Functional Layout Plan

3.1.3 Natural features, important or unique values that applies to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att B - Concept Layout.pdf This document provides three maps including a Context Plan, Project Boundaries and Areas Plan and a Functional Layout Plan	22/07/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High
#2.	Link	Species Profile and Threats Database https://www.environment.gov.au/cgi-bin/sprat/pub..			High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C - CHMP Desktop DRAFT July 2024 (DRAFT_REDACTED).pdf The Draft Cultural Heritage Management Plan which provides detail of Aboriginal cultural heritage sensitivities of the site.	31/07/2024	Yes	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High
#2.	Document Att E - MNES-Significant Impact Guidelines 1.1 - EPBC Act.pdf Department of Environment Matters of National Environmental Significance -Significant Impact Guidelines 1.1 - EPBC Act		No	High

4.1.4.9 (Threatened Species and Ecological Communities) Why you do not think your proposed action is a controlled action

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024	No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

Type	Name	Date	Sensitivity	Confidence
#1.	Link EPBC Act Protected Matters Search Tool https://www.dcceew.gov.au/environment/epbc/prote..			High

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att A - MNES Report.pdf Matters of National Environmental Significance (MNES) Self-Assessment Report	30/06/2024		High

5.2 Declarations

 Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	90656657984
Organisation name	COGENCY AUSTRALIA PTY LTD
Organisation address	Level 6 West, 84 William Street, Melbourne 3000
Representative's name	Billy Greenham

Representative's job title	Associate Director
Phone	0452593428
Email	hello@cogencyaustralia.com.au
Address	Level 6 West, 84 William Street, Melbourne 3000 VIC

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ By checking this box, I, **Billy Greenham of COGENCY AUSTRALIA PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	73667082911
Organisation name	PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD
Organisation address	3121 VIC
Representative's name	Joel Alexander
Representative's job title	Managing Director
Phone	0497335833
Email	joel.alexander@pacificgreen.com
Address	Level 4/459 Church St, Richmond VIC 3121

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ I, **Joel Alexander of PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☒ I, **Joel Alexander of PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD**, the Person proposing the action, consent to the designation of **James Segundo of PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD** as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

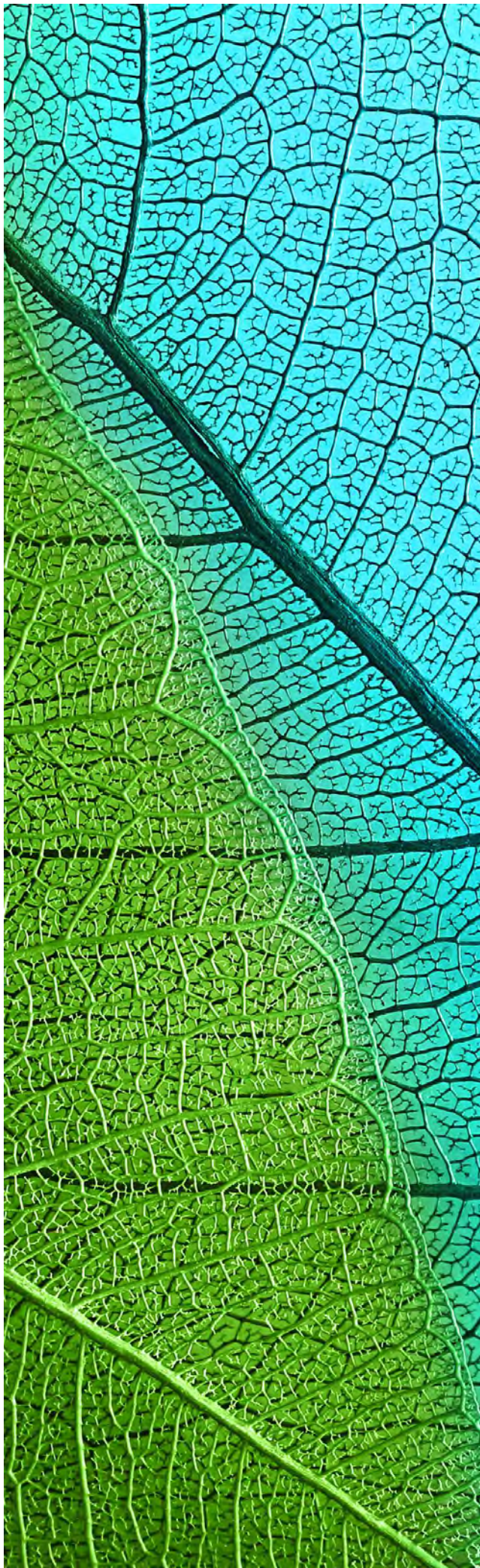
ABN/ACN	73667082911
Organisation name	PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD
Organisation address	3121 VIC
Representative's name	James Segundo
Representative's job title	Project Administrator
Phone	0432034631
Email	james.segundo@pacificgreen.com
Address	Level 4/459 Church St, Richmond VIC 3121

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ I, **James Segundo of PACIFIC GREEN ENERGY PARK PORTLAND PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *



Portland Energy Park

Matters of National Environmental Significance (MNES) Self-Assessment

**Prepared for Pacific Green Portland
Energy Park Pty Ltd**

July 2024
Report No. 23146.03 (2.2)



**Nature
Advisory**

(Formerly Brett Lane & Associates Pty Ltd)

5/61-63 Camberwell Road
Hawthorn East, VIC 3123
PO Box 337, Camberwell VIC 3124

(03) 9815 2111
www.natureadvisory.com.au

Nature Advisory acknowledges the traditional owners and sovereign custodians of the land on which we work from – the Wurundjeri people of the Woi Wurrung language group. We extend our respect to their Ancestors and all First Peoples and Elders past, present, and future.

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1. Executive Summary

Pacific Green Portland Energy Park Pty Ltd (Pacific Green) engaged Nature Advisory to prepare an assessment of the impacts of a proposed utility-scale Battery Energy Storage System (BESS) (the proposed action) at Portland in Victoria on Matters of National Environmental Significance (MNES), being matters listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the 'EPBC Act').

The proposed action will occur at the following addresses:

- Allotment 61A Section 13 Parish of Portland;
- Lot 1 TP592015 Madeira Packet Road;
- 305 Madeira Packet Road;
- 333 Madeira Packet Road; and
- Madeira Packet Road Reserve.

The EPBC Act protects listed threatened species, listed threatened ecological communities and migratory species that are defined as Matters of National Environmental Significance (MNES). Any impacts on these matters considered significant requires the approval of the Australian Minister for the Environment. If there is a possibility of a significant impact on MNES, a Referral under the EPBC Act should be considered. The Minister will decide after 20 business days whether the project will be a 'Controlled Action' under the Act, in which case it cannot be undertaken without the approval of the Minister. Nature Advisory has undertaken an assessment and recommends the proposed action be referred under the EPBC Act.

The proposed action directly consists of development of the BESS and associated infrastructure, being the majority of the project area, for which a planning permit is currently being sought. The referral to be submitted under the EPBC Act includes works proposed as part of the above proposed action.

At the request of AEMO and VicGrid, the government authorities responsible for management and planning of the energy grid, land within the project area is being set aside in case of the need for future expansion of the substation being developed as part of the proposed action, namely within the properties at Lot 1 TP592015 Madeira Packet Road, 305 Madeira Packet Road and 333 Madeira Packet Road. The potential future expansion will be the responsibility of other parties and would be developed as part of other energy projects.

The exact time frame and detailed design of future development is yet to be confirmed and is not proposed to be undertaken by Pacific Green. The potential expansions have been designed at the request of the transmission network operator (AEMO), yet are pre-emptive only and may or may not be developed. It has been included in this report to adequately consider potential cumulative impacts to MNES.

1.1. Relevant Matters of National Environmental Significance (MNES)

A review of the MNES was undertaken to determine whether there was the potential for impacts arising from the Project. A high-level summary of the review is presented in Table 1.

Table 1: Matters of National Environmental Significance

Controlling Provision	Reviewed	Potentially impacted
World Heritage	Yes	No, there are no World Heritage listed sites within or near the Project Area.
National Heritage	Yes	No, there are no National Heritage listed sites within or near the Project Area.
Ramsar Wetland	Yes	No, the nearest Ramsar wetlands are approximately 17 km away from the Project Area, and the Project Area is not directly upstream of the Ramsar wetlands.
Threatened Species and Ecological Communities	Yes	Yes, see Sections 5, 6 and 7.
Migratory Species	Yes	Yes, see Section 5.3.
Nuclear	Yes	No, the proposed action is not a nuclear action.
Commonwealth Marine Area	Yes	No, the proposed action is not within a Commonwealth Marine Area.
Great Barrier Reef	Yes	No, the proposed action is not within or near to the Great Barrier Reef.
Water resource in relation to large coal mining development or coal seam gas	Yes	No, the proposed action is not a coal mine development or coal seam gas.
Commonwealth Land	Yes	No, the Project Area does not contain any Commonwealth land.
Commonwealth heritage places overseas	Yes	No, the proposed action is not located within a Commonwealth heritage place overseas.
Commonwealth or Commonwealth Agency	Yes	No, the proposed action is not being taken by the Commonwealth or a Commonwealth Agency.

As a result of Nature Advisory's review, the Matters of National Environmental Significance (MNES) deemed relevant to the Project Site are summarised below in Table 2.

Table 2: Relevant MNES

MNES	VBA/Protected Matter Search Tool Results	Number considered to potentially occur or known to occur
Ecological Communities	6	0
Threatened Flora	16	3
Threatened Fauna	39	6
Migratory Species	29	5

1.2. Significant impact assessment outcomes

Table 3 summarises the significant impact assessment outcomes.

Based on the outcomes of the significant impact tests, it is considered that the proposed Project is unlikely to but has the potential to result in a significant impact on Matters of National Environmental Significance.

Table 3: Conclusions about significant impacts on MNES

MNES	Significant Impact Conclusion
Ecological Communities	No listed ecological communities were considered to have the potential to occur on the site. Therefore, no listed ecological communities are expected to be impacted by the proposed action.
Listed threatened flora species	The following listed flora species were considered to have the potential to occur on the site: ▪ River Swamp Wallaby Grass (Vulnerable) ▪ Swamp Fireweed (Vulnerable) ▪ Swamp Everlasting (Vulnerable) Subsequently, targeted surveys were undertaken for these species in October and November 2023 (Appendix 3). Allotment 61A Section 13 Parish of Portland, Lot 1 TP592015 Madiera Packet Road and the adjacent roadsides were surveyed for the abovementioned species, in accordance with the relevant guidelines. No individuals were recorded. Therefore, these species are now considered unlikely to occur. No suitable habitat for the abovementioned species occurred within other portions of the study area, subsequently no targeted surveys were undertaken. Therefore, no listed threatened flora species are expected to be impacted by the proposed action.
Listed threatened fauna and migratory species	The following nine listed fauna species were considered to have the potential to occur on the site: ▪ Blue-winged Parrot (Vulnerable) ▪ Fork-tailed Swift (Migratory) ▪ Latham's Snipe (Vulnerable & Migratory) ▪ Rufous Fantail (Migratory) ▪ Satin Flycatcher (Migratory) ▪ White-throated Needletail (Vulnerable & Migratory) ▪ Southern Brown Bandicoot (Endangered) ▪ Swamp Antechinus (Vulnerable) ▪ Southern Bent-wing Bat (Critically Endangered) However, development of the study area was deemed only to have the potential to impact on the following three species: ▪ Blue-winged Parrot (Vulnerable) ▪ Southern Brown Bandicoot (Endangered)

MNES	Significant Impact Conclusion
	▪ Swamp Antechinus (Vulnerable) Blue-winged Parrot were observed foraging within the study area during summer and winter, confirming their presence and utilisation of the site for feeding. The proposed action will require the removal of 10.827 ha of foraging habitat for the species. Given the extensive areas of similar habitat throughout the broader landscape, it is unlikely that the species is reliant on habitat within the study area. Additionally, no roosting or nesting habitat is proposed to be impacted by the project. However, it is identified that habitat critical to the survival or important habitat for Blue-winged Parrot includes (but is not limited to) areas that are necessary for foraging and staging habitats found from coastal, sub-coastal and inland areas, and wetlands near the coast (DCCEEW 2023c). Any removal of such habitat is considered a threatening process for this species, as such there is the potential for a significant impact to the species. Targeted surveys have not been undertaken for Southern Brown Bandicoot or Swamp Antechinus. Therefore, presence for Southern Brown Bandicoot and Swamp Antechinus have been assumed in all areas of suitable habitat. The proposed action will require the removal of 0.072 ha of potential habitat for these species. Given that the project is only proposing to remove a relatively small area of habitat in comparison to the extensive areas of suitable habitat in the surrounding landscape, impacts are unlikely to be significant to these species.

This assessment, in conjunction with targeted survey results found that the proposed action has the potential to have an impact on the following MNES:

- Fauna species
 - Blue-winged Parrot (Vulnerable)
 - Southern Brown Bandicoot (Endangered)
 - Swamp Antechinus (Vulnerable)

Nature Advisory has completed a self-assessment of significant impacts for each of these three species and concluded that the proposed development is unlikely to constitute a significant impact on any of the species. Additionally, the Project is not expected to impact any other MNES.

2. Introduction

Pacific Green engaged Nature Advisory Pty Ltd to prepare an impact assessment of the proposed Portland Battery Energy Storage System (BESS) (the proposed action) at Portland in Victoria on Matters of National Environmental Significance (MNES), being matters listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the 'EPBC Act').

The proposed action will occur at the following addresses:

- Allotment 61A Section 13 Parish of Portland;
- Lot 1 TP592015 Madera Packet Road;
- 305 Madeira Packet Road; and
- 333 Madeira Packet Road.

The EPBC Act protects listed threatened species, listed threatened ecological communities and migratory species that are defined as Matters of National Environmental Significance (MNES). Any impacts on these matters considered significant requires the approval of the Australian Minister for the Environment. If there is a possibility of a significant impact on MNES, a Referral under the EPBC Act should be considered. The Minister will decide after 20 business days whether the project will be a 'Controlled Action' under the Act, in which case it cannot be undertaken without the approval of the Minister.

Section 3 describes the existing information, including a description and the location of the proposed action, and the field surveys undertaken to date.

Section 4 presents the assessment results, including likelihood of occurrence of MNES.

Section 5 includes a significant impact assessment for those MNES considered likely to occur.

This investigation was undertaken by a team from Nature Advisory comprising Cody Hajnal (Botanist), Caroline Tan (Senior Botanist & Project Manager), Adam Dzunko (Ecologist) and Chris Armstrong (Senior Botanist & Project Manager).

The location of the proposed action is shown in Figure 1.

The proposed development plan is shown in Figure 2.

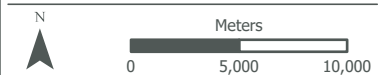
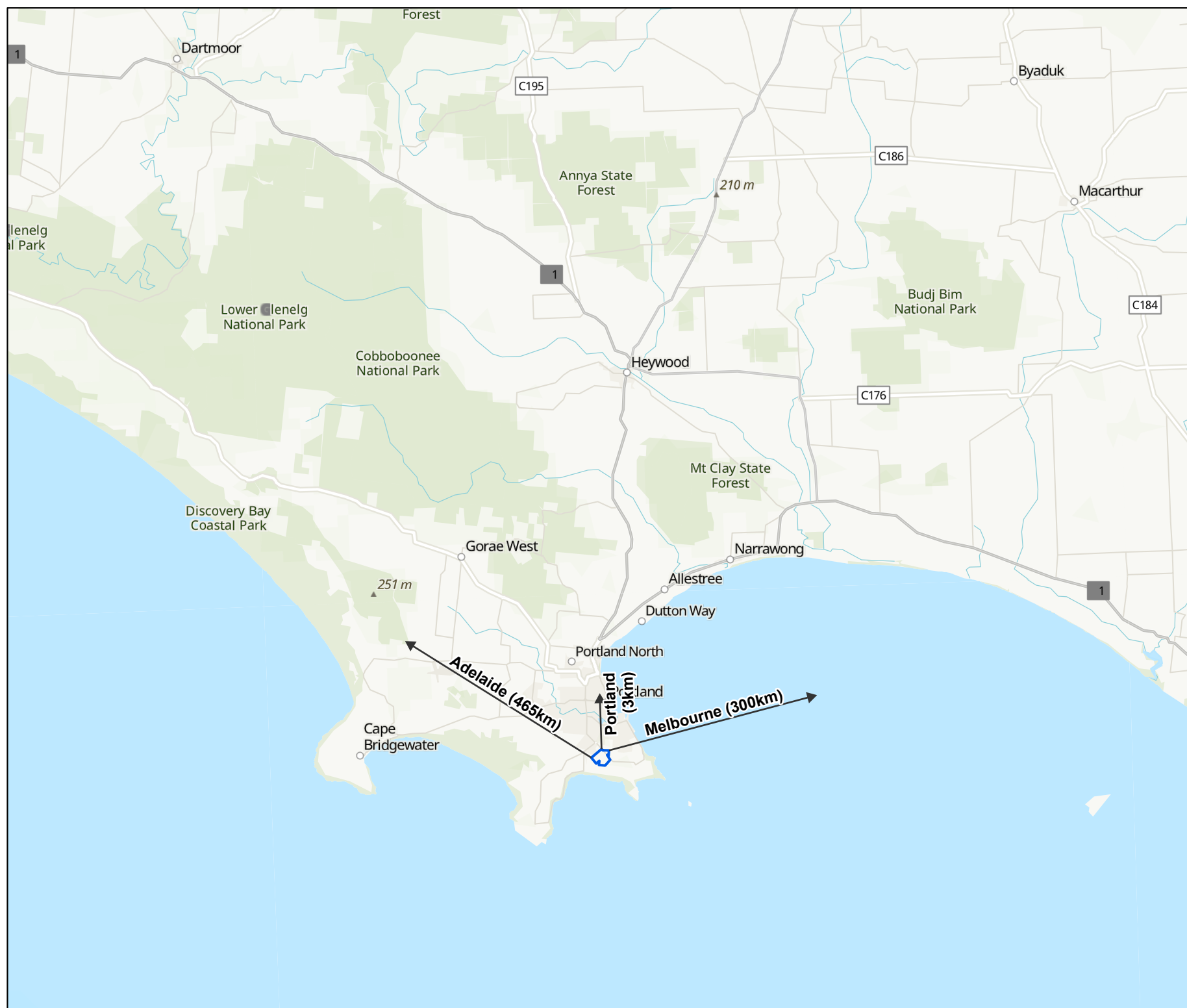
Figure 1: Location of site

Project No: 23146.03

Project: Pacific Green, Portland

Date: 18/03/2024

 Study area



PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
03 9815 2111 - info@natureadvisory.com.au

Figure 2: Development plan

Project No: 23146.03
Project: Pacific Green, Portland
Date: 24/05/2024

-  Study area
-  Property boundary
-  Proposed development



PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
03 9815 2111 - info@natureadvisory.com.au

3. Existing information and methods

3.1. About the project

3.1.1. Project title

Portland Energy Park

3.1.2. Location of proposed action

The project site is located at Portland in western Victoria and occurs within the following properties:

- Allotment 61A Section 13 Parish of Portland;
- Lot 1 TP592015 Madera Packet Road;
- 305 Madeira Packet Road; and
- 333 Madeira Packet Road

The study area also included the adjacent roadsides of Madera Packet Road, Tecoma Road and Oleria Road.

3.1.3. Proposed action details

The project will involve the construction of a utility-scale Battery Energy Storage System (BESS) and associated infrastructure. The associated infrastructure includes electricity switchyard, transmission line connection to the existing high-voltage network, access tracks, security fencing, landscaping and earthworks.

The proposed project for BESS is to be constructed and operated by Pacific Green. It is understood that the Australian Energy Market Operator (AEMO) identified the need for upgrades to the current electricity transmission system to cater for future electricity demand (demand from external parties not related to Pacific Green). This includes additional switching bays, a substation and additional transmission lines. AEMO has identified the land owned by Pacific Green for the BESS as a suitable site. AEMO or a third party would construct and operate these facilities and be responsible for obtaining any required approvals. As such, Pacific Green's planning permit application for the Portland BESS does not include these upgrades. It is understood that the BESS is not reliant on these upgrades.



Inset 1. Proposed action layout (left) in comparison to the potential future expansion for AEMO (right, in pink).

3.2. Sources of information

3.2.1. Flora and Fauna assessment

Nature Advisory undertook flora and fauna assessments of the Project Site on 17 and 18 July 2023 (Allotment 61A Section 13 Parish of Portland and Lot 1 TP592015 Madera Packet Road), 9 and 10 January 2024 (305 Madeira Packet Road) and 7 March 2024 (333 Madeira Packet Road). The adjacent roadsides of each property were assessed at the same time as the corresponding property. During the assessments, the Project Site was surveyed on foot.

Areas in the project site found to support native vegetation or with potential to support listed matters were mapped through a combination of aerial photograph interpretation and ground-truthing using ArcGIS Field Maps® (Esri) on a hand-held device (accurate to approximately 5 metres).

The findings of Nature Advisory's flora and fauna assessments are documented in:

- Portland Battery Energy Storage System (BESS) - Flora and Fauna Assessment, Report No. 23146.03 (1.0) (Nature Advisory 2024).

3.2.2. Targeted survey

Nature Advisory undertook targeted flora surveys within Allotment 61A Section 13 Parish of Portland, Lot 1 TP592015 Madera Packet Road and the adjacent roadsides on 31st October 2023 and 1st November 2023 for the following species:

- River Swamp Wallaby Grass (Vulnerable)
- Swamp Fireweed (Vulnerable)
- Swamp Everlasting (Vulnerable)

All targeted surveys were undertaken in accordance with the survey guidelines for similarly cryptic species (DoE 2013a) as there are no survey guidelines for the abovementioned species. Additionally, no suitable habitat for threatened species was identified in the remaining areas of the study area, owing to the modified nature of the vegetation, lack of suitable habitat and the dominance of weedy species.

The detailed methodology and findings of the targeted survey assessments are documented in:

- Portland Battery Energy Storage System (BESS) - Targeted Flora Survey, Report No. 23146.02 (1.0) (Nature Advisory 2023). Provided in Appendix 3.

No EPBC listed values were identified during this assessment.

3.2.3. Further Assessment of Blue-winged Parrot

A desktop assessment of the 'search region', defined here as an area with 20-kilometre radius from the boundary of the study area, was undertaken by Nature Advisory to investigate the extent of suitable habitat for Blue-winged Parrot in the broader landscape in order to gain clearer understanding of the likelihood of impacts associated with the proposal.

In addition, ground truthing and a roaming survey of the region were undertaken on 10th and 11th January 2024 for Blue-winged Parrot habitat in the region. This included forest and woodland that could contain hollow-bearing trees and wetlands where Blue-winged Parrots are known to forage and roost as well as other agricultural lands, such as what is observed within the site.

The detailed methodology and findings of the desktop assessment and the ground truthing and roaming survey are documented in:

- Portland Battery Energy Storage System (BESS) - Detailed Assessment for Blue-winged Parrot, Report No. 23146 (7.1) (Nature Advisory 2024). Provided in Appendix 4.

3.3. Methods of the current assessment

In addition to the Flora and Fauna Assessment (Nature Advisory 2024), Targeted Flora Survey (Appendix 3) and Detailed Significant Impact Assessment for Blue-winged Parrot (Appendix 4), relevant information has been obtained from the following:

- Conservation advice for *Neophema chrysostoma* (Blue-winged Parrot) under the EPBC Act (DCCEEW 2023b);
- eBird (eBird 2021);
- NatureKit (DEECA 2023a);
 - The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Protected Matters Search Tool (DCCEEW 2023a); and
 - Victorian Biodiversity Atlas administered by the Department of Energy, Environment and Climate Action (DEECA 2023b).

Existing flora and fauna species records and information about the potential occurrence of listed matters was obtained from an area termed the 'search region', defined here as an area with a radius of ten kilometres from the boundary of the Project Site.

A list of the flora and fauna species recorded in the search region was obtained from the *Victorian Biodiversity Atlas* (VBA), a database administered by DEECA (2023a).

The online EPBC Act *Protected Matters Search Tool* (DCCEEW 2023a) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

4. Assessment results

4.1. Site description

The project site comprised a flat to gently undulating landscape at 30-40 metres above sea level, supporting open grazing land of introduced grasses with numerous wetlands. The history of cattle grazing throughout the paddocks has resulted in the ground being heavily pugged. In summary, the vegetation throughout the study area is highly modified from its original condition due to the historical land clearing and evidently intense grazing pressure on the land. The condition of the vegetation is poor due to the absence of canopy trees, loss of native species diversity and a very high cover of noxious weeds including grassy, herbaceous and woody weeds.

The study area contained relatively uniform introduced pasture, the most common species including Kikuyu, White Clover, Capeweed and Flatweed. Occasional woody weeds included African Boxthorn, Blackberry and Gorse.

Nearby significant habitat occurred as a large patch of heathy woodland/coastal scrub adjacent to the south-eastern boundary of the study area. Native vegetation in the study area was connected to this habitat by dense coastal scrub along roadsides. This habitat is contiguous with similar habitat of Nelson Bay Coastal Reserve, Discovery Bay Coastal Park, and Narrawong Coastal Reserve.

Roadside vegetation in the study area provides an important link between the abovementioned significant habitat and smaller habitat areas to the north-west, which have been conserved within a largely modified landscape.

The project site lies within the Glenelg Plain bioregion, within the Glenelg Hopkins catchment management area and within the Glenelg Shire local government area.

4.1.1. Native vegetation

Native vegetation within the project area consisted predominantly of Aquatic Herbland and Heathy Woodland that had been significantly modified. Additionally, the project area contained scattered Austral Bracken and native Rush at varying covers. Native tree cover in the study area was limited, with two isolated Swamp Gum in very poor health and planted trees occurring in Allotment 61A Section 13 Parish of Portland and a number of eucalypts in 333 Madeira Packet Road.

At the time of the field assessment of Allotment 61A Section 13 Parish of Portland and Lot 1 TP592015 Madeira Packet Road, all the wetlands had relatively large open water zones and shallow submergent zones. They lacked fringing emergent vegetation such as rushes and sedges, native grasses and riparian woody vegetation. Introduced pasture grass often remained dominant except in the deepest areas, with herbaceous weeds in all of the wetlands including White Clover, Buck Horn's Plantain, Water-buttons and Hairy Hawkbit. Native aquatic species in the deeper drainage lines and shallow wetlands included River Buttercup, Swamp Crassula, *Hydrocotyle* spp. and Southern Water-ribbons. The native wetland plants were likely the result of natural colonisation rather than from a remnant wetland community in the study area.

The roadside native vegetation included a shrub layer of Coast Wattle with some Coastal Beard-heath over a densely weedy understorey, mainly Kikuyu and Cocksfoot, with scattered Austral Bracken. Native graminoids included Coast Sword-sedge, Thatch Saw-sedge and Spear-grass.

4.1.2. Fauna habitat

The project site supported the following four fauna habitat types:

- Wooded habitat;
- Grassland habitat; and
- Aquatic habitat.

Wooded habitat

This habitat type was represented by a row of planted non-indigenous trees and dense coastal scrub along roadsides adjacent to and within the study area. No hollow-bearing trees were observed during the field assessment, however, trees planted as windbreaks provide breeding and foraging habitat for common native bird species, mammals and potentially roosting habitat for bats. Brown Falcon and Brown Goshawk were likely utilizing the windbreak on 305 Madeira Packet Road, both species were observed feeding fledglings perched in the pines. Yellow-tailed Black Cockatoos were observed foraging on the pinecones on each day of the summer survey and two Koala were observed resting in the planted windbreak of eucalypts adjacent to the eastern boundary of 305 Madeira Packet Road. Coastal scrub vegetation occurred along the boundary of the study area, around a small dam on 305 Madeira Packet Road and within the property of 333 Madeira Packet Road and varied in quality and floristic composition. Dominant native species included Coastal Wattle, Coastal Beard-heath, and Coastal Tea-tree. Native graminoids including Coast Sword-sedge, Thatch Saw-sedge and Spear-grass occurred sparsely. Weed cover was generally high with Sweet Pittosporum, Mirror Bush, Kikuyu and Blackberry being common. Weediness aside, this habitat provided an important foraging and nesting resource for threatened species including Rufous Bristlebird and potentially Southern Brown Bandicoot and Swamp Antechinus. Additionally, this habitat provided a movement corridor for these species as well as other, more common native fauna.

Grassland habitat

This was the dominant habitat type within the study area and mostly comprised introduced pasture grasses. Generally, the condition of this habitat was considered to be poor due to the absence of native species diversity and high cover of noxious weeds. Sparse areas of native rush (*Juncus* sp.) occurred in the south-eastern portion of the study area providing foraging habitat for Blue-winged Parrot, which were frequently observed in small groups almost exclusively associated with this vegetation.

Aquatic habitat

Areas of wetland occurred throughout the study area, including low-lying areas of pasture and constructed drainage channels. Most of the wetlands in the study area were semi-permanent or permanent and were saturated at the time of the assessment. These areas provided breeding and foraging habitat for common frogs and waterbirds, both of which were observed to be utilising aquatic habitat present. However, the limited structural diversity both within and surrounding these wetlands limited the overall value of this habitat for fauna species. Wetland areas fringed by native rush (*Juncus* sp.) also provided foraging habitat for Blue-winged Parrot.

4.2. Habitat assessment for the Blue-winged Parrot

See Appendix 4 for Detailed Assessment for the Blue-winged Parrot. The assessment against the EPBC Act Significant Impact Guidelines found that the project is **unlikely** to have a significant impact on the Blue-winged Parrot.

5. Likelihood of occurrence

The following section addresses the likelihood of occurrence of MNES within the Project Site.

The location and extent of MNES within the project site is shown in Figure 3.

5.1. Listed ecological communities

The EPBC *Protected Matters Search Tool* (DCCEEW 2023a) indicated that five ecological communities listed under the EPBC Act had the potential to occur in the search region (Table 4).

Table 4: EPBC Act-listed ecological communities and likelihood of occurrence in the project site

Ecological Community	EPBC Status	Likelihood of occurrence in the study area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Does not occur within the study area. No suitable treed vegetation recorded in the study area.
Giant Kelp Marine Forests of South East Australia	Endangered	Does not occur within the study area. This is a marine community, whilst the project site is terrestrial.
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered	Does not occur within the study area. Outside this community's range. This groundwater dependant ecological community is limited to the Gambier Limestone formation (Gambier Karst Province) within the Bridgewater (NCP01) subregion of the Naracoorte Coastal Plain IBRA6 bioregion – this subregion is located west of the study area (DAWE 2020).
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Does not occur within the study area. No native grassland recorded in the study area.
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Does not occur within the study area. No coastal saltmarsh recorded in the study area.

Notes: EPBC = status under the EPBC Act.

In addition, the following community was also considered for its potential to occur in the study area although it was not included in the results from the EPBC *Protected Matters Search Tool* (DCCEEW 2023a).

Table 5: EPBC Act-listed ecological communities and likelihood of occurrence in the study area

Ecological Community	EPBC Status	Likelihood of occurrence in the study area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Does not occur within the study area. No suitable wetland vegetation meeting the diagnostic criteria for this community in the study area, particularly given the lack of graminoid vegetation component in all of the wetlands in the study area.

5.2. Listed flora species

The EPBC Protected Matters Search Tool (DCCEEW 2023a) and VBA (DEECA 2023) indicated that within the search region there were records of, or there occurred potential suitable habitat for, 15 flora species listed under the Commonwealth EPBC Act.

The likelihood of occurrence in the Project Site of species listed under the EPBC Act is addressed in Appendix 1. Species considered 'likely to occur' are those that have a very high chance of being in the Project Site based on numerous records in the search region and suitable habitat in the Project Site. Species considered to have the 'potential to occur' are those for which suitable habitat exists, but recent records are scarce.

This analysis indicates that three listed flora species are considered likely to occur or to potentially occur:

- River Swamp Wallaby Grass (Vulnerable)
- Swamp Fireweed (Vulnerable)
- Swamp Everlasting (Vulnerable)

Subsequently, targeted surveys were undertaken for these species in October and November 2023 (Appendix 3). Allotment 61A Section 13 Parish of Portland, Lot 1 TP592015 Mадiera Packet Road and the adjacent roadsides were surveyed for the abovementioned species, in accordance with the relevant guidelines for similarly cryptic species (DoE 2013a). No individuals were recorded. Therefore, these species are now considered unlikely to occur.

Additionally, no suitable habitat for threatened species was identified in the remaining areas of the study area, owing to the modified nature of the vegetation, lack of suitable habitat and the dominance of weedy species.

No other listed flora species are considered to have the potential to occur on site.

5.3. Listed fauna species

The EPBC Protected Matters Search Tool (DCCEEW 2023a) and VBA (DEECA 2023) indicated that within the search region there were records of, or there occurred potential suitable habitat for 38 threatened fauna species and 29 migratory species listed under the EPBC Act.

Nature Advisory undertook an assessment of the likelihood of occurrence of the listed Fauna Species as detailed in Appendix 2.

This analysis of potential occurrence of listed fauna species excludes:

- Marine fauna given the Project Site is inland; and
- Oceanic bird species (such as albatrosses and petrels) given the Project Site is inland.

Species considered 'likely to occur' are those that have a very high chance of being in the Project Site given the existence of numerous records in the search region and suitable habitat in the Project Site. Using the precautionary approach, species considered to have the 'potential to occur' are those where suitable habitat exists, but recent records are scarce.

A total of nine species are known to occur, or were found to be 'likely to occur' or have the 'potential to occur':

- Blue-winged Parrot (Vulnerable)
- Fork-tailed Swift (Migratory)
- Latham's Snipe (Vulnerable & Migratory)

- Rufous Fantail (Migratory)
- Satin Flycatcher (Migratory)
- White-throated Needletail (Vulnerable & Migratory)
- Southern Brown Bandicoot (Endangered)
- Swamp Antechinus (Vulnerable)
- Southern Bent-wing Bat (Critically Endangered)

Blue-winged Parrot

During the field assessment, in July 2023 and again in January 2024, small groups (5-15 birds) of Blue-winged Parrots were observed foraging throughout the south-eastern portion of the study area (Lot 1 TP592015 Madiera Packet Road) in areas that contained native rushes (*Juncus* sp.) and common weed species. The observation of this foraging habitat is consistent with known foraging habitat of this species (Higgins 1999). Birds remained present in the study area throughout the field assessment and, when flushed, would move to nearby areas of suitable foraging habitat or fly south to the wooded habitat within the Sir William Grant Wind Farm.

The observation of Blue-winged Parrots in winter and summer and the presence of immature birds within the flocks in summer suggests that it is regularly used as foraging habitat for the local population of this species.

Fork-tailed Swift

This species is a migrant from north-east Asia, occurring in Australia from October to April. It is likely to occur in the study area in summer and early autumn when conditions are suitable. It is almost exclusively aerial, foraging up to hundreds of metres above the ground but also above the canopy of forests and over open plains (Menkhorst et al. 2019).

Given its aerial habits and occasional occurrence, it is unlikely that Fork-tailed Swift would be directly impacted by development of the study area.

Latham's Snipe

This species may occur in the study area seasonally (late August to March) following rain events resulting in more extensive inundation of low-lying areas of existing wetlands, particularly where soft substrates (e.g. mud) results in suitable feeding habitat. However, the habitat is considered sub-optimal given the lack of low, dense vegetation. More extensive suitable areas nearby (i.e. Fawthrop Lagoon) contain high quality wetlands that likely provide habitat for Latham's snipe in spring and summer and some birds may visit the study area intermittently.

Given the limited extent and marginal quality of habitat, the study area is unlikely to support a consistent population of Latham's Snipe and therefore the risk to the species' population arising from development of the study area is low.

Rufous Fantail

This species breeds in densely forested habitats along the coast and Great Dividing Range of eastern Australia. It migrates north as far as southern New Guinea to spend winter (Higgins et al. 2006). This species may occasionally pass through the study area utilising roadside vegetations where treed habitat is close to continuous. It was observed in the extensive habitat that lies not far to the north in Cobboboonee NP and Narrawong FR during the summer survey.

Since the areas of potential habitat are not extensive and suboptimal for breeding, development of the study area is unlikely to have a significant impact on this species.

Satin Flycatcher

This species breeds in densely forested habitats along the coast and Great Dividing Range of eastern Australia. It migrates north as far as southern New Guinea to spend winter (Higgins et al. 2006). This species may occasionally pass through the study area utilising roadside vegetations where treed habitat is close to continuous. Extensive habitat lies not far to the north in Cobboboonee NP and Narrawong FR.

Since the areas of potential habitat are not extensive and suboptimal for breeding, development of the study area is unlikely to have a significant impact on this species.

White-throated Needletail

This species is a trans-equatorial migrant breeding in north-east Asia and spending its non-breeding season in Australia from September to April (Higgins 1999). It is likely to occur regularly in summer and early autumn when conditions are suitable. It forages aerially for insects and is rarely if ever seen perching in Australia.

Given its aerial habits and occasional occurrence, it is unlikely that White-throated Needletail would be directly impacted by development of the study area.

Southern Brown Bandicoot

This species likely occurs within the study area due to numerous nearby records. The species is assumed to occur within coastal scrub around the farm dam (Habitat Zone AA) and along the boundary of the study area (Habitat Zone's X, AU, RC, RE, RF and RG). This vegetation is considered continuous with larger areas of habitat within the surrounding landscape where individuals have been recorded as recently as 2017. If Southern Brown Bandicoot is present, the species may be impacted by development in the study area due to the potential loss of suitable nesting and foraging habitat, and movement corridors.

Given that the project is only proposing to remove a relatively small area of habitat (0.072 hectares) in comparison to the extensive areas of suitable habitat in the surrounding landscape, impacts are unlikely to be significant to the species.

Swamp Antechinus

This species likely occurs within the study area due to numerous nearby records. The species is assumed to occur within coastal scrub around the farm dam (Habitat Zone AA) and along the boundary of the study area (Habitat Zone's X, AU, RC, RE, RF and RG). This vegetation is considered continuous with larger areas of habitat within the surrounding landscape. If Swamp Antechinus is present, the species may be impacted by development in the study area due to the potential loss of suitable nesting and foraging habitat, and movement corridors.

Given that the project is only proposing to remove a relatively small area of habitat (0.072 ha) in comparison to the extensive areas of suitable habitat in the surrounding landscape, impacts are unlikely to be significant to the species.

Southern Bent-wing Bat

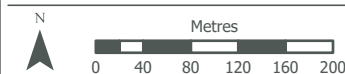
This species had been recorded in the search region and is known to forage widely. Southern Bent-wing Bat is an open-space adapted species that may occasionally fly over the study area and may also opportunistically forage and drink from the wetlands on site.

Given that the proposed development consists of fixed infrastructure as well as connecting powerlines, it is highly unlikely that the project will pose a collision risk to the species. Additionally, the majority of wetland areas have been avoided by the design and any residual impacts are unlikely to lead to a significant impact to a resource for the species. Therefore, development of the study area is unlikely to have a significant impact on this species.

Figure 3: Existing ecological values

Project No: 23146.03
Project: Pacific Green, Portland
Date: 26/03/2024

- Study area
- Threatened fauna recorded**
 - ★ Blue-winged parrot (breeding season)
 - ★ Blue-winged Parrot (non breeding season)
- MNES values**
 - Potential Southern Brown Bandicoot and Swamp Antechinus habitat
 - Blue-winged Parrot foraging habitat
- Native vegetation**
 - Small scattered tree
 - Aquatic Herbland (EVC 653)
 - Heathy Woodland (EVC 48)



PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
 03 9815 2111 - info@natureadvisory.com.au

6. Impacts to MNES

6.1. Impacts to listed ecological communities

No impacts to listed ecological communities are expected from the current proposal.

6.2. Impacts to listed flora species

No impacts to listed flora species are expected from the current proposal.

6.3. Impacts to listed fauna species

Blue-winged Parrot (Vulnerable)

The proposed development footprint is expected to impact upon Blue-winged Parrot of foraging habitat given that this species was recorded during both the summer and winter. A total of 10.827 ha of habitat for Blue-winged Parrot will be impacted, occurring within Lot 1 TP592015 Madera Packet Road, which includes Habitat Zones J, U and V as well as extensive areas of exotic pasture grass.

Southern Brown Bandicoot (Endangered)

Presence of Southern Brown Bandicoot within coastal scrub around the farm dam (Habitat Zone AA) and along the boundary of the study area (Habitat Zone's X, AU, RC, RE, RF and RG) is assumed. Any removal or fragmentation of suitable habitat is regarded as a threatening process for this species which relies on dense cover for breeding, foraging and movement. A total of 0.072 ha of potential habitat for Southern Brown Bandicoot will be impacted, which includes a portion of Habitat Zone RC.

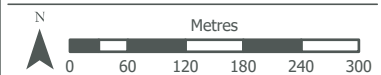
Swamp Antechinus

Presence of Swamp Antechinus within coastal scrub around the farm dam (Habitat Zone AA) and along the boundary of the study area (Habitat Zone's X, AU, RC, RE, RF and RG) is assumed. Any removal or fragmentation of suitable habitat is regarded as a threatening process for this species which relies on dense cover for breeding, foraging and movement. A total of 0.072 ha of potential habitat for Swamp Antechinus will be impacted, which includes a portion of Habitat Zone RC.

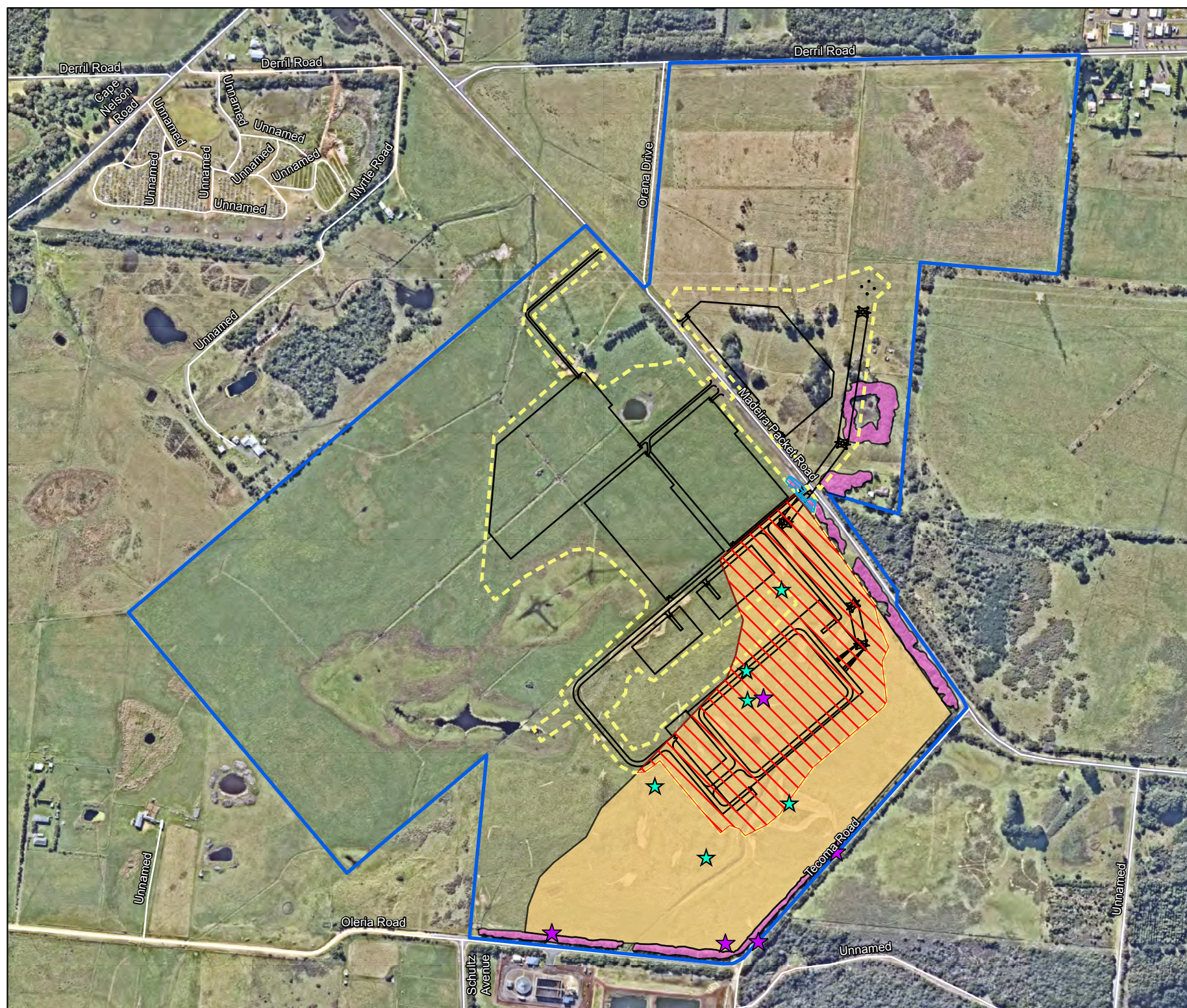
Figure 4: Impacts to MNES

Project No: 23146.03
Project: Pacific Green, Portland
Date: 12/07/2024

- Study area
- Proposed development
- Works impact area July 2024
- Threatened fauna recorded**
- ★ Blue-winged parrot (breeding season)
- ★ Blue-winged Parrot (non breeding season)
- MNES values**
- Potential Southern Brown
- Bandicoot and Swamp Antechinus habitat
- Blue-winged Parrot foraging habitat
- Impacts to MNES values**
- Blue-winged Parrot habitat impacts
- Potential Southern Brown
- Bandicoot and Swamp Antechinus habitat impacts



PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
 03 9815 2111 - info@natureadvisory.com.au



7. Significant impact assessment

7.1. Threatened fauna

The proposed project would result in the following losses:

- A total of 10.827 ha of habitat for Blue-winged Parrot – occurring within Lot 1 TP592015 Madera Packet Road, which includes Habitat Zones U and V as well as extensive areas of exotic pasture grasses; and
- A total of 0.072 ha of potential habitat for Southern Brown Bandicoot and Swamp Antechinus, which includes a part of Habitat Zone RC.

7.1.1. Blue-winged Parrot

The impacts of the proposed Project on Blue-winged Parrot are considered in Table 6 against the EPBC Act Significant Impact Guidelines for **Vulnerable** species (DoE 2013b).

Significant impact criteria

An action is likely to have a significant impact on a **Vulnerable** species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species
- reduce the area of occupancy of an important population
- fragment an existing important population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of an important population
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
- introduce disease that may cause the species to decline, or
- interfere substantially with the recovery of the species.

Habitat critical to survival

'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long-term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to, habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The following species-specific definitions of critical habitat are taken from the most recent conservation advice for Blue-winged Parrot (DCCEEW 2023b):

- Foraging and staging habitats found from coastal, sub-coastal and inland areas, right through to semi-arid zones including grasslands, grassy woodlands, and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs.
- Wetlands both near the coast and in semi-arid zones used for foraging and staging.
- Eucalypt forests and woodlands within the breeding range in Tasmania, coastal southeastern South Australia and southern Victoria.
- Live and dead trees and stumps with suitable hollows within the breeding range.

The conservation advice also states that habitat critical to the survival should not be cleared, fragmented or degraded. Any known or likely habitat should be considered as habitat critical to the survival of the species. It is essential that the highest level of protection is provided to these areas and that enhancement and protection measures target these productive sites. Additional conservation advice is more ambiguous, stating that any known or likely habitat (within the modelled distribution of blue-winged parrot) should be considered as habitat critical to the survival of the species. It is unclear what this encompasses for a species that utilises a wide range of habitat types, including highly disturbed areas such as pasture and cropland.

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

Impacts to Blue-winged Parrot

The land proposed for development has previously been cleared and has historically been subject to intense grazing pressure. Blue-winged Parrots were observed within the project area during winter and summer surveys by Nature Advisory ecologists, suggesting that this area is regularly utilised by the local population of the species. A population of at least 20 Blue-winged Parrots including juveniles was observed on two occasions within the study area.

The impacts of the proposed project on Blue-winged Parrot have been considered against the Significant Impact Guidelines for **Vulnerable** Species (DoE 2013b). Based on a site-based assessment and the known ecology of the species, the impact of the proposed development is unlikely to have a significant impact on the Blue-winged Parrot. Critically, the proposal avoids impacts to roosting and nesting habitat of the species, with disturbance restricted to foraging habitat, a resource that is locally abundant throughout the region.

Refer to Appendix 4 for detailed assessment of the Blue-winged Parrot.

Table 6: Significant Impact Assessment – Blue-winged Parrot (EPBC: Vulnerable)

Significant impact criterion	Assessment	Significant impact likelihood
Lead to a long-term decrease in the size of an important population of a species.	A population of at least 20 Blue-winged Parrots including juveniles was observed during the non-breeding and breeding season within the study area. Blue-winged Parrots tend to favour grasslands and grassy woodlands, are often found near wetlands and are often observed in altered environments such as airfields, golf-courses and paddocks (DCCEEW 2023c). During surveys, Blue-winged Parrots were observed in the same area during winter and summer surveys. The habitat they were utilising is observed extensively throughout the Portland region (agricultural land), although the local population clearly favour utilising the habitat within the study area. The proposed project footprint will occupy a large proportion of the area that the Blue-winged Parrots were observed foraging in within the study area (10.827 ha will be lost). Decreasing the area if foraging habitat that is utilised year-round by this population of BWPs could disrupt the behaviours of the current population. However, it is likely that the existing population will be able to locate alternate food sources in similar agricultural properties throughout the broader region.	Potential but unlikely
Reduce the area of occupancy of an important population.	The proposed project footprint will occupy most of an area where birds were observed foraging. This will reduce the area of foraging of a potentially important population, however in the context of the extensive areas of similar agricultural land within the broader landscape, this is not considered significant. Additionally, the project does not impact/reduce the area of occupancy on roosting and nesting habitat for the species.	Potential
Fragment an existing important population into two or more populations.	Blue-winged Parrots are a highly mobile species and utilise a range of habitats (DCCEEW 2023c). This suggests that the project is not anticipated to fragment the important population of Blue-winged Parrots into two or more populations.	Unlikely
Adversely affect habitat critical to the survival of a species.	Foraging and breeding habitat is considered critical to the survival of a species. The proposed project footprint will occupy a large proportion of area the Blue-winged Parrots were observed foraging in during the non-breeding and breeding season. Although the proposed development is proposing to adversely affect foraging habitat, it is not considered to be critical to the survival of Blue-winged Parrots. Blue-winged Parrots are highly mobile species and have adapted to modified landscapes and opportunistically feed on a range of food sources including extensively available pasture grasses and other common weeds. As such, the loss of foraging habitat is not considered as critical to the survival of the species, in comparison to suitable roosting and nesting habitat.	Unlikely

Significant impact criterion	Assessment	Significant impact likelihood
Disrupt the breeding cycle of a population.	The proposed project footprint will occupy most of an area where the Blue-winged Parrots were observed foraging in during the breeding season. The loss of this foraging resource during the breeding season could potentially disrupt the breeding cycle of this local population of Blue-winged Parrot, if this food source is impacted. However, Blue-winged Parrots are highly mobile species and have adapted to modified landscapes and opportunistically feed on a range of food sources including extensively available pasture grasses and other common weeds.	Potential but unlikely
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The proposed project footprint will occupy a large proportion of area the Blue-winged Parrots were observed foraging in during the non-breeding and breeding season. This could potentially impact the local population, but because of the wide distribution of this species, it is unlikely to lead to a decline in the species. The foraging habitat within the study area is considered to be marginal and similar habitat occurs extensively in the surrounding region.	Unlikely
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread of invasive species, including implementation of pest plant and animal monitoring and control, the project is unlikely to result in the introduction of invasive species that are harmful to Blue-winged Parrot.	Unlikely
Introduce disease that may cause the species to decline.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread or introduction of disease, including strict cleaning procedures and protocol during construction, the project is unlikely to introduce disease that may cause the species to decline.	Unlikely
Interfere substantially with the recovery of the species.	The project is unlikely to substantially interfere with the recovery of this species as a comparatively small area of foraging habitat, in comparison to the landscape is to be impacted. Additionally, no breeding or roosting habitat is proposed to be impacted.	Unlikely

7.1.2. Southern Brown Bandicoot

The impacts of the proposed Project on Southern Brown Bandicoot are considered in Table 7 against the EPBC Act Significant Impact Guidelines for **Endangered** species (DoE 2013b).

Significant impact criteria

An action is likely to have a significant impact on an **Endangered** species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species

- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

Habitat critical to survival

'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long-term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to, habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The following species-specific definitions of habitat are taken from the most recent referral guidelines for Southern Brown Bandicoot (DSEWPaC, 2011a):

- Suitable habitat: Any patches of native or exotic vegetation, within the distribution of the southern brown bandicoot (Maps 1 to 6), which contains understorey vegetation structure with 50-80% average foliage density in the 0.2-1 m height range.
- Important exotic habitat: Any patches of exotic vegetation which may provide habitat or connectivity for southern brown bandicoots. Important exotic vegetation should be assessed on a case by case basis for use by southern brown bandicoots (see section 4) and typically has, but is not limited to, the following characteristics:
 - an area covering greater than 25 m²
 - occurs within 50 m proximity of suitable vegetation, which may be native or exotic
 - contains understorey vegetation structure with 50-80% average foliage density in the 0.2-1 m height range.

The advice goes on to state that habitat critical to the survival should not be cleared, fragmented or degraded. Any known or likely habitat should be considered as habitat critical to the survival of the species. It is essential that the highest level of protection is provided to these areas and that enhancement and protection measures target these productive sites.

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

Impacts to Southern Brown Bandicoot

The land proposed for development has previously been cleared and has historically been subject to intense grazing pressure. Southern Brown Bandicoot inhabit areas of dense vegetation, in both native bushland and areas with exotic shrubby species such as Blackberry (*Rubus* spp.) (TSSC 2016b). Whilst no Southern Brown Bandicoot were observed within the study area during the field assessments and no targeted surveys have been conducted, this species is assumed to occur in suitable habitat within the study area. The impacts of the proposed project on Southern Brown Bandicoot have been considered against the Significant Impact Guidelines for **Endangered** Species (DoE 2013b). Based on the relevant conservation advice and significant impact criteria the impact of the proposed development is unlikely to have a significant impact on the Southern Brown Bandicoot. This is because only a small area of foraging and dispersal habitat is being removed, which is unlikely to lead to a long-term decrease in the size of an important population of the species and will not reduce the area of occupancy of an important population by adversely affecting habitat critical to the survival of the species.

Table 7: Significant Impact Assessment – Southern Brown Bandicoot (EPBC: Endangered)

Significant impact criterion	Assessment	Significant impact likelihood
Lead to a long-term decrease in the size of a population.	The project site is considered unlikely to support an important population, given it constitutes relatively small areas of habitat most of which occur along a roadside which is largely avoided by the development.	Unlikely
Reduce the area of occupancy of the species.	The proposed project footprint will impact 0.072 ha of potential Southern Brown Bandicoot habitat. This is highly unlikely to reduce the area of occupancy of a potentially important population, as any important population in the region would not be reliant on this small area of roadside vegetation. Although the powerline easements intersect with this identified habitat, it will only be maintained below 4 metres. This maintenance will not affect the habitat for which the species utilises and has therefore not been considered as impacted habitat.	Unlikely
Fragment an existing population into two or more populations.	This project is not anticipated to fragment an important population of Southern Brown Bandicoot into two or more populations given that the habitat identified is already largely fragmented and the proposed impact area is on the edge of a patch of vegetation with no suitable habitat beyond the patch for which would connect an existing population.	Unlikely
Adversely affect habitat critical to the survival of a species.	Foraging and breeding habitat is considered critical to the survival of a species. The proposed project footprint will impact 0.072 ha of potential Southern Brown Bandicoot habitat. This small amount of impact is highly unlikely to adversely affect habitat critical to the survival of Southern Brown Bandicoot.	Unlikely
Disrupt the breeding cycle of a population.	The proposed project footprint will impact 0.072 ha of potential Southern Brown Bandicoot habitat. The small amount of loss of this resource during the breeding season is highly unlikely to disrupt the breeding cycle of this population of Southern Brown Bandicoot.	Unlikely

Significant impact criterion	Assessment	Significant impact likelihood
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The proposed project footprint will impact 0.072 ha of potential Southern Brown Bandicoot habitat. This is unlikely going to impact a local population that could lead to a decline in the species. However, the foraging habitat within the study area is considered to be marginal and more suitable habitat occurs extensively in the surrounding region.	Unlikely
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread of invasive species, including implementation of pest plant and animal monitoring and control, the project is unlikely to result in the introduction of invasive species that are harmful to Southern Brown Bandicoot.	Unlikely
Introduce disease that may cause the species to decline.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread or introduction of disease, including strict cleaning procedures and protocol during construction, the project is unlikely to introduce disease that may cause the species to decline.	Unlikely
Interfere with the recovery of the species.	The project is unlikely to substantially interfere with the recovery of this species due to the extensive areas of more suitable habitat in the nearby coastal reserves.	Unlikely

7.1.3. Swamp Antechinus

The impacts of the proposed Project on Swamp Antechinus are considered in Table 8 against the EPBC Act Significant Impact Guidelines for **Vulnerable** species (DoE 2013b).

Significant impact criteria

An action is likely to have a significant impact on a **Vulnerable** species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species
- reduce the area of occupancy of an important population
- fragment an existing important population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of an important population
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

- introduce disease that may cause the species to decline, or
- interfere substantially with the recovery of the species.

Habitat critical to survival

‘Habitat critical to the survival of a species or ecological community’ refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long-term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to, habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The following species-specific definitions of critical habitat are taken from the most recent conservation advice for Swamp Antechinus (TSSC 2016a):

- Occurs primarily in damp areas, mainly at sites with dense vegetation at about 1–2 m above ground level.
- Suitable habitat includes dense wet heathlands, tussock grasslands, sedgeland, damp gullies, swamps and some shrubby woodlands.
- Dense leaf litter or suitable topsoil to shelter in short burrows.

The advice goes on to state that habitat critical to the survival should not be cleared, fragmented or degraded. Any known or likely habitat should be considered as habitat critical to the survival of the species. It is essential that the highest level of protection is provided to these areas and that enhancement and protection measures target these productive sites.

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

Impacts to Swamp Antechinus

The land proposed for development has previously been cleared and has historically been subject to intense grazing pressure. Swamp Antechinus inhabit areas of dense vegetation, in wetter areas of heathlands, tussock grasslands, sedgeland, damp gullies, swamps and shrubby woodlands (TSSC 2016a). Whilst no Swamp Antechinus were observed within the study area during the field assessments and no targeted surveys have been conducted, this species is assumed to occur in suitable habitat within the study area. The impacts of the proposed project on Swamp Antechinus have been considered against the Significant Impact Guidelines for **Vulnerable** Species (DoE 2013b). Based on the relevant conservation advice and significant impact criteria the impact of the proposed development is unlikely to have a significant impact on the Swamp Antechinus. This is because only a small area of foraging and dispersal habitat is being removed, which is unlikely to lead to a long-term decrease in the size of an important population of the species and will not reduce the area of occupancy of an important population by adversely affecting habitat critical to the survival of the species.

Table 8: Significant Impact Assessment – Swamp Antechinus (EPBC: Vulnerable)

Significant impact criterion	Assessment	Significant impact likelihood
Lead to a long-term decrease in the size of an important population of a species.	The project site is considered unlikely to support an important population, given it constitutes relatively small areas of habitat most of which occur along a roadside which is largely avoided by the development.	Unlikely
Reduce the area of occupancy of an important population.	The proposed project footprint will impact 0.072 ha of potential Swamp Antechinus habitat. This is highly unlikely to reduce the area of occupancy of a potentially important population, as any important population in the region would not be reliant on this small area of roadside vegetation. Although the powerline easements intersect with this identified habitat, it will only be maintained below 4 metres. This maintenance will not affect the habitat for which the species utilises and has therefore not been considered as impacted habitat.	Unlikely
Fragment an existing important population into two or more populations.	This project is not anticipated to fragment an important population of Swamp Antechinus into two or more populations given that the habitat identified is already largely fragmented and the proposed impact area is on the edge of a patch of vegetation with no suitable habitat beyond the patch for which would connect an existing population.	Unlikely
Adversely affect habitat critical to the survival of a species.	Foraging and breeding habitat is considered critical to the survival of a species. The proposed project footprint will impact 0.072 ha of potential Swamp Antechinus habitat. This small amount of impact is highly unlikely to adversely affect habitat critical to the survival of Southern Brown Bandicoot.	Unlikely
Disrupt the breeding cycle of a population.	The proposed project footprint will impact 0.072 ha of potential Swamp Antechinus habitat. The small amount of loss of this resource during the breeding season is highly unlikely to disrupt the breeding cycle of this population of Southern Brown Bandicoot.	Unlikely
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The proposed project footprint will impact 0.072 ha of potential Swamp Antechinus habitat. This is unlikely going to impact a local population that could lead to a decline in the species. However, the foraging habitat within the study area is considered to be marginal and more suitable habitat occurs extensively in the surrounding region.	Unlikely
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread of invasive species, including implementation of pest plant and animal monitoring and control, the project is unlikely to result in the introduction of invasive species that are harmful to Southern Brown Bandicoot.	Unlikely

Significant impact criterion	Assessment	Significant impact likelihood
Introduce disease that may cause the species to decline.	It is recommended that a Construction Environmental Management Plan (CEMP) is created and implemented to manage the environmental impacts of the construction-phase of this project. Provided construction mitigation measures are put in place to ensure project does not facilitate the spread or introduction of disease, including strict cleaning procedures and protocol during construction, the project is unlikely to introduce disease that may cause the species to decline.	Unlikely
Interfere substantially with the recovery of the species.	The project is unlikely to substantially interfere with the recovery of this species due to the extensive areas of more suitable habitat in the nearby coastal reserves.	Unlikely

8. Conclusion

Assessment against the EPBC Act Significant Impact Guidelines found that the project has the potential to but is unlikely to have a significant impact on the following MNES:

- Fauna species
 - Blue-winged Parrot

Additionally, assessment against the EPBC Act Significant Impact Guidelines found that the project is unlikely to have a significant impact on the following MNES:

- Southern Brown Bandicoot
- Swamp Antechinus

The Project is not expected to impact any other MNES.

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Appendix 1: Likelihood of occurrence of listed flora species

Common Name	Scientific name	EPBC	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
River Swamp Wallaby-grass	<i>Amphibromus fluitans</i>	Vulnerable	River Swamp Wallaby-grass grows mostly in permanent swamps and also lagoons, billabongs, dams and roadside ditches. The species requires moderately fertile soils with some bare ground; conditions that are caused by seasonally-fluctuating water levels (DCCEEW 2023).	PMST	No previous records	N/A	Wetlands in the study area severely disturbed from cattle and within introduced pasture grasses lacking native grasses and sedges, but some marginally suitable habitat within wetlands in the southern lot parcel and drainage line along Oleria Road (albeit highly degraded). Usually conspicuous but the study area has been short-grazed by cattle. No previous records within search area – nearest records are at Cobboboonee National Park, more than 17km away. No individuals were recorded during targeted surveys. Unlikely to occur
Limestone Spider-orchid	<i>Caladenia calcicola</i>	Vulnerable	Well-drained limey sands in heathy forest on limestone ridges (Jones 2006).	PMST & VBA	110	1/10/2005	No suitable habitat. Original heathy habitat in the study area prior to agricultural land uses has been cleared and not present. Unlikely to occur.
Mellblom's Spider-orchid	<i>Caladenia hastata</i>	Endangered	One known population at Point Danger, south of portland. Occurs on well-drained sands in dense coastal heathland and heathy forest (Todd 2000).	PMST & VBA	66	9/10/2017	No suitable habitat. Original heathy habitat in the study area prior to agricultural land uses has been cleared and not present. Unlikely to occur.
Ornate Pink-fingers	<i>Caladenia ornata</i>	Vulnerable	Heathy forest and among shrubs on seasonally moist sandy loams (Jones 2006).	PMST	No previous records	N/A	No suitable habitat. Original heathy and shrubby habitat in the study area prior to agricultural land uses has been cleared and not present. Unlikely to occur.
Clover Glycine	<i>Glycine latrobeana</i>	Vulnerable	Found across south-eastern Australia in native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer. In Victoria, populations occur in lowland grasslands, grassy woodlands and sometimes in grassy heath (DCCEEW 2023).	PMST	No previous records	N/A	No suitable habitat. Grasslands (seasonally wet/inundated pastures) in the study area contained introduced grasses and pugging from cattle. No previous records in search area - nearest record at Mt Richmond National Park over 17km away. Unlikely to occur.
Coast Ixodia	<i>Ixodia achillaeoides</i> subsp. <i>arenicola</i>	Vulnerable	Confined to coastal vegetation in the Cape Bridgewater-Portland area (Short 1999).	PMST & VBA	4	27/08/2008	No suitable habitat. Original coastal heath and woodland habitat in the study area prior to agricultural land uses has been cleared and not present. Unlikely to occur.
Spiny Peppercress	<i>Lepidium aschersonii</i>	Vulnerable	The Spiny Peppercress occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. Almost all sites receive some degree of soil waterlogging or seasonal flooding.	PMST	No previous records	N/A	Study area outside the known distribution of the species – all previous records northeast of this region, inland between Warrnambool and Geelong and towards Horsham. Unlikely to occur.
Basalt Peppercress	<i>Lepidium hyssopifolium</i> s.s.	Endangered	Known to establish on open, bare ground with limited competition from other plants. Previously recorded from Eucalypt woodland with a grassy ground cover, low open <i>Casuarina</i> woodland with a grassy ground cover and tussock grassland. Now generally found amongst exotic pasture grasses and beneath exotic trees (DCCEEW 2023).	PMST	No previous records	N/A	No suitable habitat in the study area. Also study area generally outside the known distribution of the species – almost all previous records northeast of this region, inland between Warrnambool and Macedon, plus one record from 1983 near the Nelson estuary more than 60km west (possible mis-identification). Unlikely to occur.
Gorae Leek-orchid	<i>Prasophyllum diversiflorum</i>	Endangered	Wet grasslands or inundated swamps among tussocks (Jones 2006).	VBA	No records since pre-1990	N/A	No suitable habitat. Wetlands in the study area severely disturbed from cattle and within introduced pasture grasses lacking native grass tussocks and sedges. No records since 1990 in search area, nearest record was in 1949 at Nuns Beach 3.5km north. Next nearest records are from 1933, 1942 and 1948 in Cobboboonee National Park more than 16km northwest. Unlikely to occur.

Common Name	Scientific name	EPBC	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Maroon Leek-orchid	<i>Prasophyllum frenchii</i>	Endangered	Grows mainly in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. Sites are generally low altitude, flat and moist. Soils are generally moderately rich damp sandy or black clay loams. Climate is mild, with an annual rainfall of 600–1100 mm, occurring predominantly in winter and spring (DCCEEW 2023).	VBA	No records since pre-1990	N/A	No suitable habitat. Wetlands in the study area severely disturbed from cattle and within introduced pasture grasses lacking native grasses and sedges. No records since 1990 in search area, nearest record was in 1947 at Nuns Beach 3.5km north. Next nearest record is from 1945 near Cobboboonee National Park more than 16km northwest. Unlikely to occur.
Dense Leek-orchid	<i>Prasophyllum spicatum</i>	Vulnerable	Occurs in coastal and near-coastal heathland and heathy woodland. Soils are generally sandy, with some sites seasonally waterlogged (Duncan 2010).	PMST & VBA	No records since pre-1990	N/A	No suitable habitat. Original coastal heath and woodland habitat in the study area prior to agricultural land uses has been cleared and not present – degraded scrub in the roadside densely infested with introduced grass and other weeds. No previous records in search area since 1990, two old records from 1980’s are on developed land. Nearest recent record is at Cobboboonee National Park. Unlikely to occur.
Green-striped Greenhood	<i>Pterostylis chlorogramma</i>	Vulnerable	Occurs in mixed Box-Stringybark forest with a shrubby understorey, often with <i>Pteridium esculentum</i> as a major component on sandy or clay loam soils (Duncan et al. 2009).	PMST	No previous records	N/A	No suitable habitat. Modelled pre-settlement vegetation is heathland and heathy woodland, not Box-Strongybark Forest. Vegetation prior to agricultural land uses has been cleared and not present – degraded scrub in the roadside has some Austral Bracken but also densely infested with introduced grass and other weeds. No previous records in search area. Nearest records at Mount Clay more than 17km northeast. Unlikely to occur.
Leafy Greenhood	<i>Pterostylis cucullata</i>	Vulnerable	Tea-tree scrubs on tall sandy and calcareous dunes, in moist, open or even deep shaded locations (Jones 1994).	PMST	No previous records	N/A	No suitable habitat. Original coastal heath and woodland habitat in the study area prior to agricultural land uses has been cleared and not present – degraded scrub in the roadside densely infested with introduced grass and other weeds. No previous records in search area. Nearest recent records limited to Budj Bim National Park more than 40km northwest. Unlikely to occur.
Swamp Fireweed	<i>Senecio psilocarpus</i>	Vulnerable	Herb-rich winter-wet swamps on volcanic clays or peaty soils (Walsh 1999). Known from approximately 10 sites between Wallan, about 45 km north of Melbourne, and Honans Scrub in south-eastern South Australia (TSSC 2008).	PMST	No previous records	N/A	Wetlands and roadside drainage lines in the study area severely disturbed and within introduced pasture grasses lacking native grasses and sedges. But some marginally suitable habitat within wetlands in the southern lot parcel and drainage line along Oleria Road (albeit highly degraded). No records in search area, nearest few records are in Cobboboonee Forest Park more than 13km northwest. No individuals were recorded during targeted surveys. Unlikely to occur.
Slender Plum-orchid	<i>Thelymitra orientalis</i>	Critically Endangered	Occurs in heath and heathy woodland, usually in damp/seepage areas along watercourses and around swamp margins, on either in peaty white sands or heavy black often peaty soils (DEECA 2023; RBGV 2023).	PMST	No VBA records	N/A	No suitable habitat. Original coastal heath and woodland habitat in the study area prior to agricultural land uses has been cleared and not present – degraded scrub in the roadside densely infested with introduced grass and other weeds. Additionally, there are no records in search area. Unlikely to occur.
Swamp Everlasting	<i>Xerochrysum palustre</i>	Vulnerable	Grows in wetlands including sedge-swamps and shallow freshwater marshes, often on heavy black clay soils. Commonly associated genera include <i>Amphibromus</i> , <i>Baumea</i> , <i>Carex</i> , <i>Chorizandra</i> , <i>Craspedia</i> , <i>Eleocharis</i> , <i>Isolepis</i> , <i>Lachnagrostis</i> , <i>Lepidosperma</i> , <i>Myriophyllum</i> , <i>Phragmites australis</i> , <i>Themeda triandra</i> and <i>Villarsia</i> (DCCEEW 2023).	PMST	No previous records	N/A	Wetlands and roadside drainage lines in the study area severely disturbed and within introduced pasture grasses lacking native grasses and sedges. But some marginally suitable habitat within wetlands in the southern lot parcel and drainage line along Oleria Road (albeit highly degraded). No previous records in search area, nearest few records are in Cobboboonee Forest Park more than 18km northwest and Bessiebelle State Forest more than 27km northeast. No individuals were recorded during targeted surveys. Unlikely to occur.

Appendix 2: Likelihood of occurrence of listed fauna species

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Birds								
Australasian Bittern	<i>Botaurus poiciloptilus</i>	Endangered		Terrestrial wetlands, including a range of wetland types but prefers permanent water bodies with tall dense vegetation, particularly those dominated by sedges, rush, reeds or cutting grass (Marchant & Higgins 1990).	PMST & VBA	59	8/08/2021	No suitable habitat - Unlikely to occur.
Australian Painted-snipe	<i>Rostratula australis</i>	Endangered	CAMBA	Generally, inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of <i>Lignum muehlenbeckia</i> or canegrass or sometimes tea-tree (<i>Melaleuca</i>). Sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (DCCEEW 2023).	PMST & VBA	No records since pre-1990	N/A	No suitable habitat or historic records - Unlikely to occur.
Bar-tailed Godwit	<i>Limosa lapponica</i>	Vulnerable	BONN A2H, ROKAMBA, JAMBA, CAMBA	Mainly coastal species, usually in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats (Higgins & Davies 1996).	PMST & VBA	8	11/04/2003	No suitable habitat - Unlikely to occur.
Black-faced Monarch	<i>Monarcha melanopsis</i>		BONN A2H	Rainforests, eucalypt woodlands, coastal scrub and damp gullies (Higgins et al. 2006)	PMST	No previous records	N/A	Outside of known distribution - Unlikely to occur.
Blue-winged Parrot	<i>Neophema chrysostoma</i>	Vulnerable		Occupies coastal, subcoastal and inland habitats ranging into semi-arid zones. Throughout much of range inhabits grasslands and grassy woodlands and forest (Higgins 1999).	PMST & VBA	79	6/12/2019	Recorded in study area during field assessment.
Caspian Tern	<i>Hydroprogne caspia</i>		CAMBA, JAMBA	Sheltered coastal embayment, including harbours, lagoons, inlets, estuaries and river deltas, usually with sandy or muddy margins (Higgins & Davies 1996).	VBA	19	31/01/2019	No suitable habitat - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Common Greenshank	<i>Tringa nebularia</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	PMST & VBA	2	1/09/1999	No suitable habitat - Unlikely to occur.
Common Sandpiper	<i>Actitis hypoleucos</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits a wide range of coastal or inland wetlands with varying levels of salinity, mainly muddy margins or rocky shores of wetlands. In Victoria, mostly found Westernport and Port Phillip Bay (Higgins & Davies 1996).	PMST & VBA	24	4/11/2000	No suitable habitat - Unlikely to occur.
Curlew Sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	PMST & VBA	6	2/10/2018	No suitable habitat - Unlikely to occur.
Diamond Firetail	<i>Stagonopleura guttata</i>	Vulnerable		Commonly found in box-ironbark forests and woodlands and also occurs along watercourses and in farmland areas. Widespread but scattered. Forages on a wide range of seeds, which in some cases a large portion can be derived from weed species (Read 1994). Populations have declined in Victoria since the 1950s (Emison et al. 1987; Tzaros 2005).	PMST & VBA	No records since pre-1990	N/A	Scarcity of records from search region - Unlikely to occur.
Double-banded Plover	<i>Charadrius bicinctus</i>		BONN A2H	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Marchant & Higgins 1993).	VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Eastern Curlew	<i>Numenius madagascariensis</i>	Critically Endangered	BONN A1, ROKAMBA, JAMBA, CAMBA	Inhabits sheltered coasts, especially estuaries, embayment, harbours, inlets and coastal lagoons with large intertidal mudflats or sandflats, often with beds of sea grass (Higgins & Davies 1996).	PMST & VBA	4	3/12/2004	No suitable habitat - Unlikely to occur.
Eastern Osprey	<i>Pandion cristatus</i>		BONN A2S	Rare vagrant to Victoria (Marchant & Higgins 1993). Littoral and coastal habitats and terrestrial wetlands. They are mostly found in coastal areas but occasionally travel inland along major rivers (Johnstone & Storr 1998; Marchant & Higgins 1993; Olsen 1995). They require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993).	VBA	No records since pre-1990	N/A	Scarcity of records from search region - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Fairy Tern	<i>Sternula nereis</i>	Vulnerable		Generally restricted to sheltered coasts both on the mainland, and inshore and offshore islands. Occurs in embayment, such as harbours, inlets, bays, estuaries, lagoons, and ocean beaches. Also found on lakes and salt ponds (Higgins & Davies 1996).	PMST & VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Fork-tailed Swift	<i>Apus pacificus</i>		CAMBA, ROKAMBA, JAMBA	The species can occur in wet sclerophyll forest but mainly prefers open forest or plains. It is almost exclusively aerial and feeds up to hundreds of metres above the ground, but can feed among open forest canopy. The species breeds internationally and seldom roosts in trees (Higgins 1999).	PMST & VBA	10	31/01/2020	May occasionally forage over study area - Potential to occur.
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Endangered		In summer generally in tall mountain forests and woodlands, particularly in heavily timbered, mature wet sclerophyll forests and woodlands. Prefer <i>Eucalyptus</i> dominated assemblages. Also occurs in subalpine snow gum woodlands and occasionally in temperate rainforests and regenerating forests. In winter occur at lower altitudes in drier, more open <i>Eucalyptus</i> woodland (Higgins 1999).	PMST & VBA	48	24/02/2021	No suitable habitat - Unlikely to occur.
Great Knot	<i>Calidris tenuirostris</i>	Critically Endangered	BONN A2H, ROKAMBA, JAMBA, CAMBA	In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons. They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, saltlakes and non-tidal lagoons. The Great Knot rarely occurs on inland lakes and swamps (DCCEEW 2023).	VBA	1	17/02/1992	No suitable habitat - Unlikely to occur.
Greater Sand Plover	<i>Charadrius leschenaultii</i>	Vulnerable	BONN A2H, ROKAMBA, JAMBA, CAMBA	Entirely coastal; mainly on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks. In Vic. Mostly in Corner inlet, Westernport and Port Phillip Bay (Marchant & Higgins 1993).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Grey Falcon	<i>Falco hypoleucos</i>	Vulnerable		Inhabits arid and semi-arid zones; mainly on sandy and stony plains of inland drainage systems, lightly timbered with acacia. Hunt far into open areas, over spinifex, tussock grasslands and low shrublands. In Victoria, few records mostly in north and northwestern regions (Marchant & Higgins 1993).	PMST	No previous records	N/A	Outside of known distribution - Unlikely to occur.
Grey Plover	<i>Pluvialis squatarola</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Entirely coastal, but occasionally inland. Mainly on marine shores, inlets, estuaries and lagoons where there are nearby large tidal mudflats for feeding and sandy beaches for roosting (Marchant & Higgins 1993).	VBA	3	3/01/2000	No suitable habitat - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Hooded Plover	<i>Thinornis cucullatus</i>	Vulnerable		Inhabits sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding. Widespread and scattered across coastal Victoria. Numbers reduced due to disturbance by recreational activities on beaches (Marchant & Higgins 1993).	PMST & VBA	30	11/07/2021	No suitable habitat - Unlikely to occur.
Hooded Robin	<i>Melanodryas cucullata</i>	Endangered		Occur mostly in open Grey Box, White Box, Yellow Box, Yellow Gum and Ironbark woodlands with pockets of saplings or taller shrubs, an open shrubby understorey, sparse grasses and patches of bare ground and leaf-litter, with scattered fallen timber. The population has declined throughout range, especially since the early 1980s. This species typically occurs north of the great divide in shrubland or woodland dominated by acacias (Higgins & Peter 2002; Tzaros 2005).	VBA	20	2/07/1991	Outside of known distribution - Unlikely to occur.
Latham's Snipe	<i>Gallinago hardwickii</i>	Vulnerable	BONN A2H, ROKAMBA, JAMBA, CAMBA	Occurs in wide variety of permanent and ephemeral wetlands; it prefers open freshwater wetlands with dense cover nearby, such as the edges of rivers and creeks, bogs, swamps, waterholes. The species is widespread in southeast Australia and most of its population occurs in Victoria, except in the northwest of the state (Naarding 1983; Higgins & Davies 1996).	PMST & VBA	31	29/01/2021	Suitable habitat occurs within study area and recent records from search region - Potential to occur.
Little Tern	<i>Sternula albifrons</i>		BONN A2S, ROKAMBA, JAMBA, CAMBA	Sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand spits. In Victoria, they are found mainly on the east coast between Mallacoota and Corner Inlet, rare elsewhere (Higgins & Davies 1996).	PMST & VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Malleefowl	<i>Leipoa ocellata</i>	Vulnerable		Mainly in semi-arid zones (200–450 mm rainfall), but in higher rainfall area of heath and mallee-heath. Rarely occurs in arid zones. Associated with mallee, particularly floristically rich tall dense mallee of higher rainfall areas (Marchant & Higgins 1993). Notably in Victoria, a small, isolated population does occur in Wychitella Flora and Fauna Reserve near Wedderburn (DSE 2003).	VBA	1	1/12/1990	No suitable habitat - Unlikely to occur.
Marsh Sandpiper	<i>Tringa stagnatilis</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits sandy, muddy or rocky shores, usually coastal, rarely far inland. Often on beaches and mudflats, sandflats and occasionally rock shelves (Higgins & Davies 1996).	VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	Critically Endangered		The Orange-bellied Parrot is endemic to south-eastern Australia. Its current non-breeding mainland distribution is from the mouth of the Murray River in South Australia, along the coast, to the east of Jack Smith Lake in South Gippsland, Victoria, covering approximately 1000 km of coastline. The most used sites in Victoria are around Port Phillip Bay and Bellarine Peninsula. In South Australia, Carpenter Rocks is the main site. During winter on the mainland, found mostly within 3 km of the coast. In Victoria, they mostly occur in sheltered coastal habitats, such as bays, lagoons and estuaries, or, rarely, saltworks. They are also found in low samphire herbland dominated by Beaded Glasswort <i>Sarcocornia quinqueflora</i> , Sea Heath <i>Frankenia pauciflora</i> or Sea-blite <i>Suaeda australis</i> , and in taller shrubland dominated by Shrubby Glasswort <i>Sclerostegia arbuscula</i> . They are sometimes found in low samphire dominated by Grey Glasswort <i>Halosarcia halocnemoides</i> or in	PMST	No previous records	N/A	Lack of suitable habitat and no historic records - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
				<i>Chenopodium</i> herbfields. Breeds at Melaleuca in Tasmania during spring/summer months (DCCEEW 2023).				
Painted Honeyeater	<i>Grantiella picta</i>	Vulnerable		Inhabits box-ironbark forests and woodlands and mainly feeds on the fruits of mistletoe. Strongly associated with mistletoe around the margins of open forests and woodlands. Can also be found in farmland containing remnant treed vegetation. Occurs at few localities. Uncommon breeding migrant from further north, arriving in October and leaving in February (Higgins et al. 2001; Tzaros 2005).	PMST	No previous records	N/A	Lack of suitable habitat and no historic records - Unlikely to occur.
Pectoral Sandpiper	<i>Calidris melanotos</i>		BONN A2H, ROKAMBA, JAMBA	Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	PMST & VBA	1	2/03/2006	No suitable habitat - Unlikely to occur.
Plains-wanderer	<i>Pedionomus torquatus</i>	Critically Endangered		This species is highly sensitive to changes in grassland cover and density. Typically inhabits treeless native grasslands with sparse cover, with a preference for grasslands composed of wallaby grass and spear grass (Marchant & Higgins 1993). Habitat becomes unsuitable when grassland becomes dense (CA 2016). Evidence suggests it avoids areas of tree cover, with no records of the species within 300m of trees (>10m high) in their strongholds in New South Wales or Victoria (CA 2016).	PMST	No previous records	N/A	Lack of suitable habitat and no historic records - Unlikely to occur.
Red Knot	<i>Calidris canutus</i>	Endangered	BONN A2H, ROKAMBA, JAMBA, CAMBA	In Australasia, the Red Knot mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (DCCEEW 2023).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Red-necked Stint	<i>Calidris ruficollis</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	VBA	4	1/11/1999	No suitable habitat - Unlikely to occur.
Red-tailed Black-Cockatoo (south-eastern)	<i>Calyptorhynchus banksii graptogyne</i>	Endangered		Prefer eucalypt forests and woodlands but often in adjacent acacia or <i>Casuarina</i> woodlands. In Victoria, subsp. <i>graptogyne</i> inhabits mostly in or at edge of patches of Brown Stringybark woodlands in pasture or in remnant copses of River Red-gum (Higgins 1999).	PMST & VBA	1	7/01/2013	No suitable habitat - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Ruddy Turnstone	<i>Arenaria interpres</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Rufous Fantail	<i>Rhipidura rufifrons</i>		BONN A2H	In east and south-east Australia, mainly inhabits tall wet sclerophyll forests, often in gullies. When on passage in warmer months, they are sometimes recorded in drier sclerophyll forests and woodlands, as well as parks and gardens (Higgins et al. 2006). Virtually absent from south-eastern Australia during winter (Higgins et al. 2006).	PMST & VBA	11	17/10/2004	Lack of suitable habitat but may occasionally visit study area when on passage during warmer months - Potential to occur.
Sanderling	<i>Calidris alba</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits open sandy beaches exposed to sea-swells; also, on exposed sandbars and spits (Higgins & Davies 1996).	VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
Satin Flycatcher	<i>Myiagra cyanoleuca</i>		BONN A2H	Mostly found in eucalypt forest, particularly tall wet forests and woodland within gullies (Higgins et al. 2006). Also inhabits eucalypt woodland comprising an open understorey and a grassy ground layer (Higgins et al. 2006). Generally absent from rainforest (Higgins et al. 2006).	PMST & VBA	7	18/12/2010	Lack of suitable habitat but may occasionally visit study area when on passage during warmer months - Potential to occur.
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	PMST & VBA	15	27/10/2018	No suitable habitat - Unlikely to occur.
Swift Parrot	<i>Lathamus discolor</i>	Critically Endangered		Prefers a select range of eucalypts in Victoria, including Yellow Gum, Grey Box, White Box, Red Ironbark and Yellow Box, as well as River Red-gum when this species supports abundant 'lerp' (Saunders & Tzaros 2011). The species is also known to forage within planted stands of Spotted Gum and Sugar Gum (Nature Advisory; unpublished data). Breeds in Tasmania and migrates to the mainland of Australia for the autumn, winter and early spring months. It lives mostly north of the Great Dividing Range, passing through two areas of Victoria on migration: the Port Phillip district and Gippsland (Emison et al. 1987; Higgins 1999; Kennedy & Tzaros 2005). Though it is also not uncommonly sighted in urban areas (Nature Advisory; unpublished data). Occurrence of this species on the mainland can substantially change from year to year depending on food availability, giving potential for this species to occur almost anywhere throughout its range (Emison et al. 1987).	PMST	No previous records	N/A	Lack of suitable habitat and no historic records - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Terek Sandpiper	<i>Xenus cinereus</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits saline intertidal mudflats in sheltered estuaries, harbours and lagoons; on islets, mudbanks, sandbanks or spits. In Victoria, they occur in Corner Inlet, Westernport Bay and Port Phillip Bay (Higgins & Davies 1996).	VBA	No records since pre-1990	N/A	No suitable habitat - Unlikely to occur.
White-throated Needletail	<i>Hirundapus caudacutus</i>	Vulnerable	CAMBA, ROKAMBA, JAMBA	Aerial, over all habitats, but probably more over wooded areas, including open forest and rainforest. Often over heathland and less often above treeless areas such as grassland and swamps or farmland (Higgins 1999).	PMST & VBA	No records since pre-1990	N/A	May occasionally forage over study area - Potential to occur.
Wood Sandpiper	<i>Tringa glareola</i>		BONN A2H, ROKAMBA, JAMBA, CAMBA	Inhabits well vegetated, shallow, freshwater wetlands, such as swamps, lakes, pools, and waterholes; typically, with emergent, aquatic plants or grass, and dominated by taller fringing vegetation, such as dense stands of rushes or reed. In Victoria, they are mostly from Port Phillip Bay and in mid-Murray valley (Higgins & Davies 1996).	VBA	5	2/03/2006	Lack of suitable habitat and scarcity of recent historic records - Unlikely to occur.
Yellow Wagtail	<i>Motacilla flava</i>		CAMBA, JAMBA, ROKAMBA	Common migrant from Asia. Inhabits moist, grassy or muddy areas, sewage treatment plants, sports fields, tracks or bare ground, occasionally on beaches (Menkhorst et al. 2019).	PMST	No previous records	N/A	Suitable habitat occurs but no historic records - Unlikely to occur.
Mammals								
Heath Mouse	<i>Pseudomys shortridgei</i>	Endangered		In eastern Australia, Heath Mouse prefers recently burnt (preferably 7–10 years post fire), floral species-rich, treeless, dry heathlands in an area with 600 mm annual rainfall. The optimum situation for the species appears to be a mosaic of habitats of differing maturity, subject to the disturbance by fire. Typical habitats include dry heath, and forest and woodland with a heathy understorey (Menkhorst 1995). In Victoria, the species is restricted to the wannon region in the far west of the state.	PMST & VBA	16	7/02/1994	Scarcity of records from search region and lack of suitable habitat - Unlikely to occur.
Long-nosed Potoroo	<i>Potorous tridactylus trisulcatus</i>	Vulnerable		In Victoria, the species occupies a wide variety of wet forest and wet scrub, usually occurring on sandy loam soils where rainfall exceeds 750mm annually (Menkhorst 1995); In Tasmania, moist forest with dense shrub layer; in the north edge of rainforest (Menkhorst 1995). Dense understorey vegetation is an essential component for the species persistence, which can consist of grass trees, sedges, ferns, heath, tea-tree or melaleucas (Menkhorst 1995).	PMST & VBA	No records since pre-1990	N/A	Scarcity of records from search region and lack of suitable habitat - Unlikely to occur.
New Holland Mouse	<i>Pseudomys novaehollandiae</i>	Vulnerable		Suitable habitat includes coastal heath and scrub, heathy woodland, open forest and vegetated sand-dunes, with dry heath regenerating post-fire appearing to be optimal for the species (Menkhorst 1995). Victorian records are largely restricted to the localities of Anglesea, Westernport and Gippsland lakes.	PMST	No previous records	N/A	Scarcity of records from search region and lack of suitable habitat - Unlikely to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Smoky Mouse	<i>Pseudomys fumeus</i>	Endangered		Smoky Mouse occurs in a wide variety of habitats, from heath to dry sclerophyll forest, especially along ridgetops with a heath understorey, and occasionally adjacent wetter habitats such as fern gullies (Menkhorst 1995). A characteristic of many localities, except those in wet gullies, is a floristically diverse shrub layer with members of the plant families <i>Epacridaceae</i> , <i>Fabaceae</i> and <i>Mimosaceae</i> well represented (DCCEEW 2023). Shrub seeds and berries are important food sources for the species, with fire frequency and intensity highly influential in the occurrence of such habitat, and ultimately the species (Menkhorst 1995).	PMST	No previous records	N/A	Scarcity of records from search region and lack of suitable habitat - Unlikely to occur.
Southern Brown Bandicoot	<i>Isoodon obesulus obesulus</i>	Endangered		Suitable habitat for Southern Brown Bandicoots (eastern) is defined to be any patches of native or exotic vegetation, within their distribution, which contains understorey vegetation structure with 50–80% average foliage density in the 0.2–1 m height range. In areas where native habitats have been degraded or diminished, exotic vegetation, such as Blackberry (<i>Rubus</i> spp.), can and often does, provide important habitat (DCCEEW 2023).	PMST & VBA	37	23/06/2017	Recent nearby records and suitable habitat present in the form of roadside vegetation - Likely to occur.
Spot-tailed Quoll	<i>Dasyurus maculatus maculatus</i>	Endangered		Rainforest, wet and dry forest, coastal heath and scrub and River Red-gum woodlands along inland rivers (Menkhorst 1995).	PMST & VBA	No records since pre-1990	N/A	No recent records from search region and lack of suitable habitat - Unlikely to occur.
Swamp Antechinus	<i>Antechinus minimus maritimus</i>	Vulnerable		Dense wet heath, tussock grassland, sedgeland heathy woodland and coastal heath and scrub (Menkhorst 1995). Requires mature, dense vegetation with thick ground cover (DCCEEW 2023). Shelters in short burrows or underneath dense leaf litter. Rarely occurs more than 200m above sea level. Though this species has also previously been detected at sites which had experienced some structural disturbance in the South Gippsland region (Nature Advisory; unpublished data).	PMST & VBA	No records since pre-1990	N/A	No recent records from search region, however, there is suitable habitat within and adjacent to the study area - Potential to occur.
Yellow-bellied Glider	<i>Petaurus australis</i>	Vulnerable		Forests with a predominance of smooth-barked eucalypts, as well as a mixture of eucalypt species. Uncommon in wet forests dominated by single tree species; a mixture of tree species is preferred (Menkhorst 1995). Inhabits a range of forest types, depending on the location in Victoria - western populations use dry woodland and forest, whereas southern, eastern and northeastern populations use a variety of wet forest types (Menkhorst 1995). Require large hollows in large, old trees. In Mountain Ash forest dependent on extensive stands of old-growth forest - rare in young forest even when scattered old trees are available (Menkhorst 1995). Will persist in corridors as narrow as 200 m (Menkhorst 1995).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Bats								
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Vulnerable		Brisbane, Newcastle, Sydney and Melbourne are occupied continuously. Elsewhere, during spring, they are uncommon south of Nowra and widespread in other areas of their range. Roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of <i>Melaleuca</i> , mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas (DCCEEW 2023).	PMST & VBA	2	19/07/2013	No suitable habitat - Unlikely to occur.
Southern Bent-winged Bat (southern ssp.)	<i>Miniopterus orianae bassanii</i>	Critically Endangered		Roosts in caves during the day, dispersing over a range of habitats at night. Its feeding areas tend to be associated with major drainage systems (Menkhorst 1995).	PMST & VBA	35	9/09/2016	May occasionally forage over study area - Potential to occur.

Common Name	Scientific name	EPBC-T	EPBC-M	Habitat	Source	Number of records	Date of last record	Likelihood of occurrence
Reptiles								
Swamp Skink	<i>Lissolepis coventryi</i>	Endangered		Wetlands including swamp margins, lakes, rivers, creeks and even tidal salt marshes, often associated with tea-tree thickets (Wilson & Swan 2003).	PMST & VBA	1	20/02/2006	Nearby historical record but wetland habitat marginal and highly degraded through history of grazing - Unlikely to occur.
Fish								
Australian Grayling	<i>Prototroctes maraena</i>	Vulnerable		Large and small coastal streams and rivers with cool, clear waters with a gravel substrate and altering pools and riffles (Cadwallader & Backhouse 1983).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Dwarf Galaxias	<i>Galaxiella pusilla</i>	Vulnerable		Ranges from the far west of the state through to the Mitchell River basin in central Gippsland. Vegetated margins of still water, ditches, swamps and backwaters of creeks, both ephemeral and permanent (Allen et al. 2002). Some wetlands where it occurs may partially or completely dry up during summer, with such wetlands reliant on seasonal flooding plus linkages to other sites where the species occurs, for habitat and population replenishment (Saddlier, Jackson & Hammer 2010). Dwarf Galaxias is also often found in association with burrowing freshwater crayfish (<i>Engaeus</i> spp.), with the crayfish burrows reportedly providing refuge from predators and dry conditions for the species (Saddlier, Jackson & Hammer 2010).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Yarra Pygmy Perch	<i>Nannoperca obscura</i>	Vulnerable		Streams and small lakes, prefers flowing water with abundant aquatic vegetation (Allen et al. 2002).	PMST	No previous records	N/A	No suitable habitat - Unlikely to occur.
Amphibians								
Growling Grass Frog	<i>Litoria raniformis</i>	Vulnerable		Permanent, still or slow flowing water with fringing and emergent vegetation in streams, swamps, lagoons and artificial wetlands such as farm dams and abandoned quarries (Clemann & Gillespie 2004).	PMST & VBA	No records since pre-1990	N/A	No recent records from search region and lack of suitable permanent habitat - Unlikely to occur.
Mussels, decapod crustacea								
Glenelg Spiny Crayfish	<i>Euastacus bispinosus</i>	Endangered		Glenelg Spiny Freshwater Crayfish is considered a specialist species with typically low tolerance to environmental conditions (namely dissolved oxygen concentrations), ensuring that species requires specific habitat requirements. As with other <i>Euastacus</i> species, Glenelg Spiny Freshwater Crayfish have a preference for permanently flowing, cool (and shaded) and well-oxygenated water (Morgan 1986; Morgan 1997). Other habitat requirements vary across Victorian and South Australian populations.	PMST	No previous records	N/A	No recent records from search region and lack of suitable habitat - Unlikely to occur.

Appendix 3: Targeted Flora Survey



Portland Battery Energy Storage System (BESS)

Targeted Flora Survey

**Prepared for Pacific Green
Technologies Pty Ltd**

April 2024
Report No. 23146.02 (1.1)



**Nature
Advisory**

(Formerly Brett Lane & Associates Pty Ltd)

5/61-63 Camberwell Road
Hawthorn East, VIC 3123
PO Box 337, Camberwell VIC 3124
(03) 9815 2111
www.natureadvisory.com.au

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1. Executive summary

Pacific Green Technologies Pty Ltd engaged Nature Advisory Pty Ltd to undertake targeted surveys for five threatened flora species at a 122-hectare area of privately owned land and the adjacent roadsides in Portland. A utility scale Battery Energy Storage System (BESS) is proposed for the site. The study area comprised four parcels of land at Lot 1 TP592015 Madeira Packet Road, Allotment 61A Section 13 Parish of Portland, 305 Madeira Packet Road and 333 Madeira Packet Road. The study area also included the roadsides of Madeira Packet Road, Tecoma Road, Derril Road and Oleria Road. The following flora species listed as threatened under the Commonwealth EPBC Act and/or State FFG Act were surveyed for during this investigation:

- River Swamp Wallaby-grass (**EPBC Act: Vulnerable**);
- Swamp Fireweed (**EPBC Act: Vulnerable**);
- Swamp Everlasting (**EPBC Act: Vulnerable; FFG Act: Critically Endangered**);
- Curly Sedge (**FFG Act: Endangered**); and
- Swamp Diuris (**FFG Act: Endangered**).

No individuals of the above-mentioned threatened flora species were recorded in the study area during targeted surveys. As such, these species are unlikely to occur in the proposed development footprint and thus there are no regulatory implications regarding these species.

2. Introduction

Pacific Green Technologies Pty Ltd engaged Nature Advisory Pty Ltd to undertake targeted surveys for five threatened flora species at a 122-hectare area of privately owned land and the adjacent roadsides in Portland. A utility scale Battery Energy Storage System (BESS) is proposed for the site. The study area comprised four parcels of land at Lot 1 TP592015 Madeira Packet Road, Allotment 61A Section 13 Parish of Portland, 305 Madeira Packet Road and 333 Madeira Packet Road. The study area also included the roadsides of Madeira Packet Road, Tecoma Road, Derril Road and Oleria Road. The following flora species listed as threatened under the Commonwealth EPBC Act and/or State FFG Act were surveyed for during this investigation:

- River Swamp Wallaby-grass (EPBC Act: Vulnerable);
- Swamp Fireweed (EPBC Act: Vulnerable);
- Swamp Everlasting (EPBC Act: Vulnerable; FFG Act: Critically Endangered);
- Curly Sedge (FFG Act: Endangered); and
- Swamp Diuris (FFG Act: Endangered).

This investigation was commissioned to provide information regarding the presence or otherwise of threatened flora species in the study area and outline any implications under various national, state and local legislation and policy.

This report presents the findings of the assessment, identifies relevant issues and provides recommendations and mitigation options, and is divided into the sections described below:

Section 3 presents the sources of information and biology of the five target flora species.

Section 4 presents the methods of the surveys.

Section 5 presents the results of the assessments.

Section 6 presents the regulatory implications.

Section 7 presents the conclusions and recommendations.

This investigation was undertaken by a team from Nature Advisory, comprising Tessa Doherty (Botanist), Suzie Moss (Botanist), and Chris Armstrong (Ecologist & Project Manager).

3. Species biology

3.1. River Swamp Wallaby-grass

3.1.1. Description

River Swamp Wallaby-grass (*Amphibromus fluitans*) is a rhizomatous and stoloniferous aquatic or semi-aquatic perennial grass. It grows to 80cm tall and has flat, glabrous and scabrous leaf blades up to 25cm long. The flowering stems are arching and can grow to over a metre, with roughly half the stem submerged in water (DEWHA 2008a). River Swamp Wallaby-grass flowers from November to March (RBGV 2023).



Photo: Neville Walsh (image cropped), [CC BY-NC-SA 4.0](#) © Royal Botanic Gardens Board.

Source: [VicFlora](#).

3.1.2. Habitat

River Swamp Wallaby-grass is found in natural water bodies such as swamps, lagoons and billabongs as well as constructed dams (DEWHA 2008a).

3.1.3. Distribution

River Swamp Wallaby-grass occurs in NSW, Victoria, South Australia and Tasmania. In Victoria, it occurs mostly along the Murray River and its tributaries between Kerang and Tallangatta. Rarer in the south, it is known from several areas in south Gippsland, as well as in the Melbourne, Ballarat and Portland-Casterton areas (DEWHA 2008a).

3.1.4. Threats

The historical drainage and modification of lowland swamps and conversion of these areas to agricultural land has resulted in the loss of habitat for River Swamp Wallaby-grass across its range (DEWHA 2008a).

Major threats to River Swamp Wallaby-grass include:

- Loss of habitat through changed hydrology (largely in agricultural areas).

- Grazing and trampling by livestock, especially late in the season as water levels recede and swamps become accessible to livestock.
- Invasion of habitat (competition with exotic grasses and other weeds).

3.1.5. Legislative protection

River Swamp Wallaby-grass is currently listed as **Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**.

3.2. Swamp Fireweed

3.2.1. Description

Swamp Fireweed (*Senecio psilocarpus*) is a rhizomatous herb with above-ground parts arising annually from a perennial rootstock. It grows to 80 centimetres in height, having an erect form that is rarely branched below the inflorescence (RBGV 2023). Its leaves are simple, sessile, auriculate and alternate, and are mostly glabrous with margins occasionally hispid. The inflorescence consists of 2 to 20 capitula, with distinctive long internodes of up to 20 centimetres at the base of the inflorescence (DEWHA 2008b).



Photo: Marc Freestone (image cropped), [CC BY-NC-SA 4.0](#) © Royal Botanic Gardens Board. Source: [VicFlora](#).

3.2.2. Habitat

Swamp Fireweed is known from wetlands and swamps on plains supporting a range of soil types, including volcanic clays, grey/black silty clays and peaty soils. These wetlands often exhibit strong fluctuations of water levels, being fully inundated in winter and nearly drying out in summer. Associated vegetation is often rich in diversity of grasses, sedges and aquatic herbs, and is often lacking a canopy or includes an open canopy of River Red Gum (*Eucalyptus camaldulensis*) (DEWHA 2008b).

3.2.3. Distribution

Swamp Fireweed occurs in South Australia, Tasmania and Victoria. In Victoria, the species is largely distributed in the southern half of the state from the Melbourne region west to the border, with scattered records east to Sale (RBGV 2023).

3.2.4. Threats

Widespread historical land clearing and alteration has led to the modification of the majority of wetland habitat across Victoria. The current threats to Swamp Fireweed are not well understood (DEWHA 2008b), however the following are thought to be ongoing threatening processes:

- Grazing pressure from stock and overabundant native fauna.
- Weed invasion leading to degradation of habitat and displacement.
- Habitat loss, disturbance and modification, particularly through changes to hydrology.

3.2.5. Legislative protection

Swamp Fireweed is currently listed as **Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**.

3.3. Swamp Everlasting

3.3.1. Description

The Swamp Everlasting (*Xerochrysum palustre*) is a perennial rhizomatous herb. It grows to 30-100 centimetres in height, having an erect form with minimal branching of stems. Its leaves are narrow, alternating and largely glabrous; with the exception of cobweb-like hairs running along the leaf margins (RBGV 2023). The Swamp Everlasting exhibits striking golden-yellow flowers, which bloom from November to March. The flowers are composed of numerous florets arranged in a button-like configuration, and surrounded by a series of overlapping, papery bracts (DAWE 2021).



Photo: Marc Freestone (image cropped), [CC BY-NC-SA 4.0](#) © Royal Botanic Gardens Board. Source: [VicFlora](#).

3.3.2. Habitat

The Swamp Everlasting is a relatively large daisy found in either permanent or seasonal wetlands (Carter & Walsh 2011). It favours lowland swamps and shallow freshwater marshes, which are sedge-rich in composition and overlaid on heavy black cracking clays. The species is also known to grow in ephemeral wetland habitats, such as seasonally wet native grasslands and heathlands. In some instances, the species has even been detected in water up to 1-metre in depth. Companion species are primarily derived from a range of common wetland genera. These include Common Reed (*Phragmites australis*), Twig-sedge (*Machaerina* spp.), Native Sedge (*Carex* spp.), Spike-sedge (*Eleocharis* spp.), Club-sedge (*Isolepis* spp.), Sword-sedge (*Lepidosperma* spp.), Bristle-rush (*Chorizandra* spp.), Swamp Wallaby-grass (*Amphibromus* spp.), Watermilfoil (*Myriophyllum* spp.) and Marsh-flower (*Ornduffia* spp.). Some grassland species that are also commonly associated with Swamp Everlasting include Kangaroo Grass (*Themeda triandra*), Blown-grass (*Lachnagrostis* spp.) and Billy-button (*Craspedia* spp.) (DAWE 2021; Carter & Walsh 2011).

3.3.3. Distribution

The Swamp Everlasting occurs in Victoria, New South Wales and Tasmania. The distribution of the species within Victoria is patchy and extends from the South Australian border to near Bairnsdale, typically found below an altitude of 500 metres (DAWE 2021).

3.3.4. Threats

Prior to European settlement, the Swamp Everlasting was likely widespread across wetland habitats. However, due to activities such as the draining of wetlands for agriculture and modifications of waterways, the species has experienced a large depletion of available habitat and extensive fragmentation of populations. These activities remain a continuing threat to the species, particularly on private land in Victoria (DAWE 2021).

Major threats to the Swamp Everlasting include:

- Climate change (increased frequency and severity of fires and drought).
- Habitat loss, disturbance and modification through land clearing and changed hydrology.
- Invasive species (grazing and disturbance from feral herbivores and competition with weeds).
- Grazing from overabundant native fauna.
- Genetic threats from small and fragmented populations.

3.3.5. Legislative protection

Swamp Everlasting is currently listed as:

- **Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); and**
- **Critically Endangered under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act).**

A national recovery plan for the species has been developed (Carter & Walsh 2011).

3.4. Curly Sedge

3.4.1. Description

Curly Sedge (*Carex tasmanica*) is a rhizomatous, densely tufted perennial sedge. Culms typically grow to a height of between 20-70 centimetres, but may sometimes reach as high as 170 centimetres, and bear a narrow inflorescence of two to four solitary spikes at the nodes. Flowers develop in Spring (RBGV 2023). Leaves are typically leathery, flat and blunt at the apex, which is distinctively curled when dry. Blades

typically grow to around 40 centimetres, and sheath close to the base of flowering stems (Threatened Species Scientific Committee 2016).



Photo: Andre Messina (image cropped), [CC BY-NC-SA 4.0](#) © Royal Botanic Gardens Board. Source: [VicFlora](#).

3.4.2. Habitat

Curly Sedge typically occurs in seasonally wet heavy fertile clays often derived from basalt, such as drainage lines, moist depressions and on the verges of swamps. Hydrology can be freshwater or slightly saline (Threatened Species Scientific Committee 2016).

3.4.3. Distribution

Curly Sedge occurs in Tasmania and Victoria. In Victoria, the species is known to occur at Cranbourne as well as in the west, from the region surrounding Heywood and Portland east to Lake Weeranganuk (RBGV 2023).

3.4.4. Threats

Historical modification of lowland swamps, drainage lines and other damp areas on the clay soils of western Victoria for agriculture has resulted in the loss of much of Curly Sedge's preferred habitat (Threatened Species Scientific Committee 2016).

Major current threats to Curly Sedge include:

- Loss of habitat through changed hydrology and loss of seasonal inundation, particularly relating to the permanent flooding or drying of creeks.
- Intensive grazing and trampling by livestock, especially from cattle and high densities of sheep.
- Land use changes which alter inundation regimes, alter beneficial regimes of light grazing or clear land for cropping.
- Roadworks which clear suitable habitat along roadside drainage lines.
- Weed invasion of habitat.

3.4.5. Legislative protection

Curly Sedge is currently listed as **Endangered under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)**.

Curly sedge was previously listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), but was found to be no longer eligible for listing and subsequently removed from listing in 2016 (Threatened Species Scientific Committee 2016).

3.5. Swamp Diuris

3.5.1. Description

Swamp Diuris (*Diuris palustris*) is a terrestrial orchid arising from a subterranean tuber, with above-ground parts dying back after flowering. The flowering stem grows to 15 centimetres tall and bears one to four yellow flowers which are blotched with brown. Leaves are narrow, channelled and often twisted. They grow to eight centimetres, forming a loose tussock of up to 15 leaves at the base of the plant. Swamp Diuris flowers from August to October (RBGV 2023).



Photo: Jeff Jeanes (image cropped), [CC BY-NC-SA 4.0](#) © Royal Botanic Gardens Board. Source: [VicFlora](#).

3.5.2. Habitat

Swamp Diuris is known from a range of habitats including grassland, heath, woodland and box-ironbark communities, with the majority of records in drier inland box-ironbark communities (DELWP 2021). In these habitats, Swamp Diuris often occurs in localised swampy depressions (RBGV 2023).

3.5.3. Distribution

Swamp Diuris occurs in Victoria, Tasmania and South Australia. In Victoria, the species occurs west of Melbourne to the state border, distributed from the southern Wimmera to the coast. Swamp Diuris was

previously recorded in the Melbourne region, but has no recent records and is now thought extinct in this area (RBGV 2023).

3.5.4. Threats

The majority of the habitat of Swamp Diuris in the Melbourne region has been removed by urban development, and the species is now thought extinct in this area. The remainder of the species' habitat in the west has been heavily encroached by clearing for agriculture, as well as for recreation activity in coastal areas (DELWP 2021).

Major current threats to Swamp Diuris include:

- Ongoing clearance of habitat in coastal regions for residential and industrial development as well as recreational activity.
- Habitat loss, disturbance and modification through land clearing and changed hydrology, particularly for agriculture.

3.5.5. Legislative protection

Swamp Diuris is currently listed as **Endangered under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)**.

4. Methods

4.1. Existing information

The following previous report on the study area was reviewed prior to the current site inspection:

- *Portland Battery Energy Storage System (BESS) - Flora and Fauna Assessment* (Nature Advisory 2023).

Records and listing status under state legislation were obtained from the Victorian Biodiversity Atlas (VBA), a public database held by the Department of Energy, Environment, and Climate Action (DEECA). These records were obtained from a wider area, named the 'search region' defined for this assessment as an area with a radius of 10 kilometres from the approximate outline of the study area.

The likelihood of suitable habitat in the study area for nationally threatened flora species was ascertained through a search of the online *Protected Matters Search Tool* (DCCEEW 2023) using the same search region.

Threatened flora species requiring targeted surveys were determined in the previous report (Nature Advisory 2023) based on a likelihood of occurrence analysis. This found that the study area had the potential to support the following five threatened flora species:

- River Swamp Wallaby-grass (**EPBC Act: Vulnerable**);
- Swamp Fireweed (**EPBC Act: Vulnerable**);
- Swamp Everlasting (**EPBC Act: Vulnerable; FFG Act: Critically Endangered**);
- Curly Sedge (**FFG Act: Endangered**); and
- Swamp Diuris (**FFG Act: Endangered**).

4.2. Habitat assessment

At each survey site, the habitat components considered important in influencing the distribution of the target species were assessed. These components included vegetation type, dominant species, vegetation structure, weed cover, hydrology and disturbance. These components were examined across the site during the field assessment and used to determine whether targeted surveys were required.

A habitat assessment for the properties at 305 Madeira Packet Road and 333 Madeira Packet Road was undertaken in conjunction with the native vegetation assessments at those properties (Nature Advisory 2024). These properties were deemed unlikely to support the target flora species and therefore targeted surveys were not undertaken. A justification for this conclusion is detailed in Section 5.2, where the observed vegetation is described.

4.3. Field methodology

A targeted survey for the five above-mentioned flora species was conducted by two botanists across two days on 31 October 2023 and 1 November 2023. The survey coincided with the flowering period for all species, listed in brackets below:

- River Swamp Wallaby-grass (flowers November to March);
- Swamp Fireweed (flowers November to March);
- Swamp Everlasting (flowers November to March);
- Curly Sedge (flowers September to November); and

- Swamp Diuris (flowers August to October).

The survey area was traversed on foot using the following method:

- A random meander was used to visually inspect the site and determine where targeted surveys would be required. This method involved walking across the site to get a relatively even coverage of the study area (refer to Figure 2 for area covered). Areas of native vegetation and drainage lines mapped in the previous report (Nature Advisory 2023) informed where survey efforts should be focussed, and these areas were prioritised. Coverage of the site was tracked using ArcGIS Field Maps® (ESRI). Where areas of habitat for threatened species were identified, transects were traversed as described below.
- Parallel transects were spaced five metres apart as this was considered adequate on-site for detecting target species given the low height and clear visibility of the vegetation. Transects were traversed and visually inspected for the target species within areas of habitat (defined below). Transects were tracked using ArcGIS Field Maps® (ESRI).
- Habitat for most of the target species was considered as swampy depressions or drainage lines where native vegetation was present and disturbance from cattle was comparatively low. See result in Section 5.2 for a detailed description of vegetation condition encountered in the study area.

4.4. Limitations of field assessment

Although some areas were inundated and inaccessible at the time of survey, these areas were easily visible from the edge of the water. The edges of these wet areas were traversed, and the ground inspected closely. Inaccessible areas contained the same vegetation as the areas that were traversed. These areas contained either no vegetation (i.e., open water), non-native vegetation (a mixture of Divided Sedge and Water Buttons) or Spike-sedge, Azolla and Swamp Crassula (Photo 1). Target species able to grow in standing water (River Swamp Wallaby-grass, Swamp Everlasting, Swamp fireweed and Curly Sedge) are all conspicuous species and would have been observable from the edge of the water, if present. See Photo 1 below for an example of an area not surveyed by transects as it was covered by water during the time of survey.



Photo 1: Standing water in the centre of Habitat Zone F.

Disturbance from cattle in the form of pugging and intensive grazing has significantly altered the state of the vegetation in the study area. All vegetation was grazed, meaning that some species may be unidentifiable if present. However, it is considered highly unlikely that the target species would be able to persist in the area under such grazing intensity, and if they were, they would have been observable during the targeted survey. See Photo 2 for an example of heavily grazed and pugged vegetation.



Photo 2: Unsurveyed heavily grazed ground with pugging from cattle.

The timing of the targeted surveys, duration and weather conditions under which surveying was undertaken were considered suitable for detecting the target species. Additionally, the overall survey effort was considered sufficient to detect the species in the study area.

Figure 1 Historical records of target flora species within 10 kilometres of the study area

Project No: 23146.02

Project: Pacific Green, Portland

Date: 9/04/2024

 Study area

 10km buffer of the study area

VBA_broad_listedfloraFF_Clippped

VBA listed flora record

 Curly Sedge

 Swamp Diuris



**Nature
Advisory**

PO Box 337, Camberwell, VIC 3124, Australia

www.natureadvisory.com.au

03 9815 2111 - info@natureadvisory.com.au

5. Results

5.1. Existing information

The VBA contains records of Swamp Diuris and Curly Sedge within 10 kilometres of the study area. shows the locations of these records in the surrounding area. There were no VBA records of Swamp Everlasting, River Swamp Wallaby-grass and Swamp Fireweed within a 10-kilometre radius at the time the search was conducted.

5.2. Habitat assessment

Meandering surveys for areas of habitat found that vegetation in the study area was largely unsuitable to support any of the target species. This was due mostly to the vegetation type which was predominantly non-native pasture in paddocks. Some areas within the pasture supported native Rush (*Juncus sp.*) and Bracken Fern (*Pteridium esculentum*), however weed cover was very high in these areas and were therefore not considered habitat for the target species. See Photo 3, Photo 4 and Photo 5 below for examples of non-native pasture where targeted surveys were not undertaken. Additionally, areas of Heathy Woodland (EVC 48) understorey regrowth along roadsides were considered too dense and weedy to support the target species. While Swamp Diuris requires heath or woodland as habitat, there were no areas identified as suitable for this species due to the very high weed cover and lack of swampy depressions within the patches of Heathy Woodland. See Photo 6 below for an example of highly modified roadside vegetation where targeted surveys were not undertaken. Additionally, the intensive grazing and pugging observed across the properties was considered likely to exclude these areas as being habitat for threatened species.

Although some aquatic habitat was present in Habitat Zone AB (Photo 7), this habitat zone was an artificial dam that lacked continuity to larger wetlands. This area was dominated by a mix of native and non-native herbs and graminoids and deemed to be of relatively low quality due to pugging by cattle.

Although the study area in general was considered unlikely to support target species, a precautionary approach was taken, and targeted surveys were conducted in some of the more suitable habitat areas which included damp depressions and drainage lines despite there still being evidence of impacts from cattle. Targeted surveys were conducted in habitat zones J, U and V (insets in Figure 2). See Photo 8 below for an example of the habitat observed in these areas. Targeted surveys were also conducted in damp depressions within and adjacent to habitat zones D, V and W (insets in Figure 2). See Photo 9 below for an example of habitat observed in these areas.



Photo 3: Drainage line and non-native pasture present across most the study area where targeted surveys were not required



Photo 4: Area of Bracken Fern with dense cover of pasture grasses underneath, where targeted surveys were not required



Photo 5: Area of native Rush with pasture underneath, where targeted surveys were not required



Photo 6: Roadside Heathy Woodland (EVC 48) where targeted surveys were not undertaken due to high weed cover



Photo 7: Habitat Zone AB where targeted surveys were not conducted due to relatively high pugging and higher weed cover



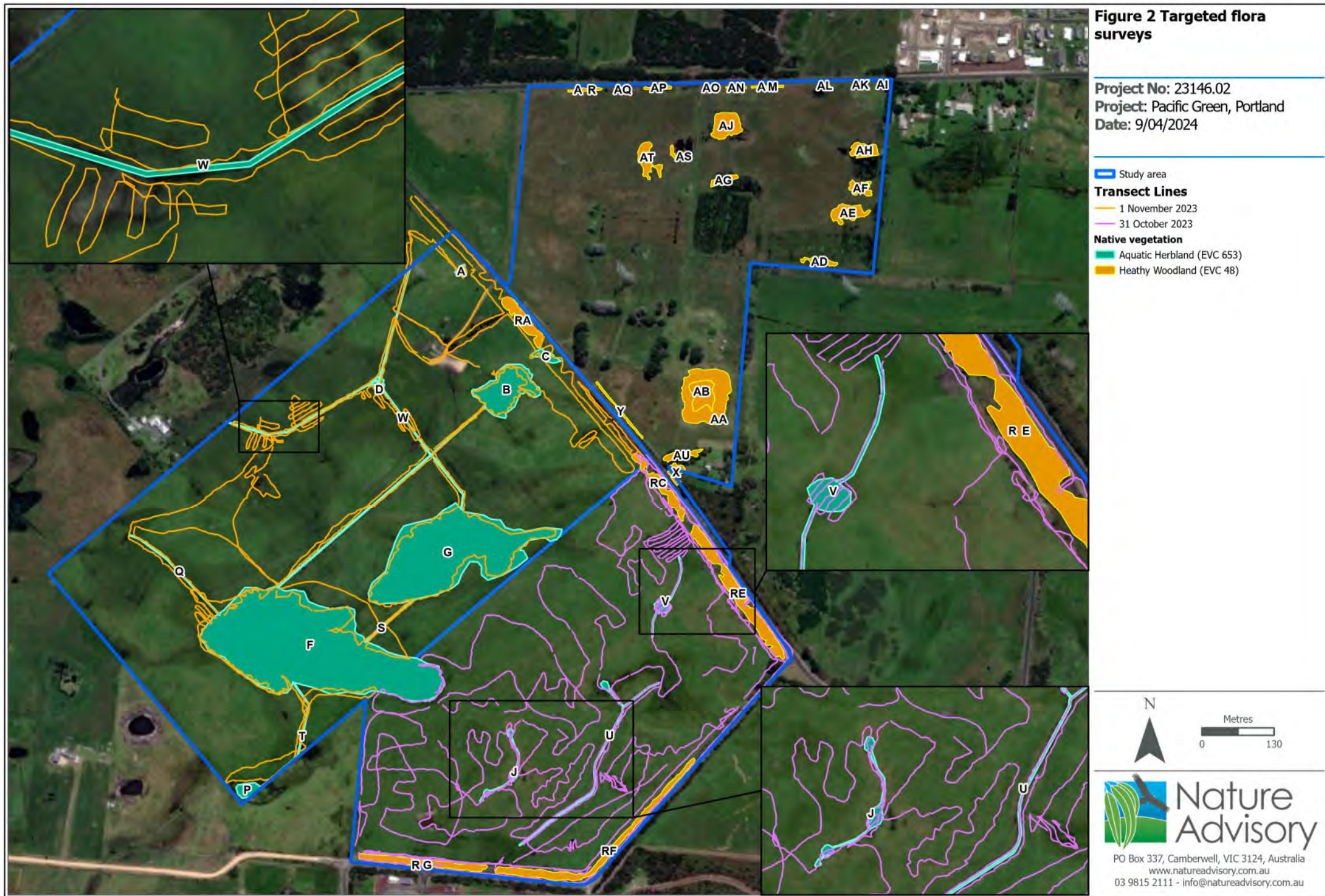
Photo 8: Example of drainage line (Habitat Zone U) where targeted surveys were conducted due to relatively less pugging and higher cover of native species



Photo 9: Example of drainage line in Habitat Zone D where targeted surveys were conducted due to presence of native aquatic species

5.3. Survey results

No individuals of the target flora species were recorded within the study area during the current investigation. As such, these species are unlikely to occur within the study area. Refer to Figure 2 for the area surveyed, including insets where targeted surveys were conducted.



6. Regulatory implications

6.1. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) lists threatened species and ecological communities of national conservation significance. Any impacts to these species considered significant require the approval of the Australian Minister for the Environment. If a significant impact on nationally threatened species or communities, or listed migratory species may be possible, a Referral under the EPBC Act should be considered. After 20 business days, the Minister will decide whether the project will be a 'controlled action' under the EPBC Act, in which case the project cannot be undertaken without the approval of the Minister. This approval depends on a further assessment and approval process (lasting between three and nine months, depending on the level of assessment).

No flora species listed as threatened under the EPBC Act were observed during the current investigation.

The proposed BESS is therefore unlikely to impact any EPBC Act-listed flora species within the study area. As there is unlikely to be a significant impact (DEWHA 2009) to threatened flora species, a Referral under the EPBC Act is not recommended.

6.2. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* lists threatened flora and fauna species to provide for protection and management. The removal of threatened species or communities, or protected flora under the FFG Act from public land requires a licence under the Act. This licence may be obtained from DEECA. However, the FFG Act has only limited application to private land.

No species listed as threatened under the FFG Act were observed during the current investigation. Therefore, the responsible authority does not need to consider these species under the provisions of this legislation.

6.3. EE Act

Under the *Environment Effects Act 1978*, proponents are required to prepare a Referral to the state minister for Planning that will determine whether an Environment Effects Statement (EES) will be required for the project. Criteria related to flora include the following:

- Potential long-term loss of a significant proportion (1 to 5% depending upon conservation status of species concerned) of known remaining habitat or population of a threatened species in Victoria;
- Potential long-term change to the ecological character of a wetland, where that wetland is Ramsar-listed, or listed in 'A Directory of Important Wetlands in Australia';
- Potential major effects on the biodiversity of aquatic ecosystems over the long term; and
- Potential significant effects on matters listed under the *Flora and Fauna Guarantee Act 1988*.

One or a combination of these criteria may trigger a requirement for a Referral to the Victorian Minister for Planning who will determine whether an EES will be required.

The proposed works do not meet any of these criteria and a Referral to the state Minister for Planning is therefore not warranted.

7. Conclusions

The following five target flora species were not recorded within the study area during the targeted flora surveys:

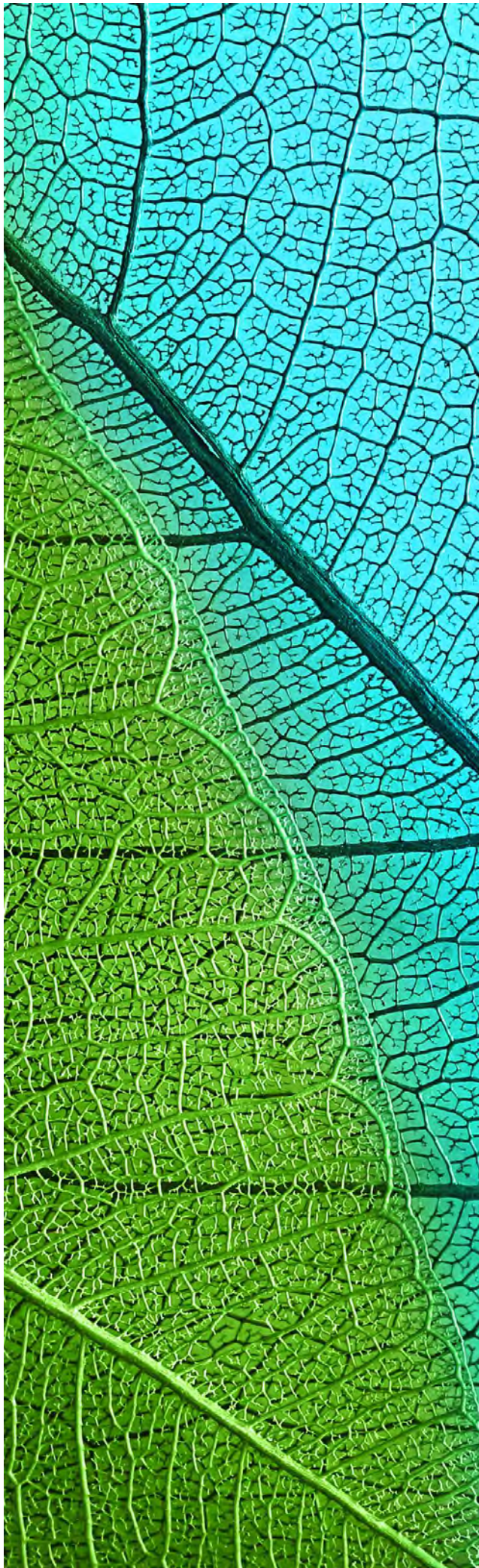
- River Swamp Wallaby-grass (**EPBC Act: Vulnerable**);
- Swamp Fireweed (**EPBC Act: Vulnerable**);
- Swamp Everlasting (**EPBC Act: Vulnerable; FFG Act: Critically Endangered**);
- Curly Sedge (**FFG Act: Endangered**); and
- Swamp Diuris (**FFG Act: Endangered**).

Therefore, it is unlikely there are any impacts to the above-mentioned listed flora species as part of this proposal and as such, there are no associated legislative implications.

8. References

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Appendix 4: Blue-winged Parrot Assessment



Portland Energy Park

Detailed Assessment for the Blue-winged Parrot

**Prepared for Pacific Green
Portland Energy Park Pty Ltd**

July 2024
Report No. 23146 (7.2)



**Nature
Advisory**

(Formerly Brett Lane & Associates Pty Ltd)

5/61-63 Camberwell Road
Hawthorn East, VIC 3123
PO Box 337, Camberwell VIC 3124
(03) 9815 2111
www.natureadvisory.com.au

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1. Introduction

Pacific Green Portland Energy Park Pty Ltd engaged Nature Advisory to undertake a flora and fauna assessment of a 122-hectare area of freehold land located at Portland and Portland East. The specific area investigated, referred to herein as the 'study area' comprised the property at Lot 1 Madera Packet Road ('Portland West'), 305 and 303 Madeira Packet Road and Allotment 61A Madera Packet Road ('Portland East'), Portland. This assessment is required to support applications for authority approvals for a utility scale Battery Energy Storage System (BESS).

During a field assessment in July 2023, Blue-winged Parrots (*Neophema chrysostoma*) were recorded at Allotment 61A Madera Packet Road (Portland East) in small groups (5-15 birds) foraging in areas of introduced pasture and native rush (*Juncus* sp.). In January 2024, Blue-winged Parrot was again recorded foraging in the same area of 61 A Madera Packet Road, Portland. The observation of this foraging habitat is consistent with known foraging habitat of this species (Higgins 1999).

The most recent published literature suggests that the Blue-winged Parrot has undergone a significant population decline in recent decades (Holdsworth et al. 2021). This was the basis of the species' recent listing as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 31st March 2023. There is currently no recovery plan to guide conservation efforts for the Blue-winged Parrot, nor is Nature Advisory aware of any referral process involving potential impacts to this species. It is understood that the most notable threats facing this species are habitat loss, degradation, fragmentation, and removal, and climate change.

The EPBC Act protects listed threatened species, ecological communities and migratory species that are defined as Matters of National Environmental Significance (MNES). Any impacts on these matters considered significant require the approval of the Australian Minister for the Environment. If there is a possibility of a significant impact on a MNES, a Referral under the EPBC Act should be considered.

The purpose of this report is to provide advice as to whether the current proposal is likely to constitute a significant impact on a MNES (Blue-winged Parrot) under the EPBC Act.

2. Existing information and methods

2.1. Sources of information

In addition to the Flora and Fauna Assessments (Nature Advisory 2023a), relevant information has been obtained from the following:

- Conservation advice for *Neophema chrysostoma* (Blue-winged Parrot) under the EPBC Act (DCCEEW 2023b)
- eBird (eBird 2021)
- *NatureKit* (DEECA 2023a)
- The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) *Protected Matters Search Tool* (DCCEEW 2023a)
- Victorian Biodiversity Atlas administered by the Department of Energy, Environment and Climate Action (DEECA 2023b)

2.2. Relevant ecology of the Blue-winged Parrot

Blue-winged Parrots are a small parrot indigenous to south-eastern Australia (Emison et al. 1987; Higgins 1999; Holdsworth et al. 2021). They are a highly mobile species and utilise a range of habitats. They tend to favour grasslands and grassy woodlands and are often found near wetlands. They are also observed in altered environments such as airfields, golf-courses and paddocks as well as agricultural land (DCCEEW 2023a).

Blue-winged Parrots are known to forage on seeds of a wide range of native and introduced grasses, herbs and shrubs (Higgins 1999). The species likely traditionally favoured a variety of foraging habitats including saltmarsh, heathland/sedgeland, grassy woodland, sparse grassland, and chenopod shrubland. Blue-winged Parrot appears to have adapted to forage more widely in modified environments and is known to forage in areas of cleared agricultural land dominated by exotic pasture grasses. The extent to which the species relies on these altered landscapes is unknown.

Blue-winged Parrots are partial migrants, with variable numbers of birds migrating across Bass Strait. There is a paucity of information about the movements of Blue-winged Parrots, especially regarding their wintering migration routes, however the species has historically been recorded in the search region year-round (DEECA 2023b; eBird 2023; Nature Advisory survey data 2023/24).

Blue-winged Parrots breed in Tasmania, southern Victoria and in the far south-east of South Australia, predominantly in Eucalypt forests and woodlands (Emison et al. 1987; Higgins 1999; Holdsworth et al. 2021). During the breeding season (spring/summer) they nest in tree hollows of live or dead trees. In Victoria, birds are known to breed mainly in heathy forests and woodlands and in wetter forests soon after fire or logging (Emison et al. 1987; Higgins 1999).

2.3. Threats and conservation actions

The most recent literature regarding the Blue-winged Parrot, summarised in *The Action Plan for Australian Birds 2020*, suggests that there is no obvious explanation for the species' decline. Habitat loss, degradation and fragmentation is considered to be a significant threat to the Blue-winged Parrot, in particular the loss of breeding habitat caused by clearing for large-scale agriculture in Tasmania (DCCEEW 2023a; Holdsworth et al. 2021). Most breeding and some non-breeding habitats on the mainland are protected within conservation areas (Holdsworth et al. 2021). Recommended

management actions include the protection of suitable breeding habitat and ecological management of other remnant habitat on private and public land (Holdsworth et al. 2021).

2.4. Desktop assessment of Blue-winged Parrot habitat in the region

A desktop assessment of the 'search region', defined here as an area with 20 kilometre radius from the boundary of the study area was undertaken to investigate the extent of suitable habitat for Blue-winged Parrot in the broader landscape. This information was used to gain clearer understanding of the likelihood of impacts associated with the proposal. A combination of satellite imagery, areas of mapped native vegetation, habitat distribution models (DEECA 2023a) and Blue-winged Parrot observation records (DEECA 2023b, eBird 2021) were used to indicate areas of suitable habitat.

2.5. Flora and fauna assessments

A field assessment of Allotment 61A Section 13 Parish of Portland and Lot 1 TP592015 Madera Packet Road was conducted on 17 and 18 July 2023. Additionally, 305 Madeira Packet Road was assessed on 9 and 10 January 2024 and 333 Madeira Packet Road was assessed on 7 March 2024. During these field assessments, the study area was surveyed on foot. Sites in the study area found to support native vegetation or with potential to support listed matters were mapped through a combination of aerial photograph interpretation and ground-truthing using ArcGIS Field Maps® (Esri) on a hand-held device. Species and ecological communities listed as threatened under the EPBC Act or protected/threatened under FFG Act (where these occurred on public land) were also mapped using the same method.

2.6. Roaming survey and ground-truthing of Blue-winged Parrot habitat in the region

A field assessment conducted on 11 and 12 January 2024 included a roaming survey for Blue-winged Parrots and ground-truthing areas of suitable habitat identified from a desktop analysis. During the roaming surveys an experienced observer travelled as a passenger along roadsides in a slow-moving vehicle with the windows down, listening and scanning for Blue-winged Parrots. If Blue-winged Parrots were observed the location, number of individuals and flight height was recorded. Ground truthing took place at random sites in agricultural areas and in areas indicated in the desktop assessment as important Blue-winged Parrot habitat. This included forest and woodland that could contain hollow bearing trees and wetlands where Blue-winged Parrots are known to forage and roost.

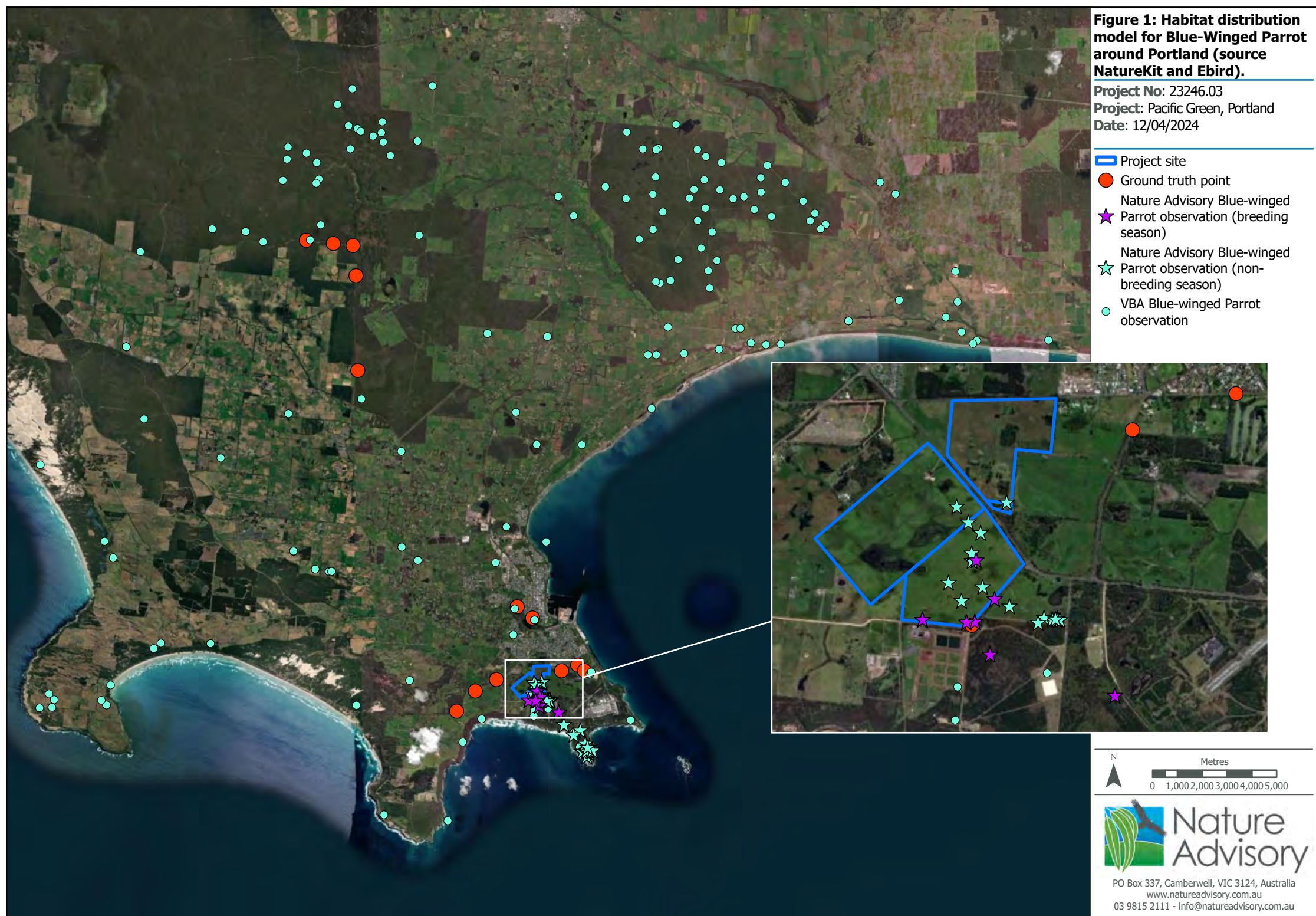
Figure 1: Habitat distribution model for Blue-Winged Parrot around Portland (source NatureKit and Ebird).

Project No: 23246.03

Project: Pacific Green, Portland

Date: 12/04/2024

- ▮ Project site
- Ground truth point
- ★ Nature Advisory Blue-winged Parrot observation (breeding season)
- ★ Nature Advisory Blue-winged Parrot observation (non-breeding season)
- VBA Blue-winged Parrot observation



N
Metres
0 1,000 2,000 3,000 4,000 5,000



PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
 03 9815 2111 - info@natureadvisory.com.au

3. Results

3.1. Habitat assessment

Blue-winged Parrot foraging habitat within the project area was considered marginal in quality and not in short supply throughout the region, much of which has been heavily modified through agricultural use. Records from the VBA and eBird (DEECA 2023b; eBird 2023) suggest that most Blue-winged Parrot observations within the region occur from remnant vegetation. This high-quality habitat was identified throughout the region (mostly occurring on public land) during field observations.

The project area has previously been cleared and has historically been subject to intensive grazing pressure. As such, native flora has largely been replaced with introduced species including common pasture grasses and associated agricultural weeds, which occur throughout the majority of agricultural land across the region. Some native rush (*Juncus* sp.) occurred sparsely in the south-eastern portion.

The project area falls within the core breeding range of the Blue-winged Parrot but does not itself support any breeding habitat for the species. Suitable breeding habitat was observed within adjacent remnant woodland to the south-east and throughout the surrounding region. This habitat predominantly occurs within conservation areas and is absent from the study area and adjacent roadside vegetation. As such, the species does not rely on the project area for breeding or roosting but is likely used by as foraging habitat by fledglings and breeding pairs.

3.2. Blue-winged Parrot observations from initial field surveys

During a field assessment conducted by Nature Advisory ecologists in July 2023, Blue-winged Parrots were recorded within the project area at Allotment 61A Madiera Packet Road in small groups (5-15 birds). The species was observed associating with areas almost entirely dominated by introduced pasture with a sparse cover of native rush. Small flocks of Blue-winged Parrots flushed while walking the study area on foot would either fly a short distance and continue foraging or circle briefly and return to similar vegetation within the project area. An estimated total of 30-40 birds were recorded within the project area during the field survey – a conservative estimate given the possibility of double-counting flushed birds that returned to forage in other parts of the project area.

The determination and subsequent delineation of Blue-winged Parrot foraging habitat within the project area encompassed areas supporting the highest cover of native rush where the species was observed foraging. Notably, similar habitat was observed throughout the surrounding landscape and no particular feature of the project area was identified as supporting high-quality foraging habitat for the Blue-winged Parrot. Had the species not been observed continuously foraging within the study area during the initial field assessment, the presence of marginal foraging habitat (areas supporting native rush) would have been noted but would have unlikely warranted further investigation given the wide availability of comparable foraging habitat throughout the broader landscape.

3.3. Desktop assessment of Blue-winged Parrot habitat in the region

Records of Blue-winged Parrot in the search region from the last 25 years were obtained from the VBA (DEECA 2024b) and the last five years from e-bird (e-bird 2024). While there were no previous records from the project area (likely reflecting a lack of survey effort on private land), there are numerous historical records from within 10 kilometres, mostly from areas supporting remnant vegetation on public land.

The majority of historical Blue-winged Parrot observations are from remnant native vegetation along the coast (such as along Nelson and Bridgewater Bays), coastal wetlands (south of Princes Highway), or inland forests including Cobboboonee National Park and Mt Clay State Forest. Interestingly, despite the

high number of VBA records from the region, the model does not show Cobboboonee National Park and Mt Clay State Forest as suitable habitat for the species. Historical records from these two tracts of remnant woodland likely indicate that these areas support suitable breeding habitat for Blue-winged Parrots.

The habitat distribution model (DEECA 2024a) identifies the project area (as well as much of the agricultural land around Portland) as having a medium habitat suitability value for the Blue-winged Parrot. The relatively high number of coastal observations are in accordance with the habitat distribution model for this species, predicting high habitat suitability values for areas of intact coastal vegetation and wetlands.

3.4. Subsequent roaming survey and ground-truthing of habitat in the region

In January 2024, Blue-winged Parrots were observed foraging at the site of the original (July 2023) observation. Additional observations were recorded of flying and perched Blue-winged Parrots within 1.2 kilometres of the project area. At least twenty Blue-winged Parrots, including juveniles, were observed within or nearby the study area during the January 2024 survey.

Blue-winged Parrots were observed foraging on exotic pasture species and common weeds including Yorkshire Fog (*Holcus lanatus*) and Sweet Vernal-grass (*Anthoxanthum odoratum*), Sheep Sorrel (*Acetosella vulgaris*) and Cats Ear (*Hypochaeris radicata*).

Ground-truthing indicated that the agricultural land throughout the region contained a cover of exotic pasture grasses and native rush similar to that of project area, and those areas supporting high numbers of Blue-winged Parrot records were predominantly wooded areas or pasture adjacent to wooded areas.

3.5. Additional Blue-winged Parrot observations during field assessments

During field assessments conducted by Nature Advisory in March 2024, Blue-winged Parrots were observed within the project area and throughout the surrounding region in a range of habitat types including both remnant native vegetation and highly disturbed areas.

The species was observed foraging and roosting in remnant coastal headland scrub and heathland/heathy woodland areas. Small flocks were observed foraging in exotic pasture, and other disturbed areas such as along quarry road and throughout the old Hanson quarry site, feeding on seeds of both native and introduced species demonstrating their adaptiveness to a wide variety of foraging habitats.

Blue-winged Parrots were also regularly observed flying throughout the Portland area, but no meaningful patterns of movement could be ascertained. On two separate occasions, once in the late afternoon and once in the early morning, birds were observed flying in and perching in old Eucalypts near the project area. Small groups and individuals would later disperse in different directions, providing no indication of any regular roosting or foraging areas. A small number of these birds flew towards the project area and later two small flocks in flight were observed descending on the project area to forage.

4. Discussion

The observations of Blue-winged Parrots in January and March 2024, and the presence of juveniles amongst the flocks observed during this period, indicates the species utilises habitat within the project area to forage during the breeding season. Repeat observations of Blue-winged Parrots within the project area during the winter and breeding seasons suggests the local population may exhibit some site fidelity, however, the reason for this is unclear given the highly disturbed nature of site and the availability of extensive areas of very similar habitat and broad utilisation of modified landscapes throughout the region.

Blue-winged Parrot foraging habitat within the project area is almost entirely devoid of traditional food sources such as native grasses, herbs and shrubs. These have been largely replaced with introduced pasture grasses and associated agricultural weeds – the ground layer across the site has been highly modified through a history of grazing pressure. The Blue-winged Parrot's utilisation of the project area was initially thought to be correlated with the sparse occurrence of native rush. However, further investigations found that the species was more commonly feeding on the seeds of exotic pasture grasses and common weeds. The Blue-winged Parrot's ability to survive in altered landscapes is a current research gap and understanding its foraging ecology is a research priority for this species, as noted in the relevant conservation advice (DCCEEW 2023a).

Considering the current knowledge gaps regarding the Blue-winged Parrot's population decline and foraging ecology, and the absence of a recovery plan for the species, the information and observations outlined above have been used to inform the significant impact assessment in the following section.

Impacts to Blue-winged Parrot from the project

The proposed action is being referred under the EPBC Act based on the definition of habitat critical to survival in the most recent conservation advice for Blue-winged Parrot, which includes 'foraging habitats found from coastal, sub-coastal and inland areas' (DCCEEW 2023a). Habitat meeting this description occurs within the project area and will be impacted by the proposed action. Given what is known of the species' foraging ecology, it has been understood the above definition implies that areas of pasture dominated by exotic species known to be utilised by Blue-winged Parrots as a foraging resource, may potentially constitute habitat critical to the survival of the species.

The land proposed for development has previously been cleared and has historically been subject to intense grazing pressure. Blue-winged Parrots were observed within the project area during winter and summer surveys by Nature Advisory ecologists, suggesting that this area is regularly utilised by the local population of the species. A population of at least 20 Blue-winged Parrots including juveniles was observed on two occasions within the study area.

The impacts of the proposed action on Blue-winged Parrot have been considered against the Significant Impact Guidelines for Vulnerable Species (DoE 2013b) in a separate MNES Report (Nature Advisory 2024).

It is considered unlikely that the proposed action will adversely affect habitat critical to the survival of the Blue-winged Parrot based on site observations as well as the known ecology of the species. Critically, the proposal avoids impacts to roosting and nesting habitat of the species, with disturbance restricted to foraging habitat, a resource that is locally abundant throughout the region.

Additionally, the proposed action will include the preparation of a stormwater management plan providing an opportunity to undertake revegetation of the project area using a diverse mix of locally appropriate native species to enhance feeding habitat for the Blue-winged Parrot. If new habitat

patches are established within the study area, as per the relevant conservation and recovery actions (DCCEEW 2023a), this will result in an overall improvement in the quality and extent of habitat for the species.

Revegetation works using indigenous species have already been undertaken along a 10 metre-wide buffer along the site's south-western boundary, to establish foraging habitat for Blue-winged Parrot with the added benefit of extending the current habitat around the site's perimeter for Rufous Bristlebird and Southern Brown bandicoot. The revegetation works aimed to establish a tall, dense shrub community similar to Damp Heathland (EVC 710) that is interspersed with clusters of rushes and sedges; these clusters were specifically incorporated to provide foraging locations for Blue-winged Parrot.

4.1. Summary

Assessment against the EPBC Act Significant Impact Guidelines found that the project is **unlikely** to have a significant impact on the Blue-winged Parrot (Nature Advisory 2024).

The information provided in this assessment is intended to inform the regulator for their decision-making process as to whether any impacts to the species are deemed significant and whether the project should be considered a controlled action or otherwise.

5. References

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Site Context Plan

2234 - Portland BESS

Proposed Site

- Portland North
- Portland East
- Portland West

Existing Features

- Roads
- Cadastral parcels
- 500 kV Transmission Line
- 66 kV Transmission Line
- 🏠 Adjacent Residenital Dwellings
- 🌬️ Wind Turbines
- Portland Township Boundary
- Alcoa Portland Aluminium Smelter
- Bald Hill Water Reservoir
- Cape Sir William Substation
- Port
- Portland Cemetery
- Portland Rifle Club
- Portland Waste Transfer Centre
- Portland Water Reclamation Plant
- Portland Wind Farm Substation
- Seawinds Nursery
- Switchyard (ALCOA)



Drawn by: AP

Approved by: BG

0 1 2 km





PROJECT BOUNDARIES AND AREAS

0 100 200 300 400 M

LEGEND:

-  PROPERTY BOUNDARIES
-  PARCEL BOUNDARIES WITHIN PROPERTIES
-  PROJECT SITE BOUNDARIES (SUBJECT PROPERTIES WITH ADJACENT ROAD RESERVE)
-  PROJECT DEVELOPMENT AREA (MAXIMUM EXTENT OF DEVELOPMENT AND ASSOCIATED DISTURBANCES)
-  ADDITIONAL LANDSCAPING AREA (MAY BE USED IN ADDITION TO THE PROJECT DEVELOPMENT AREA FOR PLANTING, AS PART OF PROJECT DELIVERY)





PROPOSED DEVELOPMENT - FUNCTIONAL LAYOUT

LEGEND:

	PROJECT SITE BOUNDARIES (SUBJECT PROPERTIES WITH ADJACENT ROAD RESERVE)		SEWER MAIN		TRANSMISSION LINES (CONNECTING TO EXISTING LINES)
	PROJECT DEVELOPMENT AREA (MAXIMUM EXTENT OF DEVELOPMENT AND ASSOCIATED DISTURBANCES)		EPHEMERAL WATER AREAS		TRANSMISSION TOWER
EXISTING ELEMENTS		PROPOSED DEVELOPMENT			ACCESS PATH
	TRANSMISSION LINES 500KV		BATTERY PARK		EXTENT OF BENCHING
	TRANSMISSION TOWERS FOR 500KV LINES		SWITCHING STATION		DRAINAGE PONDS AND LINES
			COLLECTOR STATION (NUMBER CORRESPONDS TO EACH BATTERY PARK)		LANDSCAPED AREA (FOR VISUAL IMPACT AMELIORATION)

Proposed Battery Energy Storage System, Portland

Cultural Heritage Management Plan 19677

Draft Report

Sponsor: Pacific Green

Heritage Advisor: Leah Tepper & Zachary Carter

Author: Zachary Carter, Emma Moore & Briannon Dudek



Acknowledgement of Country

We respect and acknowledge the Gunditjmara, their lands and waterways, their rich cultural heritage and their deep connection to Country, and we acknowledge their Elders past and present. We are committed to truth-telling and to engaging with Gunditj Mirring Traditional Owners Aboriginal Corporation to support the protection of their culture and heritage. We strongly advocate social and cultural justice and support the Uluru Statement from the Heart.

Cultural warning

Aboriginal and Torres Strait Islander readers are advised that this report may contain images or names of First Nations people who have passed away.

Proposed Battery Energy Storage System, Portland

Cultural Heritage Management Plan number: 19677

Complex Assessment

Draft report

Size of the activity area: Large

Sponsor: Pacific Green

Heritage advisor: Leah Tepper

Authors: Leah Tepper, Briannon Dudek, Emma Moore & Zachary Carter

Aboriginal places within activity area:

GML Heritage Victoria Pty Ltd

ABN 31 620 754 761

DATE

Report register

The following report register documents the development of this report, in accordance with GML’s Quality Management System.

Job No.	Issue No.	Notes/Description	Issue Date
3354	1	Draft Report	Date
3354	2	Final Report	Date

Quality assurance

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

Indigenous cultural and intellectual property

We acknowledge and respect the inherent rights and interests of the Gunditjmara in Indigenous Cultural and Intellectual Property. We recognise that Aboriginal and Torres Strait Islander people have the right to be acknowledged and attributed for their contribution to knowledge but also respect their rights to confidentiality. We recognise our ongoing obligations to respect, protect and uphold the continuation of Gunditjmara rights in the materials contributed as part of this project.

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Abbreviations

ACHRIS	Aboriginal Cultural Heritage Register and Information System
AOP	Area of Potential (for archaeological deposits)
BESS	Battery energy storage system
BYDA	Before You Dig Australia
CHMP	Cultural Heritage Management Plan
DGPS	Digital Global Positioning System
DPC	Department of Premier and Cabinet
EVC	Ecological Vegetation Class
FP—SR	First Peoples — State Relations
GDA94	Geodetic Datum Australia 1994
GMTOAC	Gunditj Mirring Traditional Owners Aboriginal Corporation
GMU	Geomorphological Unit
HA	Heritage Advisor
LDAD	Low Density Artefact Distribution
MT	Machine Trench
NOI	Notice of Intention
PGC	Primary Grid Coordinate
RAP	Registered Aboriginal Party
SGD	Significant Ground Disturbance
STP	Shovel Test Pit
SU	Survey Unit
TO	Traditional Owner
TP	Test Pit
VAHC	Victorian Aboriginal Heritage Council
VAHR	Victorian Aboriginal Heritage Register
VRO	Victorian Resources Online

Part 2 – Assessment

3 Introduction

3.1 Reasons for preparing CHMP

This is a mandatory Cultural Heritage Management Plan (CHMP) under Section 46(1)(a) of the *Aboriginal Heritage Act 2006*. The Sponsor intends to install four battery energy storage system (BESS) parks within the activity area.

The proposed activity is a high impact activity under r46(1)(b)(xxvii)(D) - utility installation affecting an area exceeding 25 square metres of the Aboriginal Heritage Regulations 2018.

The activity area is in an area of cultural heritage sensitivity under r.25(1) (registered Aboriginal cultural heritage places [REDACTED] and under r41(1) (an area associated with culturally sensitive sand sheets (Bridgewater Formation)) of the Aboriginal Heritage Regulations 2018.

3.2 Notifications

In accordance with s.54(1)(a) and (b) of the *Aboriginal Heritage Act 2006*, a Notice of Intent (NOI) to Prepare a CHMP was submitted to the Secretary, Department of Premier and Cabinet (DPC), and GMTOAC on 14 July 2023 (Table 6-1). In accordance with s.54(1)(d) of the *Aboriginal Heritage Act 2006* an NOI was submitted to Glenelg Shire Council Local Government Area on 14 July 2023.

The Victorian Aboriginal Heritage Register (VAHR) allocated CHMP number 19776 to this assessment.

3.3 Location of activity area

The activity area comprises the entirety of two large allotments and small sections of four additional allotments located along Madeira Packet Road, Portland. The cadastral details for the activity area are detailed in Table 3-1. The activity area is approximately 4 kilometres south of the Portland township. The proposed switching station to be constructed as part of the works will help support future energy needs within Portland and the western district of Victoria.

Table 3-1 Cadastral information for the activity area

Cadastral details of the activity area	
Address	Maderia Packet Road, Portland 305 Maderia Packet Road, Portland 33 Maderia Packet Road, Portland 606 Maderia Packet Road, Portland
Local Government Authority	Glenelg Shire Council
Standard Parcel Identifier	1\TP592015 61A~13\PP3414 5A~13\PP3414 2\LP120030 1\LP120030 1\TP820935
Parish	Portland
Planning Zone	Industrial Zone 2 [IN2Z] Farming Zone - Schedule 1 [FZ1]
Coordinates (GDA2020 MGA (Zone 54))	E552449, N5751887
VicRoads	88 B8 (ed. 8) 88 B7 (ed. 8)

3.4 Sponsor

Company: Pacific Green Energy Park Portland Pty Ltd

ABN: 73 667 082 911

Contact: James Segundo

Address: Level 4, 459 Church Street Richmond VIC 3121

Number: 0432 034 631

Email: james.segundo@pacificgreen.com

3.5 Sponsors Agent

Company: Cogency

ABN: 79 606 451 101

Contact: Billy Greenham

Address: Level 6 West/84 William Street, Melbourne VIC 3000

Number: 0422 424 144

Email: billy@cogencyaustralia.com.au

3.6 Heritage advisors

Leah Tepper BArch (Hons)

Leah has over 11 years of experience in cultural heritage management in Victoria. Leah has been involved in Aboriginal Cultural Heritage assessments, archaeological surveys, subsurface testing, monitoring and salvage excavations around metropolitan Melbourne and Victoria. Leah has authored and co-authored numerous consultant reports, including CHMPs, Due Diligence reports, Conservation Management Plans, Cultural Heritage Permits, Preliminary Aboriginal Heritage Tests and Heritage Management Plans. She has undertaken a variety of Aboriginal cultural heritage research for small, medium and large-scale projects across Victoria for a variety of clients from the government and private sectors.

Her qualifications include a Bachelor of Archaeology with honours from La Trobe University, Bundoora (2013) where she undertook a project involving a typology of 19th century clay tobacco pipes found in Victoria, Australia. Her skills include Aboriginal and historical place identification and recording, survey and subsurface archaeological testing and excavation, project research and report writing. Leah is a listed HA under the Victorian *Aboriginal Heritage Act 2006*, and is a fully qualified archaeologist.

Zachary Carter BA, MArchaeolSc(Adv)

Zachary has over six years of experience in the archaeology sector. Zachary has been involved in and lead numerous Aboriginal Cultural Heritage assessments, archaeological surveys, subsurface testing and salvage excavations for small, medium and large projects across Victoria for a variety of clients and industries. Prior to working with specifically in the cultural heritage sector within Victoria, he engaged in archaeological research within and outside of Australia, predominately throughout Western Europe and South-East Asia.

Zachary completed a Bachelor of Arts degree with a double major in Archaeology and History from Monash University. He then went on to complete a Masters of Archaeological Science (Advanced) through the Australian National University, where he specialised in Forensic Archaeology and Zooarchaeology with a thesis focusing on Colonial Tasmanian dietary practises through skeletal analysis. He is a listed heritage advisor under the *Aboriginal Heritage Act 2006* and is a fully qualified archaeologist.

Emma Moore BA(Archaeology)(Hons.)

Emma has over four years' experience working under the *Aboriginal Heritage Act 2006* and the *Heritage Act 2017*. Emma has been involved in a range of heritage projects including Cultural Heritage Management Plans, Archaeological Management Plans, Historical Impact Statements, Cultural Values Assessments and Historical Archaeological Assessments.

While completing her studies, Emma focused predominantly on sustainable and community focused cultural heritage management and archaeology. In 2019 Emma received New Colombo Plan funding to go to Myanmar and learn about the impacts of development, global politics and tourism on UNESCO World Heritage sites. Emma completed her Honours thesis in 2022 at La Trobe University, analysing population and density in ancient Sri Lanka. She is a listed Heritage Advisor under the *Aboriginal Heritage Act 2006*.

Briannon Dudek BA(Archaeology)(Hons.)

Briannon is a heritage professional and archaeologist who has over four years' experience in Aboriginal archaeology and heritage management. Briannon has worked under the *Aboriginal Heritage Act 2006*. She has produced CHMPs and Aboriginal Cultural Heritage Due Diligence Assessments (ACHDDA) and experience with stone artefact analysis. Briannon graduated with a Bachelor of Archaeology (Honours) from La Trobe University in 2023 and is a listed Heritage Advisor under the *Aboriginal Heritage Act 2006*.

3.7 Registered Aboriginal Party

The Registered Aboriginal Party (RAP) for the region in which this activity area is located is the Gunditj Mirring Traditional Owner Aboriginal Corporation, which represents the Gunditjmara and their Country. The responsibility for appointing RAPs lies with the Victorian Aboriginal Heritage Council (VAHC). RAPs have legislated responsibility under the *Act* for the protection and management of their cultural heritage.

The RAP elected to evaluate the plan on 27 July 2023 (Appendix 2).

3.8 Activity Advisory Group

An Activity Advisory Group was not appointed by the Secretary in relation to the CHMP.

4 Activity Description

The sponsor proposes to develop four battery energy storage system (BESS) 'parks' and electricity switching station within the activity area. The battery parks and switching station will be accessed from Maderia Packet Road, which bisects the activity area on its north-eastern extent. The proposed 'Portland Energy Park' will result in impacts to under half of the activity area. The western extent of the activity area contains a wetland which increases and decreases substantially in size depending on rainfall. The wetland and the Wannon Water sewer pipeline (running north-south through the site) creates a construction boundary with no infrastructure to be built in this western area, and instead the wetland will be rehabilitated (via fencing to exclude grazing stock and replanting) as part of this project. Fill will be imported to raise the surface level of all construction areas.

The four discreet 250MW BESS parks areas will be constructed in the north of the activity area. Upon the imported fill benches, individual battery units (similar to a shipping container) will be located on individual concrete slabs. Each BESS park will connect to a 500/33kV collector station in the centre of the activity area, that then connects to the primary 500kV switching station via overhead distribution lines. All effort will be undertaken to align cabling to access tracks/roads and minimise disturbance outside of existing works areas. A total of five new transmission towers will be constructed to connect the switching station to existing transmission lines in proximity to the activity area. Access roadways are to be constructed throughout the activity area, primarily raised on imported fill. Vegetation will be planted inside some of the activity area's boundaries and within Madeira Packet Road reserve to act as screening. Vegetation planting will not involve any significant ground disturbance. A small dam in the north of the activity area will be expanded to catch run off from the benching areas (for water filtering), and a series of subsurface pipes for drainage will be installed to direct water away from the infrastructure. The majority of cabling for utilities will occur within the fill layer. Another two ponds will be constructed in the north and south of the activity area.

The works will be undertaken in stages within a continuous construction period of approximately 12-18 months, and laydown areas for equipment will be constrained to the activity footprint in Map 4-1.

The proposed works include:

- Benching of varying degrees (minimum 300mm to maximum 4.5m of fill) using imported fill to raise the ground surface for BESS parks, connector stations and switching station
- Construction of four BESS parks with corresponding connector stations, and a switching station

- Installation of assets such as electricity cabling, drainage and water hydrants for fire-fighting purposes
- Construction of connector roadways and walkways and hard landscaping
- Plantings for screening and revegetation of wetlands
- Excavation of existing dam to increase capacity

4.1.1 Likely impact on former or present land surfaces

Impacts to former buried land surfaces within the activity area include the following:

- Excavation and clearing of existing land surfaces to depths of approximately 200m in preparation for benching
- Installation of subsurface utilities to maximum depths of 700mm (however, the majority of cabling impacts will be within the fill layers)
- Excavation for approximately 150 800mm-diameter pylon footings to depths of 8m, for the switching station
- Excavations for a drain to depths of 3m
- Excavations to depths of 3m for two new ponds and to increase the current capacity of an existing dam
- Landscaping for roadways, carparks, walk ways and plantings to depths of approximately 500mm

Map 4-1 Plan of Activity

5 Extent of activity area

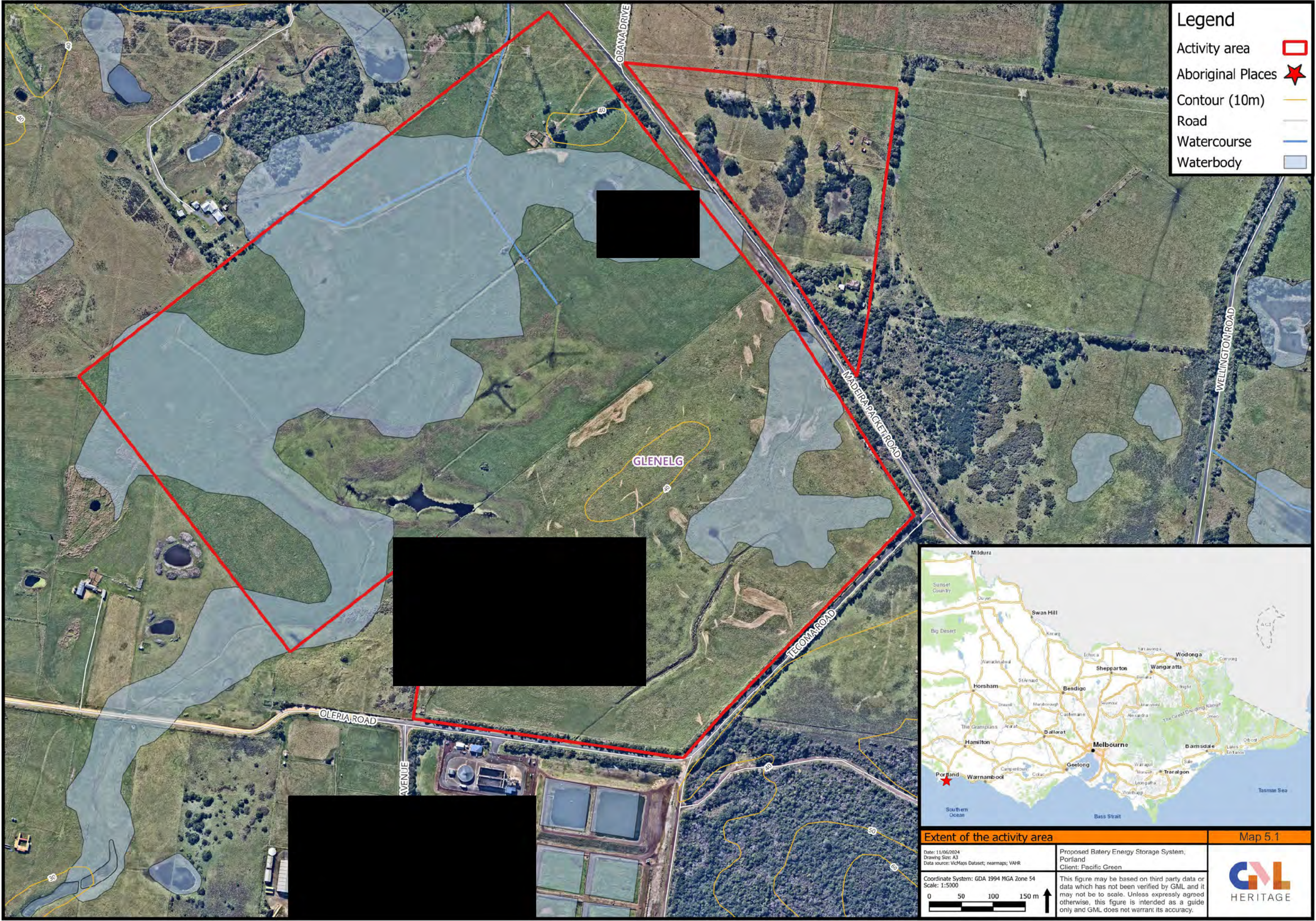
The extent of the activity area is shown in Map 51 and Photograph 5-1. It is located within a predominately farming area on the outskirts of the Portland township. The surrounding area where the activity area is located is becoming increasingly industrial, with a windfarm located directly to the south-west of the activity area and a waste management plant to the south.

The activity area is approximately 94.15ha and is an irregular shape, with Madeira Packet Road bisecting the activity area on its north-eastern extent in a north-west to south-east direction. The north-eastern triangle of the activity area is essentially separated by the rest of the activity area by Madeira Packet Road. The south-eastern boundary of the activity area is bounded by Tecoma Road to the east and Oleria Road to the south. Parcel boundaries create the edge of the activity area in other cardinal directions.

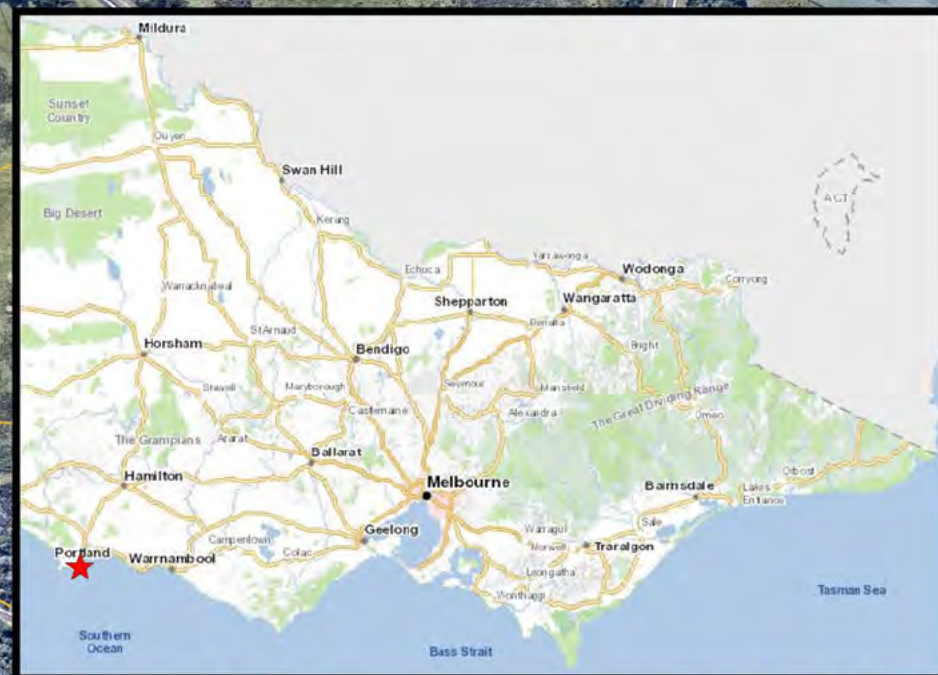
The western extent of the activity area contains a wetland which increases and decreases substantially in size depending on rainfall. Several man-made dams, channels and spoon drains which likely follow natural water flows are present in the activity area. The activity area is currently used for cattle farming and is densely grassed, and cattle stockyards are present in the northern extent of the activity area. There are four distinct dune landforms in the activity area, which are substantially higher in elevation than the rest of the activity area.

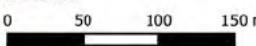


Photograph 5-1 Views of the large dune in the south of the activity area, facing south



- Legend**
- Activity area 
 - Aboriginal Places 
 - Contour (10m) 
 - Road 
 - Watercourse 
 - Waterbody 



Extent of the activity area		Map 5.1
Date: 11/06/2024 Drawing Size: A3 Data source: VicMaps Dataset; nearmaps; VHR		Proposed Battery Energy Storage System, Portland Client: Pacific Green
Coordinate System: GDA 1994 MGA Zone 54 Scale: 1:5000		This figure may be based on third party data or data which has not been verified by GML and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and GML does not warrant its accuracy.
		

6 Documentation of Consultation

6.1 Consultation in relation to the assessment

Table 6-1 Consultation in relation to the assessment

Date	Name and Title	Organisation	Nature of Consultation
14 July 2023	Zachary Carter (HA)	GML	Submission of Notice of Intent
	Secretary	DPC	
14 July 2023	Registrar	DPC	Assigns CHMP number 19677
	Zachary Carter (HA)	GML	
	Michael Mantara (Sponsor)	Pacific Green	
27 July 2023	Billy Bell (Cultural Heritage Officer)	GMTOAC	GMTOAC elected to evaluate the CHMP
	Leah Tepper	GML	
	Zachary Carter (HA)	GML	
15 August 2023	Leah Tepper (HA)	GML	Inception meeting
	Emma Moore (HA)	GML	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Rebecca Wardle (Sponsors Agent)	Cogency	
11 October 2023	Leah Tepper (HA)	GML	Standard assessment results meeting
	Emma Moore (HA)	GML	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
22 March 2024	Leah Tepper (HA)	GML	Design change meeting, complex assessment methodology meeting
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	

Date	Name and Title	Organisation	Nature of Consultation
18 June 2024	Michael Mantara (Sponsor)	Pacific Green	Complex assessment results meeting
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	
	Leah Tepper (HA)	GML	
	Emma Moore (HA)	GML	
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	

6.2 Participation in the conduct of the assessment

Table 6-2 Participation in the conduct of the assessment

Date	Name and Title	Organisation	Nature of Consultation
11 October 2023	Leah Tepper (HA)	GML	Standard assessment
	Emma Moore (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
6 to 9 February 2024	Leah Tepper (HA)	GML	Complex Assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
	Leah Tepper (HA)	GML	Complex assessment
	Andie Coulson (Archaeologist)	GML	

Date	Name and Title	Organisation	Nature of Consultation
13 to 16 February 2024	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
20 to 23 February 2024	Briannon Dudek (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
27 February to 1 March 2024	Emma Moore (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
5 to 8 March 2024	Emma Moore (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
13 to 15 March 2024	Briannon Dudek (HA)	GML	Complex assessment
	Zachary Carter (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
26 to 29 March	Leah Tepper (HA)	GML	Complex assessment
	Elise Nuridin (HA)	GML	
	Dean Lovett (Field Representative)	GMTOAC	
	Travis (Field Representative)	GMTOAC	
3 to 5 April 2024	Briannon Dudek (HA)	GML	Complex assessment
	Elise Nuridin (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
9 to 12 April 2024	Emma Moore (HA)	GML	Complex assessment
	Wendy Hernandez (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
	Leah Tepper (HA)	GML	Complex assessment

Date	Name and Title	Organisation	Nature of Consultation
6 to 9 May 2024	Catherine Munro (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
14 to 17 May 2024	Emma Moore (HA)	GML	Complex assessment
	Wendy Hernandez (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Ricky (Field Representative)	GMTOAC	

6.3 Consultation in relation to the conditions

Table 6-3 Consultation in relation to the conditions

Date(s)	Name and Title	Organisation	Nature of Consultation
18 June 2024	Leah Tepper (HA)	GML	Complex assessment results and management conditions meeting
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	James Segundo (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	
	Leah Tepper (HA)	GML	Management conditions meeting
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	

6.4 Summary of outcomes of consultation

Part 3 Desktop Assessment

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7 Desktop Assessment

The following section contains the results of the Desktop Assessment. The Desktop Assessment was prepared in accordance with Regulation 61 and Clause 8(1), Schedule 2 of the Aboriginal Heritage Regulations 2018.

7.1 The Geographic Region

The geographic region for the activity area has been selected to represent a range of landforms and resources that would be accessible from the activity area. The geographic region is within Koonang Mirring (Sea Country) and is defined by the coastline to the south which intersects with Wattle Hill Creek in the northeast. The geographic region then follows Wattle Hill Creek to where it intercepts with Bridgewater Road in the north. The geographic region then follows Bridgewater Road as its western border before it traverses back to the coastline in the south. The closest major watercourse is Wattle Hill Creek which forms into the Fawthrop Lagoon, approximately 2.5 km north of the activity area. However, the portions of the activity area and the surrounding geographic region contain areas subject to inundation which may have provided potable freshwater sources. The geographic region is shown in Map 71.

7.2 Landforms and geomorphology of the activity area

7.2.1 Landforms

A land survey completed by Gibbons and Downes (1964) of South Western Victoria identified the whole of the activity area as being on the Nelson land system, and comprising transgressive dune sheets and ridges of Pleistocene and Holocene age and swampy plains (Gibbons & Downes, 1964, p. 28). This general characterisation of the area was later supported by the findings of Rowan et al. (2000) wherein the region was classified as plains with coastal (dune) complexes. The north-western extent of the activity area can be seen to reflect the swampy plains landform, with a large area of inundation covering most of the area. The area of inundation expands and contracts depending on rainfall. A smaller area of inundation is also present in the eastern corner of the activity area. The balance of the activity area comprises dune ridges of varying heights. A large, prominent dune is present in the centre of the activity area, with a smaller dune to the south-west. Two other dunes are located at the northern-most point of the activity area and eastern edge.

7.2.2 Geomorphological units

The eastern side of activity area is situated entirely within the geomorphological unit Karst Plains with Depressions (Warrnambool) (GMU 6.2.3) and the western side of characterised by Plains with ridges (Follett) (GMU 6.2.1) (Map 7-1). These GMUs are present throughout Southwest Victoria and specifically associated with Portland, Warrnambool, Port Campbell and into the southwest of the Glenelg Hopkins CMA region (Victorian Resources Online, 2020).

GMU 6.2.3 (Karst Plains with Depressions (Warrnambool)) features a limestone plain which exhibits karstic features such as prominent sinkholes, caves, and springs due to bedrock weathering. A karst is a type of landscape formed by the dissolution of soluble rocks like limestone, dolomite, or gypsum over a long time. Karst landforms are characterised by unique features such as sinkholes, caves, underground rivers, and rugged terrain. Rainwater and groundwater react with these rocks, gradually wearing them away, creating these distinctive landforms (NSW Environment and Heritage, 2023). The associated soil types found in GMU 6.2.3 are deep sands overlaying clay, with the depth of sand varying in some areas.

The GMU 6.2.1 (Plains with ridges (Follett)) features sand sheets and dunes with crests, slopes, and associated plains with little relief (approximately 5m), and poorly defined surface drainage. Slopes are level to gently inclined and dominated by aeolian sands and silts, with swamps also prominently occurring within subdued plains. Generally acidic and sandy soils are found on dunes and occasionally on sandy plans, where brown, yellow and grey texture contrast soils are dominant within this GMU (6.2.1) (Victorian Resources Online, 2020).

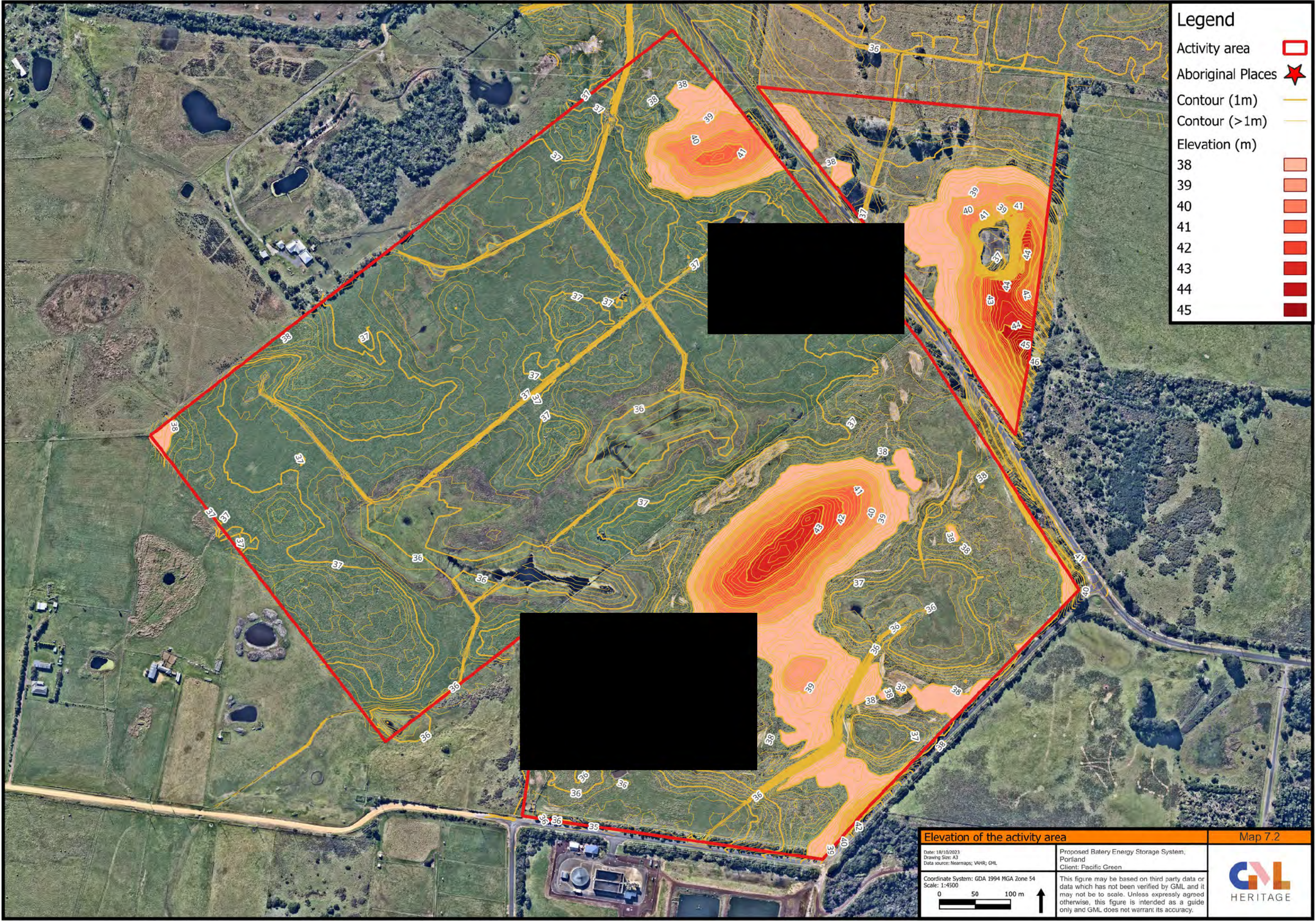
7.2.3 Geological units

Two geological units have been previously identified within the extent of the activity area: the Bridgewater Formation (Qxr) and the Molineaux Sand (Qxm) (Map 7-2).

The activity area partially sits on the Bridgewater Formation (Qxr) geological unit, which comprises a series of calcareous coastal dune ridges along the coastline from South Australia to Warrnambool, Victoria (Earth Resources, 2021). This formation, dating back to the Pleistocene era, consists of limestone derived from the shells and skeletons of marine organisms, which have eroded into sand and deposited over the basalts and tuff of the Newer Volcanic Group (Lipar & Webb, 2015, p. 83). Particularly notable is the Nelson Bay Formation within the Bridgewater Formation, which is approximately 30 meters thick and was likely deposited during the Early to Middle Pleistocene period (ca.2.58 million years ago to ca.781,000 years ago) (Lipar & Webb, 2015, p. 82).

The rest of the activity area is characterised by the Molineaux Sand (Qxm) geological unit, consisting of aeolian dune sand, overlays parts of the Bridgewater Formation. These

sands formed during the Pleistocene to Holocene periods (approximately 2.58 million years ago to the present) (Earth Resources, 2021).



Legend

- Activity area
- Aboriginal Places
- Contour (1m)
- Contour (>1m)
- Elevation (m)
 - 38
 - 39
 - 40
 - 41
 - 42
 - 43
 - 44
 - 45

Elevation of the activity area

Date: 18/10/2023 Drawing Size: A3 Data source: Nearmaps; VAHR; GML Coordinate System: GDA 1994 MGA Zone 54 Scale: 1:4500 0 50 100 m	Proposed Battery Energy Storage System, Portland Client: Pacific Green This figure may be based on third party data or data which has not been verified by GML and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and GML does not warrant its accuracy.	Map 7.2
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7.3 Pre-settlement flora and fauna

The activity area is part of the Glenelg Plain bioregion. The following description of the pre-colonisation vegetation is based on ecological vegetation classes (EVCs), which are commonly used to classify vegetation in southern Australia. Information has been drawn from various sources, including Oates and Taranto (2001), EVC / Bioregion benchmarks for vegetation quality assessment and the pre-colonisation (pre-1750) and 2005 EVC mapping available in NatureKit (Department of Energy, Environment and Climate Action, 2023).

As outlined in NatureKit, the current activity is situated within EVC 650 which is a mosaic EVC consisting of *Heathy Woodland* (EVC 48), *Damp Heathy Woodland* (EVC 793) and *Damp Heathland* (EVC 710) (Department of Energy, Environment and Climate Action, 2023).

Before European settlement, this EVC (650) would have consisted of a tall, damp, heathy woodland characterized by a diverse overstorey of mixed eucalypts, including Rough-barked Manna Gum (*Eucalyptus viminalis subsp. cygnetensis*), Messmate Stringybark (*Eucalyptus obliqua*), and Swamp Gum (*Eucalyptus ovata*). The dense heathy understory is dominated by Prickly Tea-tree (*Leptospermum continentale*), Silver Banksia (*Banksia marginata*), and Scrub Sheoak (*Allocasuarina paludosa*). Additionally, the understory may contain tea-trees, beard-heaths, and other medium and small shrubs such as Small Grass-trees. Native peas, sedges, rushes, scramblers, climbers occasionally make up the diverse ground layer (Department of Energy, Environment, and Climate Action, 2023).

The combination of this vegetation creates a rich and diverse habitat, supporting a wide array of fauna within this ecosystem. A comparison of pre-1750s EVCs and the 2005 EVCs shows that the activity area has retained a significant amount of native vegetation (Department of Energy, Environment and Climate Action, 2023). This indicates that there has not been substantial land clearing and disturbance, and there may be potential for in situ Aboriginal cultural heritage material.

7.4 Search of the Victorian Aboriginal Heritage Register

A search of the Victorian Aboriginal Heritage Register was conducted on 3 April 2024 by Emma Moore, GML. The search of Aboriginal places within the geographic region is used to form a representative sample of places that may be present in the activity area.

7.5 Aboriginal places in the geographic region

A total of 314 Aboriginal places comprised of 394 place components have been recorded within the geographic region. Two Aboriginal places have also been previously recorded in the activity area.

The geographic region is highly sensitive and contains artefact scatters, Low Density Artefact Distributions (LDADs¹), earth features, shell middens, and a quarry. Table 7-1 provides an overview of the number of Aboriginal place and component types recorded across the geographic region.

Table 7-1 List of Aboriginal places within the geographic region

Aboriginal Place Component Type	Number of Component Types
Shell Midden	112
LDADs	56
Artefact Scatters	40
Earth Features	24
Quarry	1

Aboriginal places within the activity area

Three previously recorded Aboriginal places are present within the activity area. Two artefact scatters [REDACTED] are located in the southwest and one [REDACTED] is located in the northeast of the current activity area. The primary raw material represented within these artefact scatters is flint, with one chert artefact also present. Two of these artefact scatters, [REDACTED] were located on the high point of dune landforms within the activity area. The

¹ A Low Density Artefact Distribution (LDAD) is the occurrence of stone artefacts at densities of up to 10 counted artefacts in an area of approximately 10x10 metres including within a single test pit of ≤1m².

other artefact scatter [REDACTED] was identified in an area that is subject to inundation. Aboriginal places [REDACTED] were registered prior to the *Aboriginal Heritage Act* 2006 so the information provided is limited. It appears they were registered opportunistically, as there are no associated archaeological reports. Further information regarding these places is in Table 7-2.

Table 7-2 Aboriginal places within the activity area

VAHR No.	Place Name	Place Type	Location
[REDACTED]	[REDACTED]	Artefact Scatter	Within AA
[REDACTED] is an isolated flint scraper located on the surface near the southern extent of the eastern parcel of the activity area on the upper slope of a coastal dune undulating landform. This Aboriginal place was recorded in 2005 and by today's terminology would be classed as an LDAD. The isolated artefact was collected at the time of recording.			
[REDACTED]	[REDACTED]	Artefact Scatter	Within AA
[REDACTED] is a surface artefact scatter consisting of one chert flake and three flint flakes located near the centre of the eastern parcel of the activity area. The artefact scatter is located on a high point on an inland dune landform surrounded by wetlands.			
[REDACTED]	[REDACTED]	Artefact Scatter	Within AA
[REDACTED] is an isolated flint flake located on the exposed surface of a dune landform. This site was severely eroded and been damaged through pedestrian, vehicular, and horse trampling activities.			

Aboriginal places within 1km of the activity area

A search of registered Aboriginal places within a 1km radius of the activity area identified a total of 50 Aboriginal places, 45 of which were recorded as artefact scatters, four LDADs, and one earth feature/shell midden. Summaries of these Aboriginal places are detailed below in Table 7-3.

The abundance of artefact scatters and other registered Aboriginal places within this search radius attests to the sensitivity of landforms in the area, particularly within dune landforms and other high points in the landscape.

Table 7-3 Aboriginal places within 1km of the activity area

VAHR No.	Place Name	Place Type	Distance From AA
[REDACTED]	[REDACTED]	Artefact Scatter	200m south
[REDACTED] is a surface artefact scatter containing 30 flint flakes and two pebble cores located 200 m south of the activity area on a dune ridge landform. This site was recorded in 1979 by the Victorian Archaeological Survey due to the proposed construction of the Alcoa Aluminium Smelter. The original site card suggests that this is the site of a quarry, but this has not been recorded on ACHRIS.			
[REDACTED]	[REDACTED]	Artefact Scatter	290m south

VAHR No.	Place Name	Place Type	Distance From AA
	[REDACTED] is an isolated subsurface silcrete artefact. The artefact scatter was recorded at a depth between 200-300mm at the base of a slightly sandy rise. By today's terminology, this artefact scatter would be classed as an LDAD.		
	[REDACTED]	Artefact Scatter	321m south
	[REDACTED] is an artefact scatter consisting of one surface artefact and two subsurface artefacts identified at a depth of 600mm, located on a gentle sandy rise. The surface artefact is a flint core while the two subsurface artefacts are one silcrete flake and one quartzite core. By today's terminology, this artefact scatter would be classed as an LDAD.		
	[REDACTED]	Artefact Scatter	377m south
	[REDACTED] is a surface artefact scatter containing one flint core, one flint scraper and one chert core. The artefact scatter was located on the lower slope of a disturbed coastal dune. By today's terminology, this artefact scatter would be classed as an LDAD.		
	[REDACTED]	Artefact Scatter	457m south
	[REDACTED] is a surface artefact scatter containing one basalt grindstone, two flint scrapers, one flint core, one flint flake and one piece of flint debitage. The artefact scatter is located on the upper slope of a sand sheet landform.		
	[REDACTED]	Artefact Scatter	492m east
	[REDACTED] is a surface artefact scatter consisting of ten flint/chert stone flakes. The artefact scatter is located within a bare, ploughed paddock within an undulating dune landform.		
	[REDACTED]	Artefact Scatter	560m east
	[REDACTED] is a surface artefact scatter consisting of a single grey flint block fragment identified within a ploughed paddock on an undulating dune landform.		
	[REDACTED]	Artefact Scatter	570m east
	[REDACTED] is a surface artefact scatter consisting of a single grey flint block fragment with edgewear damage and cortex present, identified within a ploughed paddock on an undulating dune landform.		
	[REDACTED]	Artefact Scatter	580m east
	[REDACTED] is a surface artefact scatter consisting of a single grey flint block fragment with edgewear damage and cortex present, identified within a ploughed paddock on an undulating dune landform.		
	[REDACTED]	Artefact Scatter	610m south
	[REDACTED] is a surface artefact scatter consisting of 10 flint artefacts, which consist of flakes, a backed blade, and a scraper over a 150x50m area. An additional salvage excavation identified a further 110 stone artefacts attributed to this registered place. These artefacts were identified within a 2x2m trench to depths of 900mm within a relatively flat, to slightly undulating sandy plain.		
	[REDACTED]	Artefact Scatter	615m east
	[REDACTED] is a surface artefact scatter consisting of approximately 25 irregular light grey flint flakes and one large unworked core over an area of 10x20m. The soil was described as a light grey sand overlying dark grey sandy soil within an undulating dune ridge.		

VAHR No.	Place Name	Place Type	Distance From AA
		Artefact Scatter	650m east
	is a surface artefact scatter consisting of approximately 30 irregular and decoration flakes. It was noted that much of the material appears to have been mixed and redeposited over an area of 30x30m. The soil was described as a loose, light grey sand on a sloping dune ridge.		
		Artefact Scatter	680m east
	is a surface artefact scatter consisting of a single reduction flake of light grey flint located within an undulating paddock.		
		Artefact Scatter	690m east
	is a surface artefact scatter consisting of a single reduction flake of light grey flint located within an undulating paddock.		
		Artefact Scatter	700m east
	is a surface artefact scatter comprising a single waste flake fragment of grey flint located within an undulating paddock.		
		Artefact Scatter	705m east
	is a surface artefact scatter comprising a single grey flint waste flake located within an undulating paddock.		
		Artefact Scatter	710m east
	is a surface artefact scatter comprising a single bi-directional grey flint core located within an undulating paddock.		
		Artefact Scatter	730m east
	is a surface artefact scatter comprising a single waste flake fragment of grey flint located within an undulating paddock.		
		Artefact Scatter	745m east
	is a surface artefact scatter consisting of a single reduction/cortical flake of light grey flint located within an undulating paddock.		
		Artefact Scatter	765m east
	is a surface artefact scatter consisting of a single reduction/cortical waste flake of grey flint located within an undulating paddock.		
		Artefact Scatter	770m east
	is a surface artefact scatter consisting of a single grey, caramel stained, flint waste flake with evidence of platform preparation located within an undulating paddock.		
		Artefact Scatter	780m east
	is a surface artefact scatter consisting of a single reduction/cortical waste flake of grey flint exposed within a road cutting.		
		Artefact Scatter	790m east
	is a surface artefact scatter consisting of a waste flake and a block fragment of grey flint located within an undulating paddock.		
		Low Density Artefact Distribution	790m south

VAHR No.	Place Name	Place Type	Distance From AA
	[REDACTED] is a LDAD consisting of a surface flint medial flake. No further information about this place has been provided.		
	[REDACTED]	Artefact Scatter	820m east
	[REDACTED] is a surface artefact scatter consisting of a block fragment of grey flint located within an undulating paddock.		
	[REDACTED]	Low Density Artefact Distribution	830m east
	[REDACTED] is a LDAD consisting of a surface flint angular fragment. No further information about this place has been provided.		
	[REDACTED]	Low Density Artefact Distribution	840m east
	[REDACTED] is a LDAD consisting of a surface flint unidirectional core. No further information about this place has been provided.		
	[REDACTED]	Artefact Scatter	840m east
	[REDACTED] is a surface artefact scatter consisting of a flaked basalt pebble located within an undulating paddock.		
	[REDACTED]	Earth Feature/shell midden	840m south
	[REDACTED] is a shell midden and earth feature (soil deposit) located on the side of a cliff within dark grey, sandy consolidated soil. The place was recorded as being severely eroded and damaged by the construction/insertion of a sewerage pipe. Shellfish species include <i>cellana</i> and <i>subinella</i> over a 0.5x0.05m ² area.		
	[REDACTED]	Artefact Scatter	860m east
	[REDACTED] is a surface artefact scatter consisting of a light grey flint block fragment and a waste flake located within an undulating paddock.		
	[REDACTED]	Artefact Scatter	885m east
	[REDACTED] is a surface artefact scatter consisting of a grey flint block fragment and a waste flake located within an undulating paddock.		
	[REDACTED]	Artefact Scatter	890m east
	[REDACTED] is a surface artefact scatter consisting of a flint block fragment located within an undulating paddock.		
	[REDACTED]	Artefact Scatter	900m east
	[REDACTED] is a surface artefact scatter consisting of a grey flint block fragment located within an undulating paddock.		
	[REDACTED]	Artefact Scatter	905m east
	[REDACTED] is a surface artefact scatter consisting of a grey flint multidirectional core located within an undulating paddock.		
	[REDACTED]	Artefact Scatter	905m east
	[REDACTED] is a surface artefact scatter consisting of a single reduction/cortical waste flake of grey flint located within an undulating paddock.		

VAHR No.	Place Name	Place Type	Distance From AA
		Low Density Artefact Distribution	910m east
	consisting of a surface flint distal flake and proximal flake. No further information about this place has been provided.		
		Artefact Scatter	910m east
	is a surface artefact scatter consisting of a grey flint core located within an undulating paddock.		
		Artefact Scatter	915m east
	is a surface artefact scatter consisting of a black flint block fragment located within an undulating paddock.		
		Artefact Scatter	930m east
	is a surface artefact scatter consisting of an undisclosed number of stone artefacts on the top or edge of a dune.		
		Artefact Scatter	940m east
	is a surface artefact scatter consisting of two reduction/cortical waste flake of grey flint located in an undulating paddock at the side or base of a dune/rise.		
		Artefact Scatter	940m east
	is a surface artefact scatter consisting of a block fragment (waste flake) of grey flint located in an undulating paddock at the side or base of a dune/rise.		
		Artefact Scatter	945m east
	is a surface artefact scatter consisting of two block fragments of grey flint located in an undulating paddock at the side or base of a dune/rise.		
		Artefact Scatter	965m east
	is a surface artefact scatter consisting of a grey flint block fragment with evidence of retouch located in an undulating paddock at the side or base of a dune/rise.		
		Artefact Scatter	970m east
	is a surface artefact scatter consisting of a grey flint block fragment located in an undulating paddock on the top or edge of a dune/rise.		
		Artefact Scatter	980m east
	is a surface artefact scatter consisting of a grey flint block fragment located in an undulating paddock on the top or edge of a dune/rise.		
		Artefact Scatter	985m east
	is a surface artefact scatter consisting of a grey flint core located in an undulating paddock on the top or edge of a dune/rise.		
		Artefact Scatter	990m east
	is a surface artefact scatter consisting of a grey flint block fragment located in an undulating paddock on the side or base of a dune/rise.		

7.6 Previous work in the geographic region

The VAHR is the repository for Aboriginal cultural heritage (archaeological) reports.

A total of 44 archaeological reports have been undertaken within the geographic region. These include 19 desktop assessments, papers, and due diligence (or other) reports; 16 survey reports; five complex assessment CHMPs, two test excavations, one salvage excavation and one heritage management report. There have been no prior CHMPs completed within the activity area, with the nearest, a complex assessment, located approximately 840 m to the south (CHMP 11220).

The following section provides a summary of five CHMPs which provide a representative depiction of the geographic region. These five CHMPs were chosen due to their proximity and relevance to the activity area, as well as their ability to provide insight into the landforms, soils, and archaeological potential which may be present within the current activity area.

Regional Reports

Archaeological Research Consultants Pty Ltd (1980) – Report #27 – Survey Report presented the findings following an archaeological survey of the area for the proposed Alcoa aluminium smelter site and environs at Portland, Victoria undertaken in June and July 1979. The large study area was 8 km² in size and as a result only areas of good exposure were examined, as well all areas where vegetation permitted walking. Only 50% of the study area consisted of areas that could be walked over and surveyed, with areas of good exposure making up only 1% of the total area surveyed. As a result of the survey, a total of 63 Aboriginal cultural heritage places and six historical archaeological sites were recorded. Of these 63 Aboriginal places, 54 were stone artefact scatters and nine were shell middens. Many isolated stone artefacts were also identified but not recorded. The artefact scatters were found to be concentrated in the Point Danger/Blacknose vicinity, which is in close proximity to chert nodules on the nearby beaches. Chert was the predominant raw material identified within the overall assemblage, with less than ten quartz artefacts and only one silcrete/quartzite flake was identified. The abundance of chert artefacts highlights that knapping was occurring close to procurement locations as well as speaking to the availability of chert as a raw material. These places were identified to be in a state of poor preservation. The authors found it highly likely that intact sub-surface Aboriginal cultural heritage material could be found throughout the course of the proposed development (Wesson & Clark, 1980).

Djekic & Snoek (1980) - Report #164 – Survey and Progress Report outlines the preliminary results and management recommendations following numerous archaeological surveys, soil sampling, and subsurface testing conducted for the proposed Alcoa Aluminium Smelter Project, Portland Victoria. A 40 m x 1100 m transect was excavated immediately west of Quarry Road which spanned across all of the major geomorphological units and landforms represented in the activity area. These included ridge crests, slopes and benches, swamps and swamp margins, and low-level ridges. The

transect extended to a depth of 20 cm to determine the presence of subsurface archaeological material and identify if any of the geomorphological units and landforms east of Quarry Road may be of high archaeological potential. A total of 15 stone artefacts, all isolated artefacts, were located as a result of this testing and consisted of mostly debitage and waste flakes. Of these, ten were located in the southern section of the transect which was situated along the ridge and slopes of a dune adjacent to a swamp. The authors note that several extensive private artefact collections exist in Portland and therefore the recorded and registered assemblages identified in the region are not reliable representative samples. Conclusions of this report highlight that artefactual material predominantly occurs on dune ridges and slopes near swamps, and that the high proportion of debitage material and waste flakes in comparison to finished implements may be due to artefact collectors removing them in the past, as raw material reduction and knapping had clearly been undertaken within the activity area (Djekic & Snoek, 1980).

CHMPs

Andrew Long + Associates (2010) – CHMP 11220 – Complex Assessment was undertaken for the proposed upgrades of the Portland Water Reclamation Plant, south of Olearia Road and 840 m north of the coastline in Portland. The activity area is directly south of the current activity area. The landscape of the activity area for CHMP 11220 consists of flat, gently inclined land with swampy sections within a sandy dune landform. No extant buildings or infrastructure were present. The standard assessment involved the pedestrian ground survey of the entire activity area with visibility limited by dense grass and weed coverage. The activity area was divided into two Survey Areas (SA 1a and SA1b). SA 1a made up the majority of the surveyed area and consisted of a flat sandy dune landform with a wetland and evidence of disturbance in the form of piles of gravel, and was deemed to be of low archaeological sensitivity. SA 1b consisted of a low sandy rise screened by modified native vegetation and was considered to have low to moderate archaeological sensitivity. No Aboriginal cultural heritage material was identified during the standard assessment. The complex assessment was conducted across the entire activity area and involved the excavation of one 1x1 m test pit and 26, 40x40 cm shovel test pits to maximum depths of 1250 mm and average depths of 400-700 mm. The soil profiles were relatively consistent across the entire activity area. They consisted of a dark brownish grey firm humic silty sand to 30 mm, overlying a weak silty sand with frequent gravel pieces to 160 mm, overlying a dark grey firm to compact sandy silt to 370 mm, overlying a black compact clay base with some orange, brown mottling to 460 mm. Disturbance was present to a depth of 160 mm as indicated by the presence of European material. A silcrete artefact was identified at a depth of 200-300 mm and was registered as [REDACTED]. Additional silcrete artefacts were identified within a STP depths of 380-560 mm within a sandy rise landform. A flint surface artefact was also located next to this STP and was registered but was not collected. These three artefacts were registered as [REDACTED]. As a result of the complex assessment, two new

Aboriginal cultural heritage places were recorded as artefact scatters [REDACTED] (Albrecht, et al., 2010).

Andrew Long + Associates (2018) – CHMP 15686 – Desktop Assessment was prepared for the proposed construction of a wind turbine at 144 Olearia Road, Portland. The activity area was characterised by a flat to gently inclined sandy dunes landform and covers the same activity area as CHMP 11220 above. The desktop assessment identified one previously registered Aboriginal place [REDACTED] within the activity area but it was determined that it was not going to be impacted by the proposed works. The vast majority of the activity area had been previously studied as part of CHMP 11220 and as part of the previous CHMP had been subjected to ground surveys and subsurface testing which had revealed high levels of ground disturbance in the area of proposed activity. It was agreed that this CHMP would not progress to a standard or complex assessment, and that the likelihood of finding further Aboriginal cultural heritage material was low (Lovell, 2018).

Biosis Research (2008) – CHMP 10468 – Complex Assessment was undertaken due to the proposed construction of two pipelines from the Bald Hill Reverse Osmosis Plant site to supply a high-quality water source to the Portland Aluminium Smelter and is situated approximately 300m east of the current activity area. The desktop assessment identified no previously recorded Aboriginal places within the study area but identified four previously recorded Aboriginal places within 50 m of the margin of the activity area which consisted of two surface artefact scatter and two isolated artefacts. A subsequent survey of these previously recorded Aboriginal places [REDACTED] outside of their activity area failed to locate any surface evidence of these places, which appeared to have been heavily disturbed since their registration in 1980. The standard assessment targeted places with remnant native vegetation and areas which displayed less evidence of disturbance. No Aboriginal cultural heritage material was identified during the survey. A complex assessment was undertaken involving the excavation of a 1x1 m test pit to a depth of 750 mm, along with 10 hand augers and 48 mechanical augers were excavated along five transects following the alignment of the proposed works and within areas appearing to have less ground disturbance to average depths of 800 mm. The sediments encountered generally consisted of dark greenish grey sand to 200 mm, underlain by pinkish grey sand to 750 mm. No Aboriginal cultural heritage material was identified and the authors attributed this to the severely disturbed nature of the subsurface deposits due to the installation of utilities (Debney & Patton, 2008).

Qu.A.C Archaeology and Heritage (2013) – CHMP 12857 – Complex Assessment was undertaken for Stage 4 of the Portland Wind Energy Project which included the installation of 22 wind turbines as part of the wind farm development at Cape Sir William Grant and Cape Nelson North, Glenelg Shire. The desktop assessment identified seven previously recorded Aboriginal places within the activity area [REDACTED] which consisted of two midden/artefact scatters and five surface artefact scatters, but the exact locations of some of these places was uncertain.

The standard assessment was undertaken via pedestrian survey across the entire study area. Of the seven previously recorded Aboriginal places identified within the desktop assessment [REDACTED] only three places [REDACTED] were able to be relocated during the survey of their activity area, whereas the other four Aboriginal places [REDACTED] could not be relocated.

The Cape Nelson North area consisted of grassed and grazed farmland with alternating high and steep-sided undulating sand dunes and low sandy rises. The Cape Sir William Grant portion of the study area varies between industrial and recreational use and the landforms consist of generally flat and low sandy rises and hills. The complex assessment consisted of the excavation of a total of fourteen 1x1 m test pits and eight 1.5x2 m mechanical pits at Cape Nelson North and ten 1x1 m test pits were excavated at Cape Sir William Grant.

As a result of both the complex and standard assessments, a total of 21 surface LDADs (containing 38 artefacts) and three artefact scatter places were recorded at the Cape Sir William Grant portion of the activity area, these are listed below:

- [REDACTED] LDAD consisting of a surface flint flake, two proximal flakes of unknown material, and a flint medial flake.
- [REDACTED] LDAD consisting of a surface flint flake
- [REDACTED] LDAD consisting of a surface flint longitudinally split flake
- [REDACTED] LDAD consisting of a surface flint proximal flake
- [REDACTED] LDAD consisting of a surface flint medial flake
- [REDACTED] LDAD consisting of a surface flake, proximal flake, and medial flake, all derived from flint
- [REDACTED] LDAD consisting of a surface flint flake
- [REDACTED] LDAD consisting of a surface flint flake and a flint medial flake
- [REDACTED] LDAD consisting of a surface flint flake and flint medial flake
- [REDACTED] LDAD consisting of a four flint flakes, a proximal flake, a bifacial core and a distal flake on the surface.
- [REDACTED] LDAD consisting of a surface flint angular fragment
- [REDACTED] LDAD consisting of a surface flint distal flake
- [REDACTED] LDAD consisting of a surface flint complete flake
- [REDACTED] LDAD consisting of a surface flint medial flake
- [REDACTED] LDAD consisting of a surface flint proximal and distal flake
- [REDACTED] LDAD consisting of a surface flint angular fragment
- [REDACTED] LDAD consisting of a surface flint unidirectional core
- [REDACTED] LDAD consisting of a surface flint complete flake
- [REDACTED] LDAD consisting of two surface flint complete flakes
- [REDACTED] LDAD consisting of a surface flint complete flake and angular fragment
- [REDACTED] LDAD consisting of a surface flint bifacial core
- [REDACTED] Artefact scatter consisting of a surface exposure. Within a sample 1x1m square nine flint artefacts, a basalt hammerstone, and a multiplatform flint core were recorded on a sandy vehicle track.

- [REDACTED] Artefact scatter of surface flint artefacts located adjacent to a graded and surfaced vehicle track in an exposed sandy area near thick coastal scrub. Eleven flint artefacts were recorded within a sample 1x1m square.
- [REDACTED] Surface artefact scatter of two flint artefacts, further subsurface testing identified an additional 24 flint artefacts between 300-600mm below the surface. Excavation ceased at 110cm, when coffee rock was encountered.

At Cape Nelson North, five midden/artefact scatter places and five LDADs (containing six artefacts) were also recorded. These include:

- [REDACTED] LDAD consisting of a surface flint distal flake, outside of their activity area,
- [REDACTED] LDAD consisting of a surface flint complete flake, just outside of their activity area,
- [REDACTED] LDAD consisting of a flint broken tool in the upper 100mm of soil,
- [REDACTED] LDAD consisting of a flint fragment at a depth of 100-200mm,
- [REDACTED] LDAD consisting of a complete flint flake and a flint angular fragment, both identified in the upper 100mm of soil, outside of their activity area.
- [REDACTED] Artefact scatter/midden containing 36 subsurface stone artefacts and a lens of midden shells (paphie, turbo, and mussel) within a 1x1m test pit, at depths of 200-400mm within an in situ dark brown/black silty sand.
- [REDACTED] Artefact scatter/shell midden on a low sandy rise containing two flint artefacts at a depth of 600mm within a test pit, along with minor amounts of paphie shell. Another two mechanical test pits contained small amounts of fragmented shells, and one of the mechanical test pits contained five flint artefacts at a depth of 1.4m below the surface, believed to be the original topsoil which had been buried.
- [REDACTED] Artefact scatter/shell midden consisting of surface and subsurface deposits consisting of seven flint artefacts and a mussel shell in the upper 1m of the deposits.
- [REDACTED] Artefact scatter/shell midden consisting of surface and subsurface cultural material was identified across three test pits. In total, 50 flint artefacts were recovered from a depth of 300-500mm, and shell material was spread throughout depths of 100-500mm.
- [REDACTED] Artefact scatter/shell midden consists of a surface scatter of a flint distal flake and a scatter of fragmented shell, mostly paphie, located on a small rise.

The high degree of coastal flint within these deposits are indicative of the abundance of coastal flint available on the beaches in the vicinity of the activity area (Lane & Gilchrist, 2013, p. 33). Due to the ubiquity of the Aboriginal cultural heritage material throughout the activity area, the authors stated that virtually the entirety of their activity area should be considered to contain some potential for undiscovered cultural heritage to exist. Management conditions of the CHMP included harm avoidance and minimisation strategies such as building up tracks where possible, erection of temporary fencing, the re-installment of excavated soils to their original location, monitoring of proposed works, and the salvage excavation of turbine/handstand locations where relatively dense (i.e.

more than one artefact) cultural material has been recorded, prior to any construction activities occurring (Lane & Gilchrist, 2013).

Qu.A.C Archaeology and Heritage (2015) – Report #4657 – Salvage Report

outlines the results of a salvage excavation following management recommendations made as part of CHMP #12857. This involved the salvage excavation of seven previously recorded Aboriginal places identified during CHMP #12857 and included [REDACTED]

[REDACTED] During monitoring works by GMTOAC representatives, an additional two Aboriginal places containing stone artefacts and marine shell were identified and recorded as [REDACTED], at Cape Nelson North. The salvage methodology consisted of 4x4m or 5x5m manually excavated test pits in areas associated with previously recorded Aboriginal places to depths of approximately 100-350 mm. A large proportion of coastal flint (n=100+) stone artefacts were identified as part of the excavation of two Aboriginal places at Cape Sir William Grant [REDACTED] which occurred in the form of unmodified and broken flakes. Despite the coast being 200-300m south of these places, no shell material was identified within the Cape Sir William Grant deposits, whereas the deposits at Cape Nelson North contained shell and stone material despite being 2.5 km away from the coastline. It was suggested that Cape Sir William Grant consists of generally steep coastal cliffs which may not have been favourable for the collection of marine shellfish (Lane & Gilchrist, 2015).

7.7 Gunditjmara Country: Historical and ethno-historical accounts in the geographic region

The activity area is located on Gunditjmara Country and has been cared for by the Gunditjmara since time immemorial.

Gunditjmara Country is made up of four distinct landscapes: Tungatt Mirring (Stone Country), Koonang Mirring (Sea Country), Wooraworook Mirring (Forest Country) and Bocara Wooraworook Mirring (River Forest Country) (Parks Victoria, 2015). The activity area is located on Koonang Mirring (Sea Country), between the fresh water and the coast.

The Budj Bim (Mt Eccles) volcano first erupted over 30,000 years ago, spreading lava across the landscape west and southwest toward the ocean. The lava flows moulded the surrounding stony landscape, filling and diverting waterways (UNESCO, 2019). The Gunditjmara believe that when Budj Bim erupted, the creator being revealed himself in the mirring and that the scoria stones were his tun gatt (teeth) (Lovett, 2014). From the top of Budj Bim, the Gunditjmara can observe the ancient route taken by the creator beings. This path stretched from the Serra Range and Mt Abrupt (Grampians) to Mt Napier and further south to the Cape Bridgewater coast near the activity area, and Deen Maar (Lady Julia Percy Island), which was regarded as the sacred place where the spirits of the Gunditjmara people rest eternally (Indigenous Knowledge Institute, 2023).

At this time Victoria and Tasmania were still connected by a land bridge and were not separated until the end of the last ice age about 14,000 years ago (Frankel, 2017, p. 37). As the land and sea levels changed around them, the Gunditjmara people had to adapt to their new surroundings.

The Budj Bim Cultural Landscape World Heritage Site was created during the last ten waves of this volcanic period, which ended approximately 7000 years ago (Wettenhall & Gunditjmara People, 2010) (Figure 7.1). The Gunditjmara used the natural typography to establish permanent features in the landscape, such as villages and aquaculture over a period of 6,600 years to create the oldest and most extensive aquaculture system in the world and continue to hold a strong connection to country (UNESCO, 2019). From the highest point at Budj Bim, Leywholot (Portland Bay) and Cape Bridgewater which is part of the wider cultural landscape (Wettenhall & Gunditjmara People, 2010). Elder Eileen Alberts talked about this landscape:

In the dreaming, the ancestor creators gave the Gunditjmara people the resources to live a settled lifestyle. They diverted the waterways, and gave us stones and rocks to help us build the aquaculture systems. They gave us the wetlands where the reeds grew so we could make the eel baskets, and gave us the food-enriched landscapes for us to survive.



Figure 7.1 Crater of Budj Bim painted by Eugene von Guerard in 1867. (Source: National Library of Australia).

Living on Country

Gunditjmara recognised inherited rights to occupy Country. The associated responsibilities and relationships centred on smaller family-based groups known as clans. Each clan was governed by a chief, who was known as a wungit. The appointment of a

new wungit was to some extent hereditary but sometimes the position would be filled by the 'best male friend of the deceased' (Dawson, 1880). In Gunditjmara culture, clan identity was matrilineal and was passed down through the female line. Care for Country was the responsibility of clans through regular ceremonial performance and singing the creation of their Country (Clark 1990). The activity area is located on the traditional lands of the Ure gundidj (Clark 1990).

Gunditjmara Country was abundant in a wide variety of plants that were important sources of food and medicine. A staple food was murrnong or Yam Daisy, a root vegetable or tuber, which grew extensively in the Western District. Women were responsible for gathering murrnong and used a digging stick for the purpose. Bullrush, which grew near swamps, was also an important resource for Gunditjmara due to its versatility as both a food and as a fibre for making string and baskets (Parks Victoria, 2015).

Plants were also used for making necessary everyday items. Bark provided material for housing as well as being used as containers for food and water. The cavities of large hollow trees were used to smoke eels for consumption. Certain trees were used to make canoes, which were used for fishing and transport. Two canoes, formed in one piece from dug-out logs, were retrieved from the Condah Swamp when it was drained in the 1950s and 1960s (Massola, 1969).

Invasion

It is likely that the Gunditjmara observed and encountered bark cutters at Port Fairy as early as 1810 and had interactions with whalers and sealers at Portland Bay in the 1820s and 1830s (Broome, 2005). From the early 1830s, the Henty family had substantial whaling operations at Portland Bay. Other whalers were also established there. Captain William Dutton had settled at Portland Bay in the late 1820s in a hut on the beach with his Aboriginal 'wife' Kalloongoo, who had been abducted as a child from Kurna Country. The year 1838 was the peak of whale production, when there were around 100 men working on the southwest coast (Wiltshire, 1976).

In the 1830s Thomas Henty, a stock breeder and banker, departed the Swan River Colony (Western Australia) for Van Diemen's Land. He and his sons had previously been based in Van Diemen's Land but the cessation of land grants prompted the Hentys and others to look further afield for new pastoral opportunities (Bassett, 1966 (online 2006)). While enroute to Van Diemen's Land from Western Australia in the early 1830s, Thomas Henty stopped at a sealers' camp at Portland Bay. He was inspired by the favourable appearance of the land and vowed to return. In 1834 Thomas gave consent for his son Edward to explore Portland Bay, where Edward set about establishing an agricultural settlement. The arrival of the Henty family in Portland marked the beginning of the loss of Country for the Gunditjmara people and competition for resources between them and the pastoralists (Tucker, et al., 2010).

Between 1839 and 1849 George Augustus Robinson was employed as Chief Protector of Aborigines in Victoria. As well as keeping official reports and records, he kept private diaries of his travels through parts of Victoria, including to the Western District. He travelled to the Portland Bay area three years after colonial settlement. Throughout his journals reference is made to the local Aboriginal people, their camp sites, villages and shelters, their food, clothing, weaponry, hunting, cooking, ceremony and language, as well as their exposure to disease and violence from the colonists (Presland, 1977). Robinson recorded 150 Aboriginal clan groups and determined that they had been violently dispossessed by pastoral activities (Wettenhall & Gunditjmara People 2010).

Robinson learnt about the Convincing Ground massacre in 1841, eight or nine years after the events took place. The period of time that elapsed between the massacre and its documentation resulted in numerous versions of events. The more supported version of events was written by Robinson between 1841 and 1842. He sourced Edward Henty and James Blair, the first police magistrate, in the Portland Bay area (Clark 2011). Robinson believed that the massacre occurred over the carcass of a beached whale. Henty told Robinson that a whale had broken its moorings and beached on the Portland Foreshore approximately 3 km from the Hanlon Parade site. When settlers tried to retrieve the carcass, members of the Kilcarer Gundidj clan had reached it first and attempted to ward off the settlers. By Robinson's account, Henty said that the whalers were so enraged that they returned to the station, retrieved their firearms, and went back to take the carcass by force. Only two Kilcarer Gundidj people survived the massacre (Clark 2011). As testament to the devastating effect of the Convincing Ground Massacre on the local Aboriginal population, in 1841 Robinson remarked that there had been no sign of Aboriginal people in Portland for years.

The impact of settlement of pastoralists and whalers at Portland decimated the clans from the area of the Portland settlement, who were forced to join the Gard Gundidj people at Mt Clay (Clark 2011). The Gard Gundidj people of Mt Clay forbade anyone going to the Portland area, most likely because of the Convincing Ground Massacre (Clark 2011).

The Convincing Ground Massacre was the first recorded massacre site in Victoria (Clark 2011). This site is listed on the Victorian Heritage Register (VHR H2079) and is recognised for its social significance to the Gunditjmara people and other Aboriginal people of southwest Victoria. It is also registered on the VAHR as [REDACTED]

[REDACTED]

An 1862 Government census recorded only 100 Aboriginal people in Portland. Around this time many Gunditjmara people were moved to the Lake Condah Mission as well as a station at Framlingham and other reserves throughout Victoria. Indigenous children were removed from their families and taken to the mission. The Lake Condah Mission closed in 1918.

Activism, Land Rights and Gunditjmara Today

In 1962 Aboriginal and Torres Strait Islander people have fought hard for the right to vote and are now able to exercise that right for the upcoming 1967 Referendum. The 1967 Referendum provided Gunditjmara, and more broadly, Aboriginal and Torres Strait Islander peoples, the right to be counted in the Census for the first time in Australian History (Weir, 2009).

After years of fighting Lake Condah Mission was finally returned to Gunditjmara on 1 January 1987. In 1993 the landmark Mabo decision is determined in the High Court of Australia, one of the first legislations aimed at providing Aboriginal and Torres Strait Islander people with an avenue to reclaim their Country, whilst also upending the belief that Australia is Terra Nullius, No Man's Land (Weir, 2009).

Gunditjmara submit a Native Title claim in 1996, and they are granted Native Title in March 2007 (Weir, 2009). This ruling supports their Registered Aboriginal Party application under the Act and in April 2007 the Gunditj Mirring Traditional Owners Aboriginal Corporation become the recognised RAP body representing Gunditjmara Country and interests.

In 2019 Lake Condah Mission was included within Budj Bim Cultural Landscape, which was designated a UNESCO World Heritage Site (UNESCO 2019).

Gunditjmara continue to be represented by GMTAC, and they continue to sustain and heal Country.

7.8 Land use history of the activity area

Due to its location in an east facing harbour, Portland was used as a sealers outcrop from 1807. This was followed by the establishment of seasonal whaling outposts in Portland Bay. The first recorded use of the land at Portland was in 1828 by a sealer who was doing intermittent work near Blacknose Point, approximately 6km from the activity area (Tucker, et al., 2010). In 1829, William Dutton built a house to live in during the whaling season. In 1833, he established an onshore whaling station on Whalers Point in what would become the township of Portland.

In the 1830s, Thomas Henty, a stock breeder and banker, left Swan River in Western Australia for Van Diemen's Land. On route, he stopped at a sealers base in Portland Bay and inspired by the look of the land, he vowed to return. Thomas sent his son, Edward Henty, to explore the Portland area in 1834. Edward then founded the first agricultural settlement in the area, establishing expansive sheep and cattle stations, in what would later be Victoria (Tucker, et al., 2010). Edward Henty and his brothers became interested in whaling and shipping from the Portland area and quickly established a squatter settlement which was illegal at the time (Anderson & Spreadborough, 1983).

Most early settlements in the Port Phillip district make note of the isolation, but in the early days of Portland diary entries indicate numerous visitors and many ships travelling back and forth (Anderson & Spreadborough, 1983). The closest farm was 300 miles away, across the Bass Strait in Van Diemen's Land but the Henty's were able to easily transport livestock and export wool. The Portland settlement was versatile in their use of the land and had a usual amount of variety in their exports (Anderson & Spreadborough, 1983)

Major Thomas Mitchell first surveyed the Portland Bay area in 1836 and discovered the Henty settlement. From here the Portland township began to develop further and, in 1840, the town was officially surveyed by Charles Tyers (Victorian Places, 2015). The western parcel of the activity area was first purchased by F. Laird in 1836 just outside the Portland town boundary. The eastern parcel was first purchased by Jonathon Dawkins and although the date was not recorded, this likely took place in the late 1830s-early 1840s (Victorian Places, 2015). The northern parcel forms part of three earlier parcels purchased by Ellen Kiel (1914), H.J.M. Campbell (1902), and Henry C.G. Dusling (1888) (Figure 7.2).

The township grew throughout the late 19th and early 20th centuries, with two residential dwellings established within the activity area by 1942 (Figure 7.3).

A 1986 aerial image of the activity area shows significant inundation present within the activity area as well as well-defined rises and depressions in the dune landform (Figure 7.4). By this time, the residential dwelling in the eastern parcel is no longer present and was likely demolished sometime earlier. In the same year, the Portland Aluminium Smelter opened approximately 1.5 km east of the activity area. The Smelter has been developed over 600 hectares, and has caused significant disruption to the wider landscape.

By the 1990s, the activity area remained undeveloped (Figure 7.5). The opening of the Portland Aluminium Smelter saw more industrial activities begin operating in the vicinity of the activity area such as the waste disposal centre constructed in the 2000s adjacent to the southern boundary of the activity area (Figure 7.6).

Despite the disturbance to the landscape due to various industrial undertakings and the expansion of Portland itself, the activity area has not been subjected to any notable disturbance except the construction of two residential dwellings and associated infrastructure and has retained its original landforms. Today, three notable rises can be identified within the activity area, while the remainder of the activity area is characterised by depressions and subjected to seasonal inundation (Figure 7.7).



Figure 7.2 Portland Parish Plan, n.d. (Source: PROV)



Figure 7.3 1942, Victoria Portland, map prepared by Australian Section Imperial General Staff. (Source: SLV with GML overlay)



Figure 7.4 1986 satellite image of the activity area (Source: Landata)



Figure 7.5 1992 aerial image of the activity area (Source: Landata)



Figure 7.6 2012 aerial image of the activity area (Source: GeoVic)



Figure 7.7 May 15 2023 aerial image of the activity area (Source: NearMap)

7.8.1 BYDA Results

A Before You Dig Australia search was conducted on 10 April 2024. The search identified a subsurface sewer main located in the western parcel which runs across northwards along the centre of the parcel. Overhead transmission lines are present in the western and northern parcels, and other utility assets that were identified were located on the road shoulders surrounding the activity area, particularly in the northern and north-eastern extents (Figure 7.8).

Owner	Assets within Activity Area
AusNet Gas Services	One gas termination pipeline located just outside the north-eastern extent of the activity area on Madeira Packet Road
AusNet Transmission Group Pty Ltd	Overhead transmission lines running west-east in the western parcel of the activity area
Powercore - Warrnambool	A SWER substation is located on the northern corner of the western parcel and approximately in the centre of the northern parcel
Wannon Region Water Corporation	Subsurface pressure sewer running northwards across the middle of the western parcel. Subsurface water assets present along Madeira Packet Road

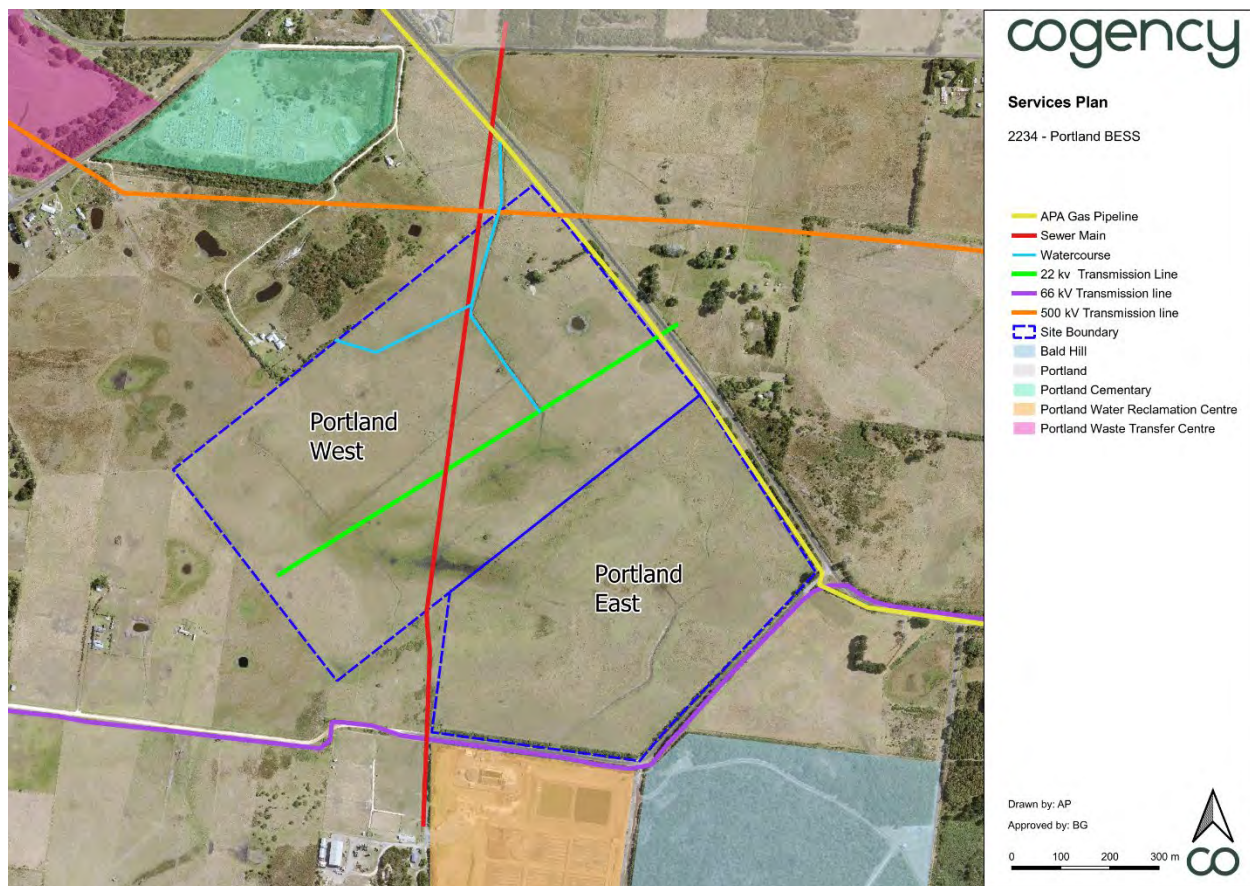


Figure 7.8 Location of utilities in proximity to the activity area (shown in blue). (Source: Cogency)

7.9 Conclusions from Desktop Assessment

The activity area is characterised by distinct rises and depressions, resulting in lower points in the activity area being prone to inundation during periods of rainfall. The activity area is situated within the geomorphological unit *Karst Plains with Depressions (Warrnambool)* (GMU 6.2.3). This GMU features a limestone plain which exhibits karstic features such as prominent sinkholes, caves, and springs due to bedrock weathering which are characteristic of the Bridgewater formation. Therefore, higher points in the landscape surrounding the wetter, inundated areas would be more suitable as dry vantage points over the landscape.

The results of the ACHRIS search determined that the geographic region is highly sensitive for Aboriginal cultural heritage. A total of 314 previously recorded Aboriginal places were identified within the geographic region, comprising mainly 112 shell middens (n=112), with LDADs (n=56), artefact scatters (n=40), earth features (n=24), and a quarry (n=1) are recorded. Artefactual material within the geographic region is dominated by locally acquired flint which occurs naturally along the coastline. Within the current activity area, two previously recorded Aboriginal places have been identified

██████████ opportunistically. ██████████ is a surface

flint scraper located on the upper slope of a rise located and [REDACTED] is a surface artefact scatter consisted of one chert flake and three flint flakes situated on the upper slope of a rise.

The previous archaeological research in the geographic region indicates that Aboriginal cultural heritage predominantly occurs on dune ridges and slopes close to swamps (Djekic & Snoek, 1980) (Albrecht, et al., 2010). The nearest subsurface archaeological testing occurred as part of CHMP 11220 and occurred directly south of the current activity area within a similar landform (Albrecht, et al., 2010). This CHMP determined that the undisturbed sandy rises had a moderate archaeological sensitivity for deposits of Aboriginal cultural heritage material to be present (Albrecht, et al., 2010).

The land use history of the activity area shows that despite the development and expansion of the Portland township since 1834, the activity area has been subjected to limited disturbance with the exception of two residential dwellings and has retained its original landforms. There are three notable rises which can be identified within the activity area and the remainder of the activity area is characterised by depressions which are subjected to seasonal inundation. Based on the results of the desktop assessment, the activity area has a high potential for surface and subsurface Aboriginal cultural heritage to be identified, particularly on the elevated sandy rises.

The results of the Desktop Assessment have indicated that it is possible for unidentified Aboriginal cultural heritage material to be within the activity area. Therefore, as per r.62(1), it is necessary to undertake a Standard Assessment.

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Consultation Summary Report

Portland Energy Park

Madeira Packet Road

For Pacific Green Energy Park Portland Pty Ltd

29 August 2024

cogency

Planning | Engagement | Strategy



Pacific Green

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Cogency Australia Pty Ltd
cogencyaustralia.com.au
office@cogencyaustralia.com.au

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We celebrate the physical and spiritual connections between Indigenous people and place expressed through the Birrarung Wilam (Common Ground) art Project on the banks of Melbourne's Yarra River.

Acknowledgement of Country

Cogency acknowledges the Traditional Owners and Custodians of the land on which we meet, work and write, the Wurundjeri Woi-wurrung peoples of the Kulin nation, and their connections to land, sea, and community. We pay our respect to their Elders past and present and emerging.

Cogency also extends that respect and acknowledges the Traditional Custodians of Portland, the Gunditjmara. We recognise and respect their cultural heritage, beliefs and continuing connection with the land and waterways. We also recognise the resilience, strength, and pride of the Gunditjmara and First Nations communities and acknowledge that Sovereignty was never ceded.

Executive Summary

Pacific Green Energy Park Portland Pty Ltd (Pacific Green) (the Proponent) appointed Cogency Australia (Cogency) to prepare a Community & Stakeholder Engagement Strategy and lead the engagement activities for the proposed development of the Portland Energy Park - a utility-scale Battery Energy Storage System (BESS) in Portland, Victoria, referred to as the 'Project.'

Pacific Green is committed to ensuring the community and stakeholders are proactively and meaningfully informed, consulted and involved in the planning and development of the Project, and that the benefits are genuinely felt by local people and businesses.

This Consultation Summary Report provides details of the engagement undertaken for the Portland Energy Park, from 2022 to 2024.

The three main phases of engagement throughout the lifecycle of the Project include:

- **Phase 1:** Early Feasibility and Design (completed)
- **Phase 2:** Pre-Application (completed)
- **Phase 3:** Post Application (to be continued).

During all phases of the Project, the appropriate stakeholders were effectively informed, consulted and involved in the process based on the objectives and principles of community engagement best practices and guidelines.

By actively listening to stakeholders and addressing their concerns, the Proponent has aimed to enhance the benefits derived from the Portland Energy Park and minimise the impacts on neighbours, the community, and the local environment.

Consultation with stakeholders and the Portland community has enabled the Project team to make adjustments to various elements of the Project and conduct additional technical studies to identify and resolve any issues raised. A summary of the influence on the Project design has been provided in Chapter 7.

The Engagement Action Plan continues to be periodically updated to reflect the progress of the Project, incorporate community input, and address any emerging needs and issues.

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Glossary

Abbreviation	Meaning
ABS	Australian Bureau of Statistics
AEMO	Australian Energy Market Operator
AMWU	Australian Manufacturing Workers' Union
BESS	Battery Energy Storage System
CEC	Clean Energy Council
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEECA	Department of Energy, Environment and Climate Action
DTP	Department of Transport and Planning
EPA	Environmental Protection Authority
ETU	Electrical Trade Union
EPBC	Environment Protection and Biodiversity Conservation
GMTOAC	Gunditj Mirring Traditional Owners Aboriginal Corporation
IAP2	International Association for Public Participation
LGA	Local Government Area
kV	kilovolt
MER	Monitoring, Evaluation and Reporting
MW	Megawatt
NEM	National Energy Market
O&M	Operations and Management
REZ	Renewable Energy Zone
Strategy	Community and Stakeholder Engagement Strategy

1. Project Overview

1.1 Introduction

Cogency Australia Pty Ltd (Cogency), on behalf of Pacific Green Energy Park Portland Pty Ltd (Pacific Green), has prepared this Consultation Summary Report in relation to the proposed development of the Portland Energy Park – a utility-scale Battery Energy Storage System (BESS) in Portland, Victoria, hereby referred to as the 'Project'.

Community and stakeholder engagement is fundamental to delivering positive and effective outcomes for both renewable energy Projects and the local community. Evidence from across Australia and internationally has shown that effective engagement increases the likelihood of establishing and maintaining renewable energy facilities that bring the most mutual benefit to all stakeholders. Proactive, meaningful, inclusive, and robust engagement practices can therefore be seen as an investment in two outcomes: the future success of the renewable energy industry and strong communities.

This Report aims to provide an overview of the stakeholder and community consultation that has occurred and will continue to occur in the planning and development of the Project. To date, Pacific Green with the support of Cogency Australia has sought to ensure that the community and stakeholders are **proactively and meaningfully informed, consulted and involved** throughout the Project's lifecycle.

1.2 The Project

The Portland Energy Park is a significant new grid-scale BESS Project to be developed in Portland, in regional Victoria. It will deliver a major increase in energy storage capacity in the region, strengthening energy and price stability for households in Victoria, and supporting the state's net-zero transition.

The Project comprises a BESS with a capacity of 1GW / 2.5GWh, making it one of the largest battery storage Projects in Australia. The Project area covers approximately 38 hectares (ha) and includes four 250 MW battery 'parks', electricity switchyard infrastructure, transmission line connection into the existing high-voltage network, and associated infrastructure and works such as access tracks, benching, drainage and landscaping.

Once operational, the Portland Energy Park will provide critical energy storage and stability for the National Electricity Market (NEM) grid. By helping to store and manage energy generated from renewable energy sources, the proposed Project will support existing and proposed renewable energy Projects within Victoria's South West Renewable Energy Zone (SWREZ), while helping to strengthen energy supply and price stability for households across Victoria and support Victoria's energy transition.

1.3 Site and Context

The site is located in Portland within the Glenelg Shire Local Government Area, a mostly agricultural area. Portland is 360 kilometres west-southwest of Melbourne and has a population of 10,016 (ABS, 2021). Portland comprises several shops, including banks and restaurants, accommodation, schools, and community facilities such as a civic hall, the Portland Leisure and Aquatic Centre and a CFA brigade.

Portland, Victoria's first permanent European settlement, has historically been vital due to its deep-water port, aiding whalers and seafarers in the Bass Strait. Today, it's known for its national and international trade links and the Portland Aluminium Smelter, which produces over 20% of Australia's aluminium.

The Port of Portland specialises in bulk handling and shipping timber and agricultural goods. The city's industrial land is largely centred around the Aluminium Smelter, connected by a 500kV transmission line to the Heywood Terminal Station. Situated within the Southwest Renewable Energy Zone (REZ), Portland is a critical location for renewable energy Projects. The area already hosts several wind farms, and there are plans for further development, including offshore wind farms, although these Projects have sparked some community opposition.

The site is approximately 2.5km south of central Portland and 2.4km northwest of the Portland Aluminium Smelter and the Portland Smelter Switchyard (Figure 1). The Portland Aluminium Smelter has a production capacity of 358,000 metric tonnes of aluminium per year and produces approximately 19% of Australia's total aluminium production, although the energy-intensive process of aluminium smelting requires approximately 10% of Victoria's produced electricity. Given that most of this energy is derived from brown coal in the Latrobe Valley, the production of aluminium is a significant contributor to Victoria's greenhouse gas emissions.



Figure 1 – Site Context Map

2. Community Snapshot

2.1 Traditional Owners

Prior to European Settlement, Portland was stewarded by the Gunditjmara, also known as Dhauwurd Wurrung people. The Gunditj Mirring Traditional Owners *Aboriginal Corporation* are the key stakeholders representing traditional owners in the region.

Within the Glenelg Shire region, there are 588 people who identify as Aboriginal and/or Torres Strait Islander, representing approximately 2.7% of the population (Australian Bureau of Statistics =, 2021 Census).

Gunditjmara people have cared for and protected this land since the dreaming. Their connections to the land, animals, seas, and waterways were and continue to be a part of their being.

2.2 Regional Context

The Project is located within the Glenelg Shire Council Local Government Area (LGA). Located in the far southwest of Victoria, the Glenelg Shire covers a diverse landscape that includes coastal regions, rural farmland, and small towns. The shire spans approximately 6,212 square kilometres and has a population of around 20,000 people.

The largest town in the shire is Portland, a key regional hub with its deep-water port, significant industrial activity, and a strong maritime heritage. Other towns in the shire include Casterton, Heywood, and Dartmoor, each with their own unique character and community.

The economy of the Glenelg Shire is largely driven by agriculture, forestry, fishing, and manufacturing, with Portland's Aluminium Smelter and the Port of Portland being major contributors. In addition to its industrial activities, Glenelg Shire is known for its natural beauty, including coastal landscapes, national parks, and the Glenelg River. Tourism plays a role in the local economy, with attractions such as the Great South West Walk and historic sites drawing visitors to the area.

2.3 Community Overview

With a population of approximately 10,000 residents, Portland has a community that reflects a mix of long-standing local families and newer residents drawn by employment opportunities in the region's key industries. The median age is slightly higher than the national average, indicative of an aging population, although there is still a significant number of young families living in the area. The town has a strong sense of community, with many residents engaged in local events, sports, and civic activities.

The population of Portland is relatively older, with a median age above the national average, and the region faces challenges related to population decline and the need for economic diversification. The demographic profile of Portland and its surrounds indicates a potentially receptive audience for sustainable initiatives. However, the population decline, and employment challenges underscore the importance of highlighting potential economic benefits and job creation associated with the renewable energy Project.

2.4 Stakeholder Identification

To engage appropriately and effectively with the local community and stakeholders, an important first step was to identify the full list of community and stakeholder groups who may be affected by and/or have interest in the Project, as outlined in **Table 1** below.

Table 1 – Stakeholder identification analysis for Portland Energy Park

Group	Sub-section	Description
Neighbours	Immediate	There are four dwellings neighbouring the Project sites.
	Near (>800m)	There are clusters of dwellings further north, north-east, and west: North: residential areas north of Derril Road (Portland township) North-east: 113, 121 & 127 Derril Road (zoned FZ), and Sheoke Road (while zoned FZ, a residential strip).
Local Businesses	Near (<1km)	Businesses up to 1 kilometre from the site boundary including Portland Aluminium Smelter.
	Far (1-5km)	Businesses up to 5 kilometres from the site boundary, within the local area.
	Relevant Businesses	Port of Portland and manufacturing firms including Keppel Prince Engineering, R. & M. MENZEL Pty Ltd, GR Carr Contractors, Portland Precision Engineering, Mibus Bros, SW TAFE, PJM Engineering.
Traditional Owners		The traditional owners of the Portland site are the Gunditjmara people, represented by Gunditj Mirring Traditional Owners Aboriginal Corporation (GMOAC).
Print Media	Local	Local publications and newsletters, including the Portland Observer.
	State	Victorian publications including The Age and the Herald Sun.
	National	National publications such as the Australian Financial Review, and The Australian.
Other Media	Local	Local TV and Radio, including ABC Southwest Victoria, Mixx FM 88.9, 3RPC-FM.
	State	State TV and Radio, including ABC Melbourne, 7News Melbourne, 9News Melbourne, Triple M, 3AW, SEN.
	National	National TV and Radio, including ABC National, 7News, 9News, Sky News, SBS.
Social Media	Local	Local community Facebook groups including Portland Victoria Community Notice Board, I Love Portland Victoria and What's Happening in Portland Victoria.
Federal Government	Relevant Ministers	Prime Minister, Anthony Albanese Minister for Climate Change and Energy, Hon Chris Bowen MP Minister for Environment and Water, Hon Tanya Plibersek MP Minister for Infrastructure, Transport, Regional Development and Local Government, The Hon. Catherine King MP Minister for Industry and Science, Mr. Ed Husic MP Minister for Agriculture, Fisheries and Forestry Senator the Hon. Murray Watt
	Local	Lower House – Dan Tehan (Federal – member for Wannon)
	Federal Agencies	DCCEEW Australian Renewable Energy Agency (ARENA)
State Government	Relevant Ministers	Minister for Planning – Sonya Kirkenny Minister for Energy and Renewables – Lily D'Ambrosio Premier – Jacinta Allen Minister for Environment – Steve Dimopoulos Minister for Agriculture – Ros Spence Minister for Water – Harriet Shing Minister for Local Government – Melissa Horne
	Local	House of Assembly (Lower House), Member for Great South Coast – Roma Britnell Legislative Council (Upper House) State members for Western Victoria Region: Jacinta Ermacora (Australian Labor Party), Bev McArthur (Liberal), Gayle Tierney (Australian Labor Party), Sarah Mansfield (Australian Greens), Joe McCracken (Liberal).

Local Government	Relevant Councillors	Mayor – Karen Stephens Councillors – Michael Carr, Scott Martin, Alistair McDonald, Robyn McDonald, John Northcott, Gilbert Wilson (Council Elections set for October 2024)
Emergency Services		Portland Fire Brigade (Fire Rescue Victoria) State Emergency Services (SES) – Portland Unit, Portland
Water Authority	Managing Director	Wannon Water
NGOs / Not for Profits		Committee for Portland Landcare Victoria Southwest Environment Alliance Australian Manufacturing Workers Union South West Trades & Labour Council Australian Manufacturing Workers Union
Transport Agencies		Victoria Department of Transport – Regional Roads Victoria
Grid Operator		AusNet

3. Community and Stakeholder Engagement Plan

3.1 Engagement Objectives

Pacific Green acknowledges that active and early engagement with the community and other relevant stakeholders is a crucial part of the planning process. It helps to foster greater understanding of and support for the Project, and to improve the design and development outcomes through the exchange of knowledge and information.

The Proponent is committed to delivering best practice engagement, with the overarching objective of ensuring that the identified community and stakeholder groups are proactively and meaningfully informed, consulted and involved and that the benefits of the Project are genuinely felt by the local community.

The communication and stakeholder engagement objectives are:

- Deliver an inclusive and robust engagement process that informs, consults, or involves stakeholders (as appropriate) throughout the Project's lifecycle.
- Engage early and proactively during the preliminary planning and pre-application phases to improve the Project.
- Develop relationships with targeted stakeholders by raising early awareness and actively engaging with these groups.
- Develop a thorough understanding of the local aspirations and concerns which relate to the Project and work with them to achieve mutually beneficial outcomes.
- Ensure stakeholders understand how to access information about the Project, provide feedback, stay informed and lodge complaints.
- Promote the Project's benefits by establishing clear and consistent messaging to manage misinformation.
- Encourage stakeholder and community input into the key aspects of the Project and the community benefit-sharing initiatives.
- Increase support for the Project from the local community and other key stakeholders.
- Establish a comprehensive database of stakeholders for the life of the Project and an up-to-date record providing evidence of all engagement activities undertaken throughout the process.
- To meet government planning expectations.

The objectives above are being met through the implementation of the Portland Energy Park Engagement Strategy and Engagement Action Plan, defined by the Project's engagement principles.

3.2 Engagement Principles



Mutual Benefit and Respect

Deliver shared outcomes of mutual benefit in an equitable way for the local host community, landowners, and developer. Provide a space for genuine dialogue for respectful discussions that identify mutually agreeable solutions.



Authenticity

Have a strong, authentic, and local presence in the community by providing dedicated staff who are reliably and readily available as the community's trusted 'translator' of technical knowledge, to explain information to the community and stakeholders in a simple yet effective way to address



Transparency, Trust, and Accountability

Provide diverse and ongoing opportunities for engagement throughout the Project's lifecycle. Monitor and evaluate the community engagement, benefit sharing and social impact management programs to identify areas for improvement and/or modification.



Fairness

Ensure that consultation is two-way and that opportunities exist for local community members and other stakeholders to participate, with access to balanced information, and having their ideas justly considered, responded to, and incorporated where possible.



Ongoing Engagement

Listen and respond to community needs and concerns in a comprehensive and timely manner. Maintain a record of the key issues raised and/or complaints received to date and how they were resolved.



Responsiveness

Listen and respond to community needs and concerns in a comprehensive and timely manner. Maintain a record of the key issues raised and/or complaints received to date and how they were resolved.



Social Feasibility

Understand, minimise, and offset the risk of negative social impacts across the Project's lifecycle by taking into consideration the many social factors through the use of appropriate social analysis tools and integrating them, alongside the technical and economic factors, into the Project.



Inclusiveness

Identify a wide range of different stakeholders across the local and regional communities and ensure that the channels and methods of engagement are tailored to the needs of each stakeholder group so that they are engaged with appropriately and effectively.



Relationship Building

Build genuine local relationships, networks and links to key local leaders or organisations. Allow key stakeholders to become advocates and create feedback loops. Help the local community to identify positively with the Project and integrate it into their sense of community and place.

3.3 Community Benefit Sharing

Pacific Green takes pride in becoming part of the communities in which they operate. As they expand their business across Australia, they will be searching for investment and partnership opportunities with value-aligned community groups and organisations. They aim to create social value and build stronger communities, right across Australia.

Pacific Green will work closely with the Portland community through the comprehensive community and stakeholder Engagement Action Plan. This ensures that the Project team develops a two-way, long-lasting relationship that fosters a tailored approach to the Community Benefit Sharing Scheme for the Portland community and wider Glenelg region. This in turn plays a vital role in supporting the development and success of Portland in which the Project will operate, helping to create more meaningful, inclusive, and sustainable outcomes.

Through a Community Benefit Sharing Scheme, the Proponent aims to enrich the quality of life for Australians both locally and internationally, across key focus areas:

3.3.1 Benefits to the Community

Pacific Green will continue to work closely with community members through the comprehensive community and stakeholder Engagement Action Plan and Community Benefit Sharing Scheme.

This ensures that the Proponent develops two-way, long-lasting relationships that foster a tailored approach to the Community Benefit Sharing Scheme. This in turn plays a vital role in supporting the development and success of the Portland community, helping to create more meaningful, inclusive, and sustainable outcomes.

3.3.2 Local Employment Benefits

Pacific Green is committed to sustainably contributing to local employment and training while ensuring high labour standards. During the construction of the Portland Energy Park, employment opportunities naturally peak at these times, and the approach is to maximise local direct employment and training opportunities.

The Proponent seeks to prioritise hiring from within the local community to support regional economic development and growth. Pacific Green will look to supporting local apprenticeships and education initiatives to support career progression in the renewable energy sector.

3.3.3 Relationships with our Neighbours

The landholders and neighbours are crucial to the success of Portland Energy Park. They hold site-specific knowledge and intelligence, and the knowledge shared is used to inform the design of the Project.

Through these conversations, data about the local environment, relevant historical land use, and other useful information is gathered. These relationships last decades and are valued.

3.3.4 First Nations Collaboration

Pacific Green recognises and values the importance of First Nations knowledge and participation in regional development.

The Project team will continue to engage with First Nations people and representatives to understand their priorities and tailor long-lasting economic, social, cultural, and environmental benefits through the Engagement Action Plan initiatives or the Community Benefit Sharing Fund.

4. Consultation Phases

An Engagement Action Plan for the Portland Energy Park engagement process was developed to encompass the entire Project lifecycle. The plan was specifically tailored to the local and regional context of Portland, ensuring relevance and effectiveness. Each engagement stage was designed to facilitate information sharing and provide opportunities for diverse stakeholder participation to influence the design of the concept plan.

Three engagement stages were identified, with the primary objective being **to ensure early, proactive, and meaningful engagement** with key stakeholders and the local community.

The Engagement Action Plan was structured to give ample time for interested parties to be informed and involved before the Planning Application is lodged.

4.1.1 Early Feasibility and Design

This phase comprised engaging with key process stakeholders to help with preliminary investigations and to garner support for and input to the Project at local, regional, and state levels.

A Community & Stakeholder Engagement Strategy was developed at this stage to help establish key engagement and approval objectives for the initial stages of the Project. Within this document, the Engagement Action Plan was established, outlining the key phases and activities for the Project.

This phase comprised of additional engagement with a wider range of local stakeholders as part of the early design and planning for the Planning Application. This phase was also used to introduce the Project to nearby neighbours and landowners to assist them in understanding the Project.

4.1.2 Pre-Application

This phase aimed to introduce the Project to the broader local community, assist them in understanding the issues, listen to their concerns and address those through design iterations.

Specialist consultants prepared technical assessments for the Project and the Planning Application package was finalised, ready for lodgement.

Periodic updates in relation to the Project were provided to the key stakeholders.

4.1.3 Post Lodgement

This phase aims to keep all stakeholders informed of the Project after it is lodged with the Responsible Authority for assessment.

The Project team will continue to involve the community and stakeholders in the planning and decision-making process, and further consultation will be conducted to ensure the Project is widely understood by the community and stakeholders.

Feedback on the Planning Application will be sought via:

- Verbally at the next community drop-in session, meeting or telephone
- Written feedback via email, letter or formal submission
- Project update newsletter
- Feedback forms (hard copies received at the community sessions or e-forms online).

4.1.4 Ongoing Communication

To ensure that members of the public can access information about the Project and contact the Proponent if needed, the Pacific Green Australia website will remain open through construction and operation phases: <https://www.pacificgreen.com/aus/contact/>. The 'Contact Us' page on the website, as well as footers on all public collateral, includes the dedicated email address portland@pacificgreen.com to enable community members / stakeholders to contact Pacific Green throughout the project lifecycle, if desired.

5. Communication Tools

A wide range of communication tools ensured that the Portland community and stakeholders were effectively informed, consulted and involved in the Project, to reduce to the extent possible:

- The risk of conflict between community, stakeholders, and Pacific Green.
- Any intrusion and disruption to land uses.
- Potential impacts of energy infrastructure development.

Communication materials for the Portland Energy Park sought to be **objective, balanced and free from technical jargon**.

Given that there is a heightened level of community interest in new energy infrastructure and its relationship to renewable energy, the Project team sought to undertake an engagement approach that was personal and focused on consultation with referral authorities, surrounding businesses, landowners, neighbours and the local community potentially impacted.

This approach enabled a deeper level of stakeholder and community knowledge regarding the Project and greater awareness of the processes to which Pacific Green is committed to mitigate or manage potential impacts. Through this process, trust has been developed between the community and the Project team.

The focus of communications during Early Feasibility and Design and Pre-Application has been to seek input from the community about the Project and to adequately respond to and address enquiries and concerns in a timely manner.

Feedback was recorded through the Stakeholder Database and was used to inform the concept design and planning for the Project.

The communication tools that were used to implement the Engagement Action Plan are outlined in Table 2.

Table 2 - Communication tools and activities

Tool	Description and purpose	Stakeholders	Level of engagement
Stakeholder presentation and briefing pack	To provide clear and concise information about the Project as it develops. To notify the stakeholders about key milestones in the Project and how to get involved. To avoid the spread of misinformation and to mitigate concerns, where possible.	Key stakeholders	Inform Consult
Face-to-face and online meetings	To establish rapport and maintain ongoing relationships with primary stakeholders and key neighbours. To inform, consult or involve interested and concerned Portland community members and stakeholder groups. To identify potential risks and issues associated with the Project's construction or operation. To mitigate negative issues or spreading of misinformation. To provide a direct feedback mechanism.	State and Local government Community groups Neighbouring landowners	Inform Consult Involve
Contact phone and email address	To establish a point of contact via email and phone to stakeholders wanting to learn more about the Project, voice their concerns or raise matters of interest during all phases. To allow for initial introductions and quick responses to community members and stakeholders regarding the Project.	All stakeholders	Inform Consult
Project website and regular updates	To provide clear and user-friendly information about Pacific Green, and the Project. To be updated regularly as the Project develops to address concerns and mitigate the spread of misinformation.	All stakeholders	Inform Consult

	To provide a central location for all technical documents relating to the Project, regularly uploaded with up-to-date information. The website can be viewed here: https://www.pacificgreen.com/aus/projects/portland/ Of note, an initial project-specific website was designed for the initial phase. That first page was closed as the site linked above was built for the second phase as a more in-depth hub.		
Technical fact sheets	To provide clear and concise information about the Project as it develops. To notify the community about key milestones in the Project and how to get involved. To avoid the spread of misinformation and to mitigate concerns, where possible.	All stakeholders	Inform
Letters of introduction	Direct letters delivered to households within a specified distance of the site to notify landowners of details surrounding the Project, upcoming events (such as the Community Drop-In Session), participation opportunities, and Project updates.	Neighbouring landowners Local businesses	Inform Consult
Site Visits	Walk-overs of the site with the Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)	GMTOAC	Inform Consult Involve
Media releases and news articles	To ensure community members are advised about the Project status, milestones and lodgement details through publications in local and regional media outlets. To engage a wide audience through publications in local, regional, and state media outlets.	Local media State media	Inform
Local media advertisement	To promote the Community Drop-In Session and Project information.	Local media	Inform
Community drop-in session	To facilitate strong face to face interactions between the Project team and the community / stakeholders. To be informed about the Project and consult the Project team as the concept plan was developed. To provide Project information through mixed visual media, to assist the community / stakeholders in better understanding the site. To provide an opportunity for community members to clarify information, voice their ideas and concerns, encourage engagement in the planning process and to establish a point of contact for the Project.	Nearby landowners Local community members Local businesses Local politicians	Inform Consult
Closing the loop communications	To facilitate strong interactions between the Project team and the community / stakeholders. To ensure there is a clear understanding as to when the Project team will seek to reengage with in relation to the Project.	All stakeholders	Inform Consult

To date, these tools and activities have been used to provide timely and informative progress updates on the Project, as well as opportunities for the community and stakeholders to participate in the planning and design process.

As the Project transitions to the Post-Lodgement phase, the Project team will host another community drop-in session (planned for October / November 2024) to update and inform stakeholders and the community regarding the Planning Application and associated technical assessments. This session will give community members the chance to speak directly with the project team about the project, construction timeframes and any other queries they may have regarding the Portland Energy Park. Within this drop-in session, the

Engagement team will also share information regarding the framework, application process and timeframes of the Pacific Green Portland Community Benefit Fund.

In addition to the second drop-in session, Pacific Green will host a Supplier Information Session to update the community regarding local employment opportunities throughout the construction phase of the project. Prior to this session, a supplier portal has been developed on the Pacific Green website to enable local businesses to register their interest for this session and to lodge their business details as part of the balance of plant (BoP) engagement process.

6. Consultation Activities

An Engagement Action Plan was developed to cover the entire Project lifecycle. The implementation of the Engagement Action Plan has provided channels of information sharing and opportunities for a wide range of stakeholders to influence the development of the concept plan as reflected in Chapter 7.

The three main phases of engagement throughout the lifecycle of the Project include:

- **Phase 1:** Early Feasibility and Design (completed)
- **Phase 2:** Pre-Application (completed)
- **Phase 3:** Post Application (to be continued).

During all phases of the Project, the Proponent committed to informing, consulting, and involving the appropriate stakeholders through an effective engagement process based on the objectives and principles of community engagement best practices and guidelines.

Throughout all stages, the Proponent and Project team ensured that clear information was communicated regarding the Project, its potential impacts, and the mitigation measures proposed to manage them. By actively listening to stakeholders and addressing their concerns, the proponent has aimed to enhance the benefits and minimise the impacts on neighbours, the community, and the local environment. This has involved making design changes to various elements of the Project and conducting additional technical studies to identify and resolve any issues raised. The Engagement Action Plan continues to be periodically updated to reflect the progress of the Project, incorporate community input, and address any emerging engagement needs and issues.

6.1 Early Feasibility and Design Engagement

Engagement during early Feasibility and Design was undertaken from late 2022 until early 2024. This phase of engagement was critical to garnering support in the early stages of the Project, to identifying potential opportunities and constraints and receiving initial feedback.

6.1.1 Early feasibility

Engagement with key process stakeholders took place from late 2022 to the end of 2023. The key objectives of this phase were to engage with local and State authorities to obtain support in the Project's early stages and to seek initial feedback. During this phase, Cogency prepared a Community Engagement and Stakeholder Strategy tailored to Portland's local and regional context. The local stakeholders and community groups were identified, along with the appropriate engagement activities to be undertaken as part of the Engagement Action Plan.

Table 3 – Early Feasibility Engagement Overview

Stakeholders Engaged	Communication and consultation undertaken
▪ Department of Transport and Planning (Planning Unit) ▪ Glenelg Shire Council (Planning and Engineering Units) ▪ Wannon Water (Development Services) ▪ Glenelg Hopkins Catchment Management Authority ▪ Australian Energy Market Operator (AEMO) ▪ Gunditj Mirring Traditional Owners Aboriginal Corporation (via GML Heritage)	▪ Face-to-face meetings ▪ Online meetings ▪ Formal briefings/presentations

Summary

The initial briefings with key state and local stakeholders sought to provide an overview of the Project and discuss potential opportunities and constraints at a high level. The meetings provided insights into the requirements and approval process of an application for a large-scale battery.

6.1.2 Design

Over the course of four weeks in January-February 2024, the Project was publicly announced. The announcement was supported by targeted stakeholder and community engagement and the team sought to monitor and respond to interest in the Project from local stakeholders.

6.1.3 Stakeholder Briefings

Preliminary design Project briefings consisting of face-to-face and online meetings were held with key process stakeholders including with local MPs, Glenelg Shire Council, the Mayor, Wannon Water, Committee of Portland and local unions ETU and AMWU. These Project briefings sought to introduce the Project and the Proponent to the key stakeholders and provide opportunities for initial feedback and input.

The initial meetings and discussions found stakeholders to be supportive of the Project and they generously provided insights from past energy Projects. These initial meetings provided insights that helped to understand the key opportunities and issues that could arise for the Project and how to manage these considerably. These meetings were also the first discussion in relation to opportunities and initiatives for a local Community Benefit Fund.

Table 4 – Design Phase Engagement Overview

Stakeholders engaged		Activities undertaken	
- Local members - Glenelg Shire Council (Executive team) - Wannon Water - Mayor of Portland - Committee for Portland - Local unions (AMWU, ETU, AWU) - Nearby-neighbours - Gunditj Mirring Traditional Owners Aboriginal Corporation (via GML Heritage)		- Face-to-face meetings - Online meetings - Formal briefings/presentations - Letter of introduction - Phone calls - Community drop-in session	

Summary of Design Engagement Activities			
Date	Stakeholder	Activity	Consultation notes
January 2024	Roma Britnell Member for South West Coast (State)	Online Briefing	- Project, context and Proponent overview - Victorian storage needs, and economic development - Management of noise impacts and fire risks - Cultural heritage and other potential impacts - Near-neighbour and local concerns.
January 2024	Mayor of Glenelg Shire	Face-to-face meeting	- Project, context and Proponent overview - Community benefits for the whole shire - Electricity price benefits - Third parties that can support community fund - Other local Projects - Number of jobs (construction & ongoing) - Project impacts including cultural heritage.
January 2024	Glenelg Shire Council (Executive Team)	Face-to-face meeting	- Project, context and Proponent overview - Benefits and impacts Project could have for the smelter - The importance of a good community engagement - Potential Project impacts including sensitive receptors, noise, amenity and fire risks - Industrial zoning support Project use

			▪ Council assets including drainage and roads ▪ Experiences of other local Projects ▪ Local workforce.
January 2024	Local Unions (AMWU and ETU)	Face-to-face meeting	▪ Project, context and Proponent overview ▪ Alcoa operations ▪ Union support of renewable energy Projects ▪ Use of local businesses and contractors.
February 2024	Committee for Portland	Face-to-face meeting	▪ Project, context and Proponent overview ▪ Potential benefits of the Project ▪ SW TAFE skills/labour requirements ▪ Noise and fire risk considerations of the Project ▪ Past experiences with other major infrastructure Projects ▪ Ongoing dialogue related to local content provisions ▪ Number of jobs (construction & ongoing).
February 2024	Dan Tehan, Member for Wannon (Federal)	Online Briefing	▪ Project, context and Proponent overview ▪ Battery capacity relationship and potential impacts and benefits to smelter ▪ Insights from past community engagement ▪ Project impacts ▪ Community sentiment ▪ Number of jobs (construction & ongoing).
February 2024	Wannon Water	Face-to-face meeting	▪ Project, context and Proponent overview ▪ Overview of neighbouring assets ▪ Domestic water supply and sewer services ▪ Potential areas of interaction with Wannon Water ▪ Construction phase impacts ▪ Insights from past community engagement ▪ Noise and cumulative impacts ▪ Potential for landscape planning and revegetation.

6.1.4 Gunditj Mirring Traditional Owners Aboriginal Corporation

Heritage consultancy GML Heritage has been the liaison between the Project team and GMTOAC throughout all engagement phases, from July 2023 to August 2024. GML Heritage has held over 20 meetings/points of contact in relation to the Cultural Heritage Management Plan (CHMP) Assessment and Conditions on site, in face-to-face meetings and online. A full summary of consultation dates with GMTOAC is shown in Appendix I. Pacific Green and other Project Team members have often been directly involved in these meetings.

Engagement with GMTOAC is delivering upon the legislative requirements of the *Aboriginal Heritage Act 2006*, requiring a Cultural Heritage Management Plan (CHMP) to be prepared, in order to understand and manage cultural heritage. However, alongside this statutory engagement process Pacific Green are actively seeking other opportunities to support GMTOAC.

Key steps in the CHMP and GMTOAC engagement process include:

- September 2023: the CHMP 'Inception meeting', introducing all parties and discussing the Project. The preliminary designs were shared and the potential ground disturbances discussed. Initial feedback was provided regarding potentially sensitive areas on the Site.
- 17 October 2023: GMTOAC staff accompanied the consultant team for a site walkover survey (standard assessment). This discussed the sensitive dune rises and prompted complex site assessments.

- 14 December 2023: GMTOAC wrote a letter of support to the Australian Energy Market Operator (AEMO), outlining and supporting Pacific Green's intent to avoid dune rises of significance (that necessitated design changes to substation assets).
- February-May 2024: Complex site testing excavations.
- February 2024: Design plan updates and testing methodology changes.
- June 2024: Ground disturbance mapping and discussions on subsurface impacts, including discussions on Complex testing results.
- September 2024: Submission of the draft CHMP to GMTOAC for review.

Overall, the open and two-way communication has allowed layout changes to avoid and minimise impacts to culturally sensitive areas of the Site. This engagement has been viewed positively by GMTOAC and improved project outcomes. Pacific Green is committed to further collaborative engagement with GMTOAC, beyond the CHMP statutory process.

6.1.5 Local Unions

Meetings with the Electrical Trade Union (ETU) and the Australian Manufacturing Workers' Union (AMWU) were held in January 2024. Key discussions were focussed on understanding the nature of the Alcoa smelter's operations and the potential relationship between the battery Project and the smelter.

Potential impacts and the key benefits of the Project on the smelter were highlighted. The union representatives expressed support for energy Projects in the region, expressing general support for the Project.

Opportunities for job creation and job safety, possibilities of local procurement of components for the battery energy storage system and community benefit-sharing options were discussed. The input provided by the unions assisted in further informing the Community Benefit Fund and options for job creation.

6.1.6 Neighbours

In January 2024, a letter was sent to surrounding and adjacent neighbours introducing them to the Project team and informing them of the Project. The letter included an invitation to arrange a one-on-one meeting and/or attend the forthcoming community drop-in session.

Of the 38 letters posted, only two neighbours contacted the Project team requesting further information about the Project. Several neighbours attended the information session seeking further details about the Project scale and impact on their properties.

In addition, Pacific Green was welcomed into the home of an immediate neighbour to discuss the Project in further detail. Following this meeting, preliminary designs were also shared with this neighbour to enable open and transparent dialogue on an ongoing basis.

6.1.7 Community Drop-In Session

A community drop-in session was held on Wednesday 7 February 2024 from 2:00pm to 7:00pm at the Portland Golf Club. This event was designed to provide the wider Portland community with an opportunity to meet the Project team, learn about the Project and to listen to their concerns.

During the four-hour session, 55 people attended, with the majority visiting in the first half of the event.

Overall, the feedback received from attendees was positive about the Project with a desire to understand more about the technical assessments. There was considerable curiosity about what an energy park was, how BESS technology works and where it would be in relation to other local infrastructure.

A few attendees were initially not supportive of the Project, relaying concerns about amenity impacts, property prices, broader energy issues, and anti-renewable energy sentiment. However, most attendees left

the session informed and interested in understanding more about how the Project will manage acoustics, visual screening, and fire risks.

Around 20% of attendees either worked for or previously worked at the smelter. Local electricians and mechanic businesses were interested in understanding if there would be work opportunities related to the Project, throughout construction and operation.

Fire management, transmission line placement, acoustic impacts and decommissioning were raised by multiple people and the Project team assured them that there would be further communication about these aspects once technical assessments were completed.

The Project team sent a 'closing the loop' email and text message to the session attendees thanking them for their time and reassuring them that there would be information provided as the technical investigation and design progresses.

6.2 Pre-Application Engagement

The pre-application engagement commenced in June 2024 and was completed in August 2024. This phase aimed at reintroducing the Project with more technical information, providing periodic updates to the key process stakeholders previously engaged and continuing discussions with neighbouring properties.

Where needed, the Project was introduced to new stakeholders and any other interested parties. This stage was designed to ensure that any questions or concerns regarding the refined design of the Project could be considered with ample time before the lodgement of the Planning Application.

6.2.1 Project Update Briefings

Pre-application meetings were held with Wannon Water, Glenelg Shire Council, the Committee for Portland and the Local MPs to provide timely updates on the Project's progress since February 2024. These included updates regarding:

- Project design updates.
- Technical matters including noise, grid and water connection, cumulative impacts
- Potential economic impacts including local procurement
- Community benefit sharing options
- Development and construction timeframes

The Project briefings with key stakeholders illustrated the positive reception and general support of the Project. They also highlighted stakeholders' eagerness to collaborate on various technical aspects of the Project and to develop a robust and impactful community benefit fund.

Table 5 – Pre-application Engagement Overview

Stakeholders engaged	Activities undertaken
▪ Glenelg Shire Council (Planning and Engineering Units) ▪ Wannon Water (Development Services) ▪ Local members ▪ Committee of Portland ▪ Near neighbours ▪ Gunditj Mirring Traditional Owners Aboriginal Corporation (via GML Heritage)	▪ Face-to-face meetings ▪ Online meetings ▪ Briefings/presentations ▪ Second Project letter ▪ Phone calls ▪ Website updates including fact sheets and supplier portal created

Summary of Pre-application Engagement Activities			
Date	Stakeholder	Activity	Key Details
July 2024	Wannon Water	Face-to-face meeting	- Provided updates on Project design refinement - Water and sewage connection accessibility - Construction requirements and potential impacts - Community benefit schemes that also contribute to a regional pool to support major Projects - Noise protocols
July 2024	Glenelg Shire Council, Mayor, Councillors, Vic Gov Monitor	Face-to-face meeting	- Provided updates on Project design refinement - Technical matters including drainage impacts, noise generation and limits, and the function of the battery - Economic benefits of the Project for Portland and the wider region - Community benefit-sharing options and input into Community Benefit Fund structure
July 2024	Roma Britnell Member for South West Coast (State)	Online	- Provided updates on Project design refinement - Amenity impacts of BESS - Other Pacific Green UK Projects - Engagement approach
July 2024	Committee for Portland	Face-to-face meeting	- Provided updates on Project design refinement - Construction timeframes and requirements - Community engagement approach - Local content and contracts - Community Benefit Fund
July 2024	Dan Tehan, Member for Wannon (Federal)	Online	- Provided updates on Project design refinement - Commercial aspects of the Project

6.2.2 Neighbours

In early July 2024, a second letter was sent to neighbours, reintroducing the Project and informing them that the Project team wished to share the updated concept design in greater detail. The correspondence included an invitation to arrange a one-on-one meeting, either in person or online.

Out of the 38 letters sent, only three neighbours reached out for more information. Consequently, further meetings were proposed with these neighbours to discuss the Project in greater detail post-lodgement.

Table 6 – Neighbour interaction summary

Summary of Pre-application Engagement Activities			
Date	Stakeholder	Activity	Key Details
July 2024	Neighbour	Phone calls Fact sheets posted	Neighbour called and left a message. Project team called him back to understand his concerns related to the location and technology. This neighbour said they didn't have access to the internet, so the project team sent them a printed set of project factsheets for further information and confirmed receipt of the registered post. No further correspondence has been exchanged.
July 2024	Neighbour	Phone call / Emails	Initial phone call received detailing concerns regarding the audio impact the project may have on surrounding properties. Phone call follow up from project team to discuss concerns further. Follow up email sent including Fact sheets and flyer. Within email and phone call the offer of a face-to-

			face meeting with Managing Director was detailed. No response received so another follow up email was sent.
July 2024	Neighbour	Face-to-face meeting	Pacific Green's Managing Director & CEO met the same neighbour from Phase 1 again in Portland, to provide an update to the Project, including key considerations such as noise and visual impact. These updates were positively received and appreciated. Communication with this neighbour will continue on an ongoing and frequent basis.
July 2024	Neighbour		Email of support from a member of the community thanking the project team for the amount of project information provided to date and for being so considerate. The project team replied, detailing our appreciation for this feedback and encouraged the community member to get in touch with the team once again should they have any further feedback, questions or queries.

6.2.3 Union Conference

The South-West Trades and Labour Council invited Pacific Green to join the #Uniontown Conference 2024, bringing together union members from across Victoria, New South Wales and South Australia.

Pacific Green's Managing Director & CEO attended in person and presented the Project to the Union Town 2024 Conference (22 and 23 August 2024) to build trust and connection with the local workforce. He spoke about the Project's planned supplier networking event later in 2024 and overall timelines with construction planned to commence in 2025. He encouraged all attendees and their relevant members to register their interest within the supplier portal for the supplier networking event. He communicated Pacific Green's ambition to be transparent in its approach to developing the procurement framework and sought feedback for union involvement on an ongoing basis.

The Limestone Coast Project was also discussed to build confidence in Pacific Green.

Subsequent to the event, Assistant Secretary South-West Trades and Labour Council sent the following: "Thank you for your participation in the #Uniontown conference in Portland. The update on the project was very well received by attendees. When you need contact details for groundworks, maritime and then construction, please contact me and I can forward this information if you haven't already got this. Keep sending us updates on progress and we can help with lining up work crews and companies as the project moves towards its start date."



Figure 2 – Pacific Green Managing Director & CEO, presenting at #UnionTown Conference

6.3 Post-Lodgement Engagement

This phase of engagement will commence in September 2024, following the lodgement of the Planning Application. While the Project is undergoing assessment for statutory approval, the Proponent and the Project team will continue to engage the local community, neighbouring residents and other key stakeholders.

The Proponent, with the support of Cogency, **remains committed to proactive, and meaningful engagement** with the local community and stakeholders, which has started from the preliminary concept design phase.

6.3.1 Community Drop-In Session

As noted in section 5, the Project team will host a second community drop-in session (currently planned for October or November 2024), that will focus on re-engaging with the community about the Project.

The Project team expects engagement to focus on answering technical questions related to the Planning Application, development timeframes and next steps. This session will give community members the chance to speak directly with the project team once again and have open dialogue regarding any questions or queries they have about the project.

Within this drop-in session, the Engagement team will also share information regarding the framework, application process and timeframes of the Pacific Green Portland Community Benefit Fund.

In addition to the second drop-in session, Pacific Green will host a Supplier Information Session to update the community regarding local employment opportunities throughout the construction phase of the project. Prior to this session, a supplier portal has been developed on the Pacific Green website to enable local businesses to register their interest for this session and to lodge their business details as part of the BoP engagement process.

This approach will seek to ensure the community understands the opportunities for formal public input on the Project as it is assessed, as well as to provide key updates related to other milestones.

6.3.2 Neighbours

The Project team will re-engage with each neighbour throughout the post- lodgement period to offer meetings to discuss project updates and mitigate any concerns regarding the Project. This will also be a good opportunity to personally welcome neighbours to the community drop-in session.

Table 7 – Post Lodgement Engagement Overview

Stakeholders to engage	Activities to be undertaken
▪ Portland community ▪ Wannon Water ▪ Glenelg Shire Council ▪ Gunditj Mirring Traditional Owners Aboriginal Corporation ▪ Committee of Portland ▪ Local Members ▪ Department of Climate Change, Energy, the Environment and Water (DCCEEW) ▪ Department of Transport and Planning (Planning Unit) ▪ Victorian Premier	▪ Letter to neighbours notifying them of the Planning Application advertisement period ▪ Newspaper advertisements promoting community drop-in session ▪ Article in the Portland Observer ▪ A second community drop-in session ▪ Provision of updated fact sheets ▪ Website updates ▪ Meetings as requested to inform, consult, or involve the interested or concerned local community and stakeholder groups. ▪ Supplier drop-in session

7. Influence on Project Design

As a result of the consultation and engagement activities completed to date, several changes have been made to the concept design in direct response to issues or concerns raised. Figure 3 presents the current project concept layout. Figure 4 and Figure 5 provide visual renders and artist impression of the Project post-development.

Key changes and alterations to the concept plan include:

- The southern area of the site has been avoided to protect the habitat for the Blue Winged Parrot.
- Key infrastructure has been placed, where possible, away from the nearest dwellings to minimise noise and visual impacts. Most notably, on the North Site, all infrastructure has been placed at the southern extent of the property, away from the general residential zoned land.
- The siting and design of the Project, including adequate benching and drainage ponds, has addressed drainage issues raised by Wannon Water and Glenelg Shire Council.
- Following extensive consultation with GMTOAC and site investigations, an 'area of avoidance' was identified, comprising the culturally sensitive dune rises. This area of Aboriginal cultural heritage sensitivity has been protected from development.
- A landscape concept plan, entailing vegetation screening, has been developed to minimise views over the site as well as improve the visual amenity of the Project and adjacent streetscape.
- Acoustics measures such as equipment selection and layout have been incorporated into the Project to minimise noise impacts on surrounding sensitive receptors.

Based on the consultation to date, the Project team has also refined its local content provisions for construction and operation to ensure that Portland businesses will be positioned to work on the Project. A supplier portal is to be launched on the Portland Energy Park website to facilitate this opportunity.

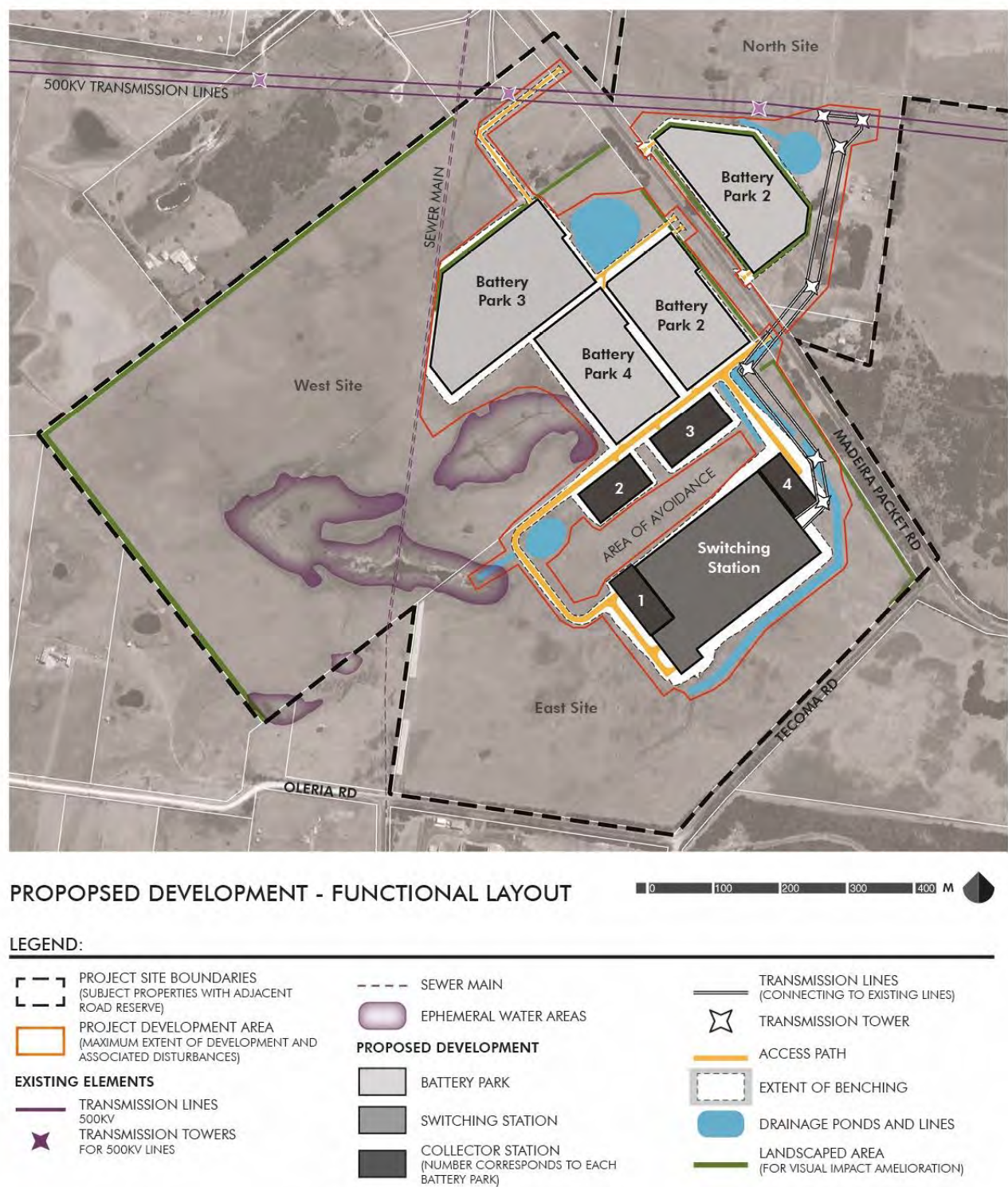


Figure 3 – Final concept layout plan for the proposed Portland Energy Park



Figure 4 – Renders of the proposed Portland Energy Park



Figure 5 – Project artist impression, to support community engagement

8. Conclusion and Next Steps

The Portland Energy Park presents an opportunity to increase energy storage capacity in Victoria, thereby strengthening grid and price stability for Victorian households and supporting the state's net-zero transition.

From the outset of planning and development, the Proponent, Pacific Green, has been dedicated to fostering and sustaining respectful relationships with the local community, businesses, all levels of government, Traditional Owners of the land, and other stakeholders. This has been made evident through the Proponent's commitment to preliminary and ongoing engagement with key stakeholders (such as nearby neighbours, Wannon Water, Glenelg Shire Council, Gunditj Mirring Traditional Owners Aboriginal Corporation and local unions).

As demonstrated within this report, the Proponent has remained committed to proactive and meaningful engagement at every critical stage of the Project. This approach has helped facilitate open and honest dialogue with key stakeholders and the broader community. Key considerations in the design process included the Project's proximity to sensitive receptors, visual amenity and noise impacts of the Project, drainage issues, along with considerations of Aboriginal cultural heritage sensitivity, biodiversity values and fire risks.

By actively listening to stakeholders and addressing their concerns, the Proponent has successfully incorporated feedback into the Project's design, aiming to further minimise any potential impacts on landowners, the community, cultural heritage and the local environment. Importantly, due to the early and meaningful engagement with GMTOAC (including cultural heritage investigation process), the concept layout was able to be significantly reworked during the feasibility phase to avoid areas of cultural heritage significance on the Site.

While aiming to minimise the potential impacts of the Project, the Proponent has also strived to maximise the benefits for the local community. Through the comprehensive engagement process, the Proponent has developed a deep understanding of the key opportunities and challenges associated with the Project, and how to manage these thoughtfully. These insights have also helped to identify initiatives related to the creation of a Community Benefit Fund which will continue to evolve as the Project progresses through its approval stages.

Looking ahead, Pacific Green, with the support of Cogency, remains committed to fostering strong relationships with key stakeholders and the local Portland community. The Proponent plans to maintain open lines of communication by actively engaging with local community members through a second community drop-in session and the ongoing development of the local Community Benefit Fund.

This continued engagement highlights the Proponent's dedication to maintaining respectful and ongoing relationships, ensuring that the community's voices are heard, and their needs are addressed throughout the Project's lifecycle and beyond.

Appendices

Appendix A	Portland Energy Park website
Appendix B	Project Flyer #1 (January 2024)
Appendix C	Letter to Neighbour (11 January 2024)
Appendix D	Community drop-in session advertisement
Appendix E	Photos of community drop-in session (7 February 2024)
Appendix F	Letter to Neighbour (3 July 2024)
Appendix G	Project Flyer #2 and Factsheets (July 2024)
Appendix H	Project media and event coverage
Appendix I	Outline of key consultation dates with GMTOAC

Appendix A Portland Energy Park website



Pacific Green Australia Community Insights Contact us

Portland Energy Park

1,000MW / 2,500MWh Battery Energy Storage Park in Victoria



The Portland Energy Park is a significant new grid-scale battery asset to be developed in regional Victoria.

Once operational, the 2.5GWh energy park will deliver a major increase in energy storage capacity. The asset will strengthen energy stability, lowering energy costs and supporting the transition to net-zero while bringing local investment and employment to the region.

66,900

tonnes of CO₂ avoided per year

Source: Cornwall Independent assessment, 2024

3.8%

local economic impact

Source: Cornwall Independent assessment, 2024

182,000

homes powered

Figure, per day - Calculation based on annual Victorian household energy consumption

About the project

The Portland Energy Park is an infrastructure asset that will connect into the national grid. When the electricity grid is producing an excess of renewable energy, some of that excess will be captured by the battery and stored. Then, at times of increased demand, the battery can discharge that stored energy back into the grid to relieve demand pressure and minimise the occurrence of high price events.

The energy park will be made up of single-story modular units similar in size to a 20 foot shipping container, with facilities for the energy and the associated infrastructure all located on-site. In total the facility will cover approximately 30 hectares of land, zoned for industrial use.

(preview continued overpage. See <https://www.pacificgreen.com/aus/Projects/portland/>)

Location

Strategically positioned within the industrial zoned area on Madeira Packet Road, the Portland Energy Park is in close proximity to the Portland Aluminium Smelter and the Portland Water Treatment Plant, enabling the asset to seamlessly co-exist with the existing electrical infrastructure positioned nearby.

The asset location also provides direct access to the State's principle road network and can integrate directly into the existing transmission infrastructure positioned within the northern extent of the site.



Timeline

The Portland Energy Park is currently going through its regulatory approval process. As part of this process, we are seeking to finalise the concept design, informed by preliminary research and technical studies. Pacific Green has completed a range of assessments and studies to ensure the project minimises any impacts during construction and operation. Our next steps include compiling this into a planning permit application.

For further information on the project and to keep up to date with its progress, please [click here](#) to sign up for our community updates.



Technical assessments

Large-scale battery energy storage system projects require a planning permit approval from the Minister for Planning. A planning approval determines the appropriateness of the proposed land use and development to its location, considering its context, physical environment and ability to meet other technical criteria.

To support this process, a large range of technical, environmental, and operational assessments have been undertaken. This will ensure the project minimises and manages any potential impacts and meets or exceeds all statutory requirements.

Project Approvals	Cultural Heritage	Landscape & Visual Impact
Noise	Hydrology	Design & Engineering
Biodiversity	Traffic Impact	Fire & Safety Management

In addition to the assessments above, Pacific Green has a close working relationship with Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) to ensure successful management of Cultural Heritage elements. Through this relationship we have gathered valuable advice that has shaped the proposal design of the Portland Energy Park. We value this relationship and look forward to our ongoing discussions.

Appendix B Project Flyer #1 (January 2024)

 **Pacific Green**



The Portland Energy Park

The Portland Energy Park is a major new grid-scale battery project to be developed in Victoria.

Once operational, the 2.5GWh energy park will provide critical support for existing and proposed renewable energy projects within the Southwest Renewable Energy Zone, and large electricity users and energy generation facilities in the area.

The Portland Energy Park is located within the industrial zone of Madeira Packet Road, close to the Portland Aluminium smelter and Wannon Water facilities.

Our community commitment

Pacific Green is dedicated to creating a cleaner environment for our communities. We do this by delivering innovative energy storage solutions that enable Australia's net-zero transition. We also partner with communities where we deliver projects to develop wider social value beyond our core business.



Scan the QR code to visit the project website: portland.energypark.au



About the project

The Portland Energy Park will deliver a major increase in energy storage capacity in Victoria, strengthening the region's energy stability and supporting its net-zero transition.

The park is not linked to any current or planned renewable energy projects but will connect into the national grid. When the electricity grid is producing an excess of renewable energy, some of that excess will be captured by the battery and stored. Then, at times of increased demand, the battery can discharge that stored energy back into the grid to relieve demand pressure and minimise the occurrence of high price events.



Location

Strategically positioned within the industrial zoned area on Madeira Packet Road, the Portland Energy Park is in close proximity to the Portland Aluminium smelter and the Portland Water Treatment Plant. The Energy Park will seamlessly integrate with the existing electrical infrastructure, which is currently positioned across the proposed project location.



Timeline

The Portland Energy Park is currently going through its regulatory approval process. As part of this, the company is completing a range of plans and studies to ensure the project minimises any impacts, these include biodiversity, hydrogeological, noise, landscape and visual impact assessments; and the development of risk assessment and management plans linked to safety and fire. A cultural heritage management plan is also being developed. The energy park is scheduled to be constructed in the first half of 2025.

During the construction phase several employment and contracting opportunities will be available and we will aim to engage local contractors, suppliers and businesses where possible.



For further information on the project and to keep up to date with its progress, please visit portland.energypark.au where you can also register for our community updates.



Pacific Green

enquiries@energypark.au

About Pacific Green

At Pacific Green we specialise in delivering grid-scale smart energy storage solutions from greenfield to operation and we are proud of our record in delivering safe, cutting edge energy storage solutions which are benefitting people and the planet.

Appendix C Letter to Neighbour (11 January 2024)

The name of the residents has been removed from the letter provided below.



11 January 2024

Address

Portland VIC 3309

Dear Resident

Pacific Green Technologies Inc. ("Pacific Green") is in the early design and planning stages of a proposal for a large-scale battery in Portland. We are writing to inform you about the project, offer an in-person meeting to discuss it further and invite you to our upcoming Community Drop-in Session.

The Portland Energy Park would deliver a major increase in energy storage capacity for Victoria, strengthening the region's grid stability, which will help keep energy costs manageable for households across the state.

The proposed development has been designed to avoid sensitive areas of the site and will connect into the existing high-voltage transmission line. In total, the facility will cover approximately 25 hectares of land, including four stages of battery parks and a switchyard.

Pacific Green is committed to open and transparent engagement with the communities in which we operate. We have engaged Cogency - a planning and engagement consultancy specialising in renewable energy projects - to facilitate community engagement on this project.

We will be visiting Portland on Wednesday 31 January and Thursday 1 February and would be happy to arrange an in-person meeting at a convenient local location. We can also speak to you on the phone or schedule an online meeting.

If you would like to arrange a meeting, please contact Camilla Hamilton by phone on 0452 593 428 or consultation@cogencyaustralia.com.au.

The following week we will be hosting a Community Drop-in Session to provide interested parties with an opportunity to view the preliminary plans and technical reports and ask questions of the project team.

COMMUNITY DROP-IN SESSION

Date: Wednesday 7 February 2024

Time 2:00pm to 7:00pm

Location: Portland Golf Club, 755 Madeira Packet Road, Portland

Thank you for your time and consideration. We hope to see you soon.

Sincerely,

Michael Maranta

Project Director – Pacific Green Technologies (Australia) Pty Ltd

Michael.maranta@pacificgreen.com

Pacific Green is a specialised company focused on addressing the world's need for cleaner and more sustainable energy. Our head-office is in London and our Australian business is based in Melbourne. We aspire to become one of the largest battery park operators in the Southern hemisphere.

Appendix D Community drop-in session advertisement

Portland Battery Community Information Session

Pacific Green, a leading developer of grid-scale energy storage solutions, is proposing to develop a new battery energy storage system in the Portland region.

Once operational, the 2.5GWh battery park will help to stabilise energy supply and keep energy costs manageable for Victorian customers.

This project is currently going through a regulatory approval process and is scheduled to be constructed in 2025.

Join us at a community information session to talk to the project team, learn more, and provide your feedback.

When

Drop-in at any time
between 2 pm and 7 pm,
Wednesday 7 February

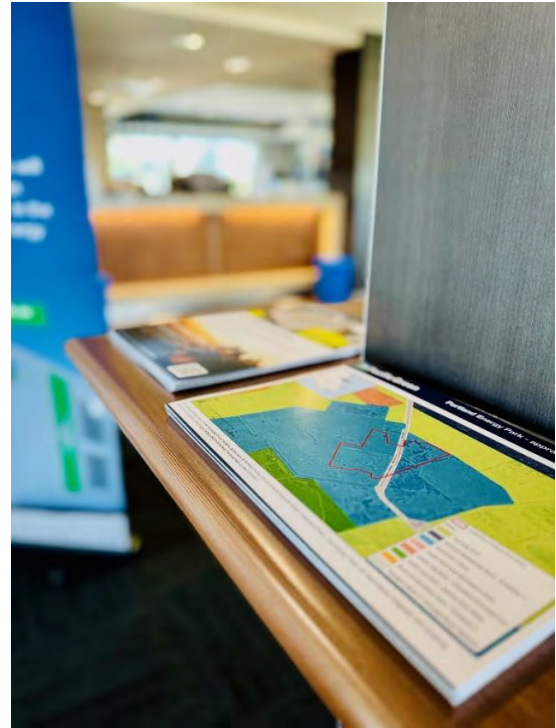
Where

Portland Golf Club,
755 Madeira Packet Rd, Portland

Learn more and register for updates:
portland.energypark.au



Appendix E Photos of community drop-in session (7 February 2024)





Appendix F Letter to Neighbour (3 July 2024)

The name of the residents has been removed from the letter provided below.



3 July 2024

Resident

Address

Dear XXX,

In January, Pacific Green wrote to inform you of its proposal for a large-scale battery in Portland – the Portland Energy Park. At that point the proposal was in an early design stage.

The Portland Energy Park can deliver a major increase in energy storage capacity for Victoria, strengthening the region's grid stability and helping to keep energy costs manageable for households across the state.

After months of progressing a suite of technical and environmental assessments, we would like to share with you our updated concept design in greater detail.

The concept plan has evolved to respond to technical and environmental considerations including cultural heritage, biodiversity, acoustics, hydrology, and visual amenity. It continues to avoid sensitive areas of the site and will connect into the existing high-voltage transmission line, minimising the footprint of the project.

As a neighbour, we would like to offer you an in-person meeting once again, to review the concept plan in detail and provide feedback before preparing the planning permit application lodgement.

If you would like to arrange a meeting either in person, online or over the phone, please contact Camilla Hamilton on 0452 593 428 or portland@pacificgreen.com. We will be visiting Portland on 18th July if you would like to meet on that date.

Thank you for your time and consideration. We hope to see you soon.

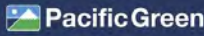
Sincerely,

Joel Alexander

Managing Director & CEO – Pacific Green Australia

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Appendix G Project Flyer #2 and Factsheets (July 2024)




Artist's impression of Pacific Green's Energy Park

The Portland Energy Park

The Portland Energy Park is a major new grid-scale battery project to be developed in Victoria.

Once operational, the 2.5GWh energy park will deliver a major increase in energy storage capacity in Victoria, strengthening the region's energy stability, lowering energy costs for households and supporting the transition to net-zero.

The Portland Energy Park is an infrastructure project that will connect into the national grid – it is not linked to any current or planned renewable energy projects. When the electricity grid is producing an excess of renewable energy, some of that excess will be captured by the battery and stored. Then, at times of increased demand, the battery can discharge that stored energy back into the grid to relieve demand pressure and minimise the occurrence of high price events.




Scan the QR code to visit the project website: www.pacificgreen.com.au/projects/portland

About the project

The Portland Energy Park is an infrastructure asset that will connect into the national grid. When the electricity grid is producing an excess of renewable energy, some of that excess will be captured by the battery and stored. Then, at times of increased demand, the battery can discharge that stored energy back into the grid to relieve demand pressure and minimise the occurrence of high price events.

The energy park will be made up of single-story modular units similar in size to a 20 foot shipping container, with facilities for the energy and the associated infrastructure all located on-site. In total the facility will cover approximately 30 hectares of land, zoned for industrial use.

Key statistics

66,900

tonnes of CO₂ avoided per year

Source: Corsewall Independent assessment, 2004

3.8%

reduction in Victorian home energy costs

Source: Corsewall Independent assessment, 2004

182,000

Victorian homes powered / day

Calculation based on annual Victorian household energy consumption

Location of the energy park

Strategically positioned within the industrial zoned area on Madera Packet Road, the Portland Energy Park is directly north of the Portland Water Treatment Plant and approximately two kilometres west of the Portland Aluminium smelter. The project is located on multiple land titles, on either side of Madera Packet Road. Strategically, this location is ideal as it provides direct access to the State's principal road network and it can integrate directly into the existing electrical transmission infrastructure positioned within the northern extent of the site.



This map outlines the site perimeter of the energy park development.



This map outlines the approximate distance from the energy park and substation areas of the proposed development.

Supporting technical assessments

Since our first Community Information Session in February 2024, Pacific Green have been working to finalise a suite of technical, operational and environmental assessments, in addition to an updated concept design. The concept plan has also evolved to respond to technical and environmental considerations, including cultural heritage, biodiversity, acoustics, hydrology, and visual amenity. It continues to avoid sensitive areas of the site and will connect into the existing high-voltage transmission line, minimising the footprint of the development.

Our suite of assessment summaries, listed below, are available to view via our website: www.pacificgreen.com.au/projects/portland

Project Approvals

- Noise
- Biodiversity
- Cultural Heritage
- Hydrology
- Traffic Impact
- Landscape and Visual Impact
- Design and Engineering
- Fire and Safety Management



Timeframe of the energy park

The Portland Energy Park is currently going through its regulatory approval process. As part of this process, we are seeking to finalise the concept design, informed by preliminary research and technical studies. Our next steps include compiling this into a planning permit application.

Planning and design

Planning application lodgement

Construction commencement

Operations commencement

2023

2024

2025

2026

2027

Community and stakeholder engagement phase 1

Site identification and feasibility

Technical and environmental assessments completed

Community and stakeholder engagement phase 2

Grid studies and connection agreement

Our community commitment

Pacific Green is dedicated to creating a cleaner environment for our communities. We do this by delivering innovative energy storage solutions that enable Australia's net-zero transition. We also partner with communities where we deliver projects to develop wider social value beyond our core business.

Pacific Green's Community Benefit Fund

Pacific Green takes pride in becoming an integral part of communities in which we operate. Our energy parks provide measurable benefits for community, businesses and households through the provision of energy storage, stability of the electricity grid and by playing an important role in enabling retailers to pass on reductions in electricity prices.

The Community Benefit Fund (CBF) established by Pacific Green aims to enhance and enrich the social, economic, and environmental well-being of communities in which we operate.

Further details of the Portland Community Benefit Fund will be released shortly. To read about Pacific Green's commitment to community, please visit: www.pacificgreen.com.au/community.



Community safety commitments

"The safety of our employees and the communities in which we operate takes precedence in all we do. In addition to first-class technical engineering that's designed to meet International Electrotechnical Commission (IEC) and Australian standards, all Pacific Green energy storage projects undergo rigorous safety and security testing to minimise risks."

Local employment opportunities

Pacific Green has invested a proven workforce for the development. The lifecycle of our high-voltage includes the installation of the battery and associated systems as well as the supply, construction, testing and commissioning of all infrastructure and equipment required to support the facility.

During the construction phase, employment and contracting opportunities will be available. Pacific Green will engage local contractors, suppliers and businesses from within the local community to support regional economic development and growth. The local through contractors will work to provide local suppliers and services providers to support the site works (procurement, civil and electrical) as well as utility manufacturing (structures, transportation, materials).

To register your business, please visit: www.pacificgreen.com.au/suppliers



At Pacific Green we specialise in delivering grid-scale smart energy storage solutions from greenfield to operation. We are proud of our record in delivering safe, cutting-edge energy storage solutions, which are benefiting people and the planet.

Scan the QR code to visit the project website: portland.pacificgreen.com.au



The series of technical factsheets (select thumbnails shown below) are available on the website:

<https://www.pacificgreen.com/aus/Projects/portland/>

Pacific Green

Portland Energy Park

Biodiversity

Ensuring ecological net benefit

Independent ecologists have undertaken site surveys to comprehensively assess environmental values and inform the project design.

Pacific Green is committed to providing a positive environmental development. Our primary mitigation tool is to avoid impacts through intelligent design, then minimise and offset any impacts as required. The project will include planting local species vegetation and rehabilitation of wetland areas, to improve biodiversity values. Already, Pacific Green has fenced exclusion areas and planted native species, with significant additional planting to come.

Due to the site's use for cattle grazing, it has been broadly cleared of trees and there is minimal native vegetation within the site boundaries. The most sensitive areas of the site are roadside vegetation, providing habitat for a range of fauna species.

Any impacts to native vegetation or nationally-significant flora and fauna must meet Victoria's legislation and relevant guidelines, as well as the Federal Environment Protection & Biodiversity Conservation Act (EPBC Act).

To ensure the project meets all requirements, the following assessments and approvals have been completed:

- Site and landscape surveys
- Targeted species surveys
- Avoid, minimise and offset statement

Biodiversity assessments will accompany the planning permit application and EPBC Act Referral.

Pacific Green

Portland Energy Park

Cultural heritage

The project requires a Cultural Heritage Management Plan (CHMP) to be approved by Gunditj Mining Traditional Owners Aboriginal Corporation (GMDTOAC).

The following steps have been undertaken in preparing the Draft CHMP:

- Desktop assessment
- Site walkover
- Complex testing assessment
- Registration of artefacts

Respecting and managing cultural heritage

Pacific Green acknowledges that this project is located on the lands of the Gunditjmarra. We recognise and respect their cultural heritage, beliefs and continuing connection with the land and waterways.

The activity area is located on Nyamat Mining (Isea Country), between the fresh water and the coast. The site includes coastal dune systems near wetlands – an area of high activity throughout human history due to its abundance of resources.

Pacific Green has sought to proactively engage with Gunditj Mining Traditional Owners Aboriginal Corporation (GMDTOAC), the Registered Aboriginal Party for this area. Our engagement will continue throughout the project's lifecycle.

Early cultural heritage investigations progressed from a desktop assessment to a survey of the site, to inform the concept layout and a complex archaeological testing methodology. From the survey, areas of heightened sensitivity to contain Aboriginal cultural heritage material were identified, and Pacific Green committed to redesigning some components to avoid those areas. Furthermore, detailed design and choice of construction methods have sought to avoid impacts on Aboriginal cultural heritage.

Over multiple months, archaeological subsurface testing has been conducted to better understand the site's cultural heritage. These results have revealed how the site had been utilised in the past, and have further informed the project layout. These results have been documented within a draft Cultural Heritage Management Plan (CHMP). The CHMP will ensure compliance with relevant legislation, manage and mitigate harm to Aboriginal cultural heritage and requires approval by GMDTOAC.

This project provides an opportunity for further recognition of cultural heritage, as well as localised environmental restoration to support Country, in accordance with Gunditjmarra Nyamat Mining Plan (2023-2033).

About Pacific Green

At Pacific Green we specialise in delivering grid-scale smart energy storage solutions from greenfield to operation. We are proud of our record in delivering safe, cutting-edge energy storage solutions, which are benefiting people and the planet.

To learn more about the Portland Energy Park via our project website, scan this QR code: www.pacificgreen.com/aus/projects/portland/ or contact us at portland@pacificgreen.com

Pacific Green

Portland Energy Park

Traffic

Managing road transport

A Traffic Impact Assessment (TIA) has been prepared to ensure that project design meets relevant State and Council road and traffic requirements.

The site's location on Madeira Packet Road is ideal, as it provides direct access to the State's principal road network. No new roads will be necessary, with only new access points to Madeira Packet Road required. Oesira Road will not be used for construction access. Internal tracks will allow servicing of the site.

Once operational vehicles will only need to enter the site for maintenance purposes. During the construction period vehicle movements will be required however all heavy vehicles will access the site via the Ring Road, past the Port and the smelter. This will avoid residential areas north of the site.

The Victorian Department of Transport (DPT) must consent to the application and approve new access points to Madeira Packet Road. A Traffic Impact Assessment (TIA) and Traffic Management Plan (TMP) must be endorsed by Council and DTP.

To ensure the project meets road safety requirements, the following assessments have been undertaken:

- Safe Intersection Sight Distance and swept path analysis
- Traffic generation calculations and SIDRA modelling
- Road capacity assessment

The TIA will accompany the planning permit application.

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Fire and safety management

The risk and management plans must be approved by Fire Rescue Victoria (FRV) and Energy Safe Victoria (ESV). Both entities have already been engaged in discussions about the project.

To ensure the project meets all fire safety requirements, the following assessments have been undertaken:

- Landscape fire risk assessment
- Equipment selection comparisons
- Design standards assessment (including sufficient separations)
- Concept fire-lighting provision (static water supply and hydrants)

A Bushfire Management Plan will accompany the planning permit application. Further Risk and Safety Management protocols will be prepared and submitted to FRV for endorsement.

Safety first

The safety of our employees, contractors, environment and communities in which we operate takes precedence in all we do.

The current concept layout design and equipment selection implements high-level safety management, with future detailed design to address micro-level safety management. Furthermore, a suite of operational risk management processes will be prepared and must be approved by the relevant authorities, including Fire Rescue Victoria and Energy Safe Victoria.

In addition to first-class technical engineering designed to meet International Electrotechnical Commission (IEC) and Australian standards, all Pacific Green energy storage projects undergo rigorous safety and security testing to minimise safety risks.

The Portland Energy Park will come equipped with the latest Lithium battery technology incorporating several integrated fire safety measures. This will include both external monitoring and heat, sensors as well as individual units within each battery container that are sealed and monitored with their own fire suppression systems. This means that if a single cell fan, the section of the battery is isolated and contained, thus protecting the rest of the container unit.

A Bushfire Management Plan (BMP) has also been specifically designed to over-see the Portland Energy Park operations. The site does not contain areas of significant vegetation and therefore has a low bushfire risk profile. The concept design addresses fire management requirements set out in the relevant CFA Guidelines. These design measures include sufficient spacing between containers, static water supply and hydrant provision and multiple emergency access points. Furthermore, civil earthworks and drainage concept design ensures that any run-off from the battery park earth benches will be captured in isolated ponds, that will filter sediment and control runoff.

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Portland Energy Park

Hydrology



Water management and quality

Hydrological modelling (water movement and flooding) has been undertaken to inform site design and surface water management.

The project has been designed to ensure there are no negative off-site flood impacts, and that electrical infrastructure is sufficiently clear of on-site floodwater.

A Flood Impact Assessment will accompany the planning permit application. Separately, approval will be required from the Glenelg Hopkins Catchment Management Authority (GHCMA).

The hydrology process began with existing conditions modelling, that found large low-lying areas of the site are subject to inundation. These results informed concept design layout updates, to avoid these areas as much as possible.

Flood modelling progressed iteratively with design layouts, to ensure that runoff is appropriately directed to on-site drainage infrastructure. Holding ponds will capture runoff, allowing sedimentation settling and filtering prior to water flowing into the site's central wetlands.

The project must meet Glenelg Shire Council's engineering and drainage standards, including no net-negative impact off-site.

Works approval is required from the Glenelg Hopkins Catchment Management Authority (GHCMA) and address water quality requirements.

To ensure the project addresses surface water management requirements, the following steps have been undertaken:

- Existing conditions modelling
- Post-development flood modelling
- Water quality assessment
- Functional drainage concept design

A Flood Impact Assessment will accompany the planning permit application.

The central wetlands will be fenced to exclude stock and replanted with appropriate vegetation, seeking to improve overall ecology and hydrology.

We have engaged with Glenelg Shire Council's engineering unit to ensure that drainage infrastructure and run-off control is appropriate.


Pacific Green

Portland Energy Park

Landscape and visual amenity



Indicative render (artist's impression) shows site boundary planting to screen the energy park from view.

Responsive landscape design to minimise design impact

A draft Landscape and Visual Impact Assessment (LVIA) has been prepared to assess the site's context, the design's relationship to the landscape, and propose mitigation such as vegetation screening planting.

Visual renders have also been prepared from various viewpoints, to illustrate what the project will look like:

The site is near the coast within a precinct of industrially zoned land, that includes Portland Aluminium, Warrnambool Water facilities and high-voltage transmission line. There are rural-residential dwellings to the west and north, with residential land further north.

The LVIA has assessed the site's setting as highly modified. The proposed switchyard infrastructure has been sited as far south as possible, to maximise the distance between its taller infrastructure and nearby dwellings (minimum 600m away).

The planning permit application must provide a Landscape Plan for endorsement, with management conditions to plant and manage screening vegetation.

To support the planning permit application, the following steps have been undertaken:

- Character assessment of landscape
- Topography and vegetation mapping and modelling
- Preliminary visual impact assessment and sensitive viewpoint consideration
- Landscape concept plan (including perimeter planting design with locally appropriate species)
- 3D visual modelling


Pacific Green

Portland Energy Park

Noise



Addressing EPA noise protocols

An acoustic assessment has been undertaken to ensure that the project will not exceed the Environment Protection Authority (EPA) noise limits.

The report will assess noise limits for residences and model noise generated by the project to demonstrate compliance. Pacific Green is committed to ensuring noise generation is minimised and compliant.

The key to making the project as quiet as possible is selecting equipment with lower noise output. Our batteries will be using cutting edge liquid cooling thermal management systems to keep the batteries at optimal temperature, rather than relying upon noisier fan forced cooling. Other key equipment selections include inverters and transformers.

The EPA have strict noise limits for both construction and operation of this project, underpinned by their legislation. At the planning application stage of the project, we will be required to demonstrate that the project is capable of not exceeding these noise limits at any time of day.

The Energy Park must comply with EPA Victoria's Noise limit and assessment protocol for the control of noise from industrial premises.

To ensure the project complies with the EPA's requirements, the following technical work has been undertaken:

- Background noise monitoring
- Defining noise limits
- Equipment data comparisons
- Acoustic modelling

A Noise Impact Assessment will accompany the planning permit application.

The independent acoustic consultants have undertaken background noise monitoring at locations around the site to inform their assessment and ensure a high level of accuracy.

The Energy Park will generate very minor ambient noise when operational. The Portland Energy Park site was selected largely due to its industrial zoning and distance from the residential areas of Portland, minimising the risk of noise disturbances for the local community.

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Pacific Green

Portland Energy Park

Project approval process



Indicative render (artist's impression)

Addressing planning and environmental requirements

Large-scale battery energy storage system projects require a planning permit approval from the Minister for Planning. A planning approval determines the appropriateness of the proposed land use and development to its location, considering its context, physical environment and ability to meet other technical criteria.

To support this process, specialist studies into a range of impact areas including biodiversity, cultural heritage, and noise have been undertaken. This will ensure the project minimises and manages any potential impacts and meets or exceeds all statutory requirements.

Separately, there are potential environmental approvals including under the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The project also requires grid connection approval from the Australian Energy Market Operator (AEMO), to ensure stability of the electricity grid.

The project must comply with Victorian planning legislation, State and Federal environmental laws, and grid connection approvals.

To ensure the project meets those requirements, the following applications will be made:

- Planning permit application to Victorian Minister for Planning
- EPBC Act Referral to Federal Minister for Environment
- Grid connection approval to AEMO

Appendix H Project media and event coverage

Media coverage			
Outlet	Media	Date/Time	Topic/link to media
<i>ABC Radio</i>	Live radio interview	5 February 2024 at 7.10am	Discussed Portland Energy Park and Community Information Session details
<i>3HA Radio</i>	Live radio interview	7 February 2024	Discussed Portland Energy Park and Community Information Session details
<i>Portland Observer</i>	Article with interview	2 February 2024 (interview) 6 February 2024 (in print)	Discussed Portland Energy Park and Community Information Session details
<i>Renew Economy</i>	Discussion with Sophie Vorrath and Article	5 February 2024	Portland Energy Park https://reneweconomy.com.au/victoria-to-get-huge-new-battery-as-uk-developer-advances-multi-gigawatt-australia-plans/
<i>Financial Times</i>	Interview with Australian correspondent	13 February 2024	Portland Energy Park
<i>Eco Generation</i>	Article		Portland Energy Park https://www.ecogeneration.com.au/taking-australia-into-a-greener-future/
<i>The Observer</i>	Article	23 August 2024 (in print)	Portland Energy Park
Event Coverage			
Outlet	Location	Date/Time	Topic/Link to Media
<i>Solar & Storage Live Australia 2024</i>	Brisbane Convention & Exhibition Centre QLD	2 May 2024	Portland Energy Park
<i>Australian British Energy Transition and Investment Summit 2024,</i>	The Fullerton Hotel VIC	7 May 2024	Portland Energy Park
<i>South Australia Energy Developments Conference 2024</i>	Adelaide Convention Centre, SA	18 June 2024	Portland Energy Park
<i>#Uniontown Conference 2024</i>	Portland, VIC	24 August 2024	Portland Energy Park
<i>All Energy Conference 2024</i>	Melbourne, VIC	October 2024	Portland Energy Park The main sponsor for Day 1



Garden delights The Portland Community Garden celebrated its 10th birthday on Saturday with the public enjoying tours and guest speakers. Community Garden president Wayne Barrell said they had a terrific response to the day. Garden volunteers and South West TAFE horticultural students (pictured here) sold produce on the day. Inset: Max Oxenford explains the use of the front-end loader and other equipment. Read more on PAGE 2. Photo: Tracy Smith/Observer

Billion-dollar battery plan for Portland

OSCAR PERRI

ANOTHER major energy infrastructure project is in the works for Portland with a battery park that would be the largest in Australia, with 700 containers across a 30-hectare site, connecting to the power grid. With a site secured near the Portland Aluminium Smelter, the company behind the 2.5 gigawatt-hour battery, Pacific Green, is planning to be operational in 2026. Currently in the planning stages, Joel Alexander, Pacific Green's managing director Australia, said he and his team will be in Portland tomorrow for a public information event at the Portland Golf Club from 2pm to 7pm. The proposal is currently going through a development application with the Victorian

Government with plans to submit the application in March and, if successful, start construction next year. "Once it's fully connected, the cost would be north of \$1 billion," Mr Alexander said. Much of that cost will cover building new infrastructure, including four 250MW battery energy storage, a 500/33kV collector, and a 500kV terminal station and grid connection to the existing 500kV transmission line. Mr Alexander said building batteries like this is a "critical" step to decarbonising Victoria. "Fundamentally, it's a standalone. It's not a battery, which is connected to the grid and it will pull energy from the grid when there's an excess of renewable energy, and it will put energy back into the grid when the grid needs it more," he said.

"It'll do that every day, 24 hours for the year." The battery park will cover a 30-hectare parcel, connected to the power grid through a traditional substation. "Think of 20 five containers arranged in a precise side by side with spacing between them, and by last count, it's roughly 700 containers," Mr Alexander said. The layout of the battery, according to Pacific Blue's modelling, is a wholesale power price in Victoria reducing by nearly 5% as well as less pressure on the state's power grid. "The grid is under pressure to be able to deliver energy to households when it's needed, when people use their air cons and turn on their lights," Mr Alexander said.

Billion-dollar battery plan for Portland

From PAGE 1
"We're particularly interested in discussing what meaningful grants or investments into projects we can do and how we set up a community fund that's both ongoing and sustainable," Mr Alexander said. "We're very keen to understand what that might look like and some partnerships that we can form over time, and we're also interested in identifying local labour and suppliers and, hopefully, that can be part of the project and how we can make sure that they have an opportunity to participate in the project." Mr Alexander said he has been meeting with local construction and engineering companies, and has been impressed by what they can do for the project. "We really want to use local content wherever we can, as part of our development of the project, we're coming up with our local content requirements and will have some more information on that later," he said. A biodiversity impact assessment for the project is currently underway. "The primary mitigation tool is to avoid impacts, and minimise and offset where required," Mr Alexander said. "We're committed to providing a positive environmental development, and that actually includes stabilisation of areas of undeveloped land to improve the local biodiversity value of the land." Rather than its proximity to major renewable projects, Portland was chosen for the battery due to the existing infrastructure, 500kV transmission line and industrial land zoning, he said. Although there is much of what is needed for the project that is already there, Mr Alexander said Pacific Blue will build a new power sub-station on-site to suit their needs. Pacific Green will oversee the construction and subsidise the operation of the energy park, and will organise long-term trading contracts of around 10 to 15 years with retailers, who take the energy from the park. "As far as it turns a profit once up and running, Mr Alexander said there are a few ways the



A PLAN of the proposed Portland battery park.

battery park can make money. "There's a few avenues, one of them is simply charging the battery when prices are low and discharging when prices are high, that's called wholesale price spread," he said. "Then there's another market that the batteries can play in which is on behalf of the network, and that's to maintain the voltage of the network. So as there's more renewables coming into the network, the voltage of the network can fluctuate and the important role is actually being the network back into stability, so the lights don't

turn off." Meanwhile, Origin Energy has recently approved construction of a smaller battery at its Meritana Power Station, with a capacity of 200MWh, but Mr Alexander said this will not affect the Portland project or its viability. "Victoria has some fantastic targets for net zero, and also some fantastic energy storage targets, and collectively, we want to make sure that we're achieving those targets through battery storage. So in this case, competition is a great thing," he said.

Fast start for interim hospital CEO

OSCAR PERRI

COLAC Area Health CEO Fiona Brew was meant to have her first day yesterday as Portland District Health's interim CEO, but instead will remain on leave because Colac Area Health is under investigation, accused of having "fake patients". Allegations recently surfaced that during a visit from Victorian Health Minister Mary-Anne Thomas last August, around 100 Colac Area Health staff and family members posed as patients, including one who arrived by ambulance. The Colac Herald last week reported that complaints had been made, and the Health Department has now said an independent investigator will be engaged to look into them. As a result, Karen Prevett will now remain as the PDH acting CEO while the hospital board looks for a permanent replacement for the role. "This investigation is being prioritised and we are providing ongoing support to the health service which is continuing to deliver high-quality care to the local community," a Department of Health spokesperson said. "We support a decision by CEO Fiona Brew to remain on leave and at Colac Area Health in the interim, and this does not pre-empt the outcome of the ongoing investigation. "We encourage anyone with information about the allegations to come forward and make contact via public.integrity@colacarehealth.vic.gov.au". The PDH board, led by Chair Peter Mathews, is currently in the formal recruitment process to hire a new CEO and is currently selecting a recruitment agency to find candidates. "Our recruitment for a CEO is ongoing and Karen Prevett, who has been Acting CEO since November last year, will remain in the role in the interim," Mr Mathews said. "Ms Prevett and our entire team at Portland District Health have a wealth of experience and a deep understanding of the local area and we remain focused on providing high-quality health care services to our community."

Unions supporting renewable projects

OSCAR PERRI

LOCAL union groups are hosting a renewable energy public information session this week, to counter an "extremely negative" community response to some proposed projects nearby. The event will include updates on the projects planned for the region, and speakers including Cane Walker from Friends of the Earth, and representatives from Squelches Offshore Wind and the Victorian Trades Hall Council. "Southwest Trades and Labour Council's Carl Millard is organising the event and said all are welcome to attend, to hear from some of the experts about the offshore windfarms and other projects, and ask questions. "We're trying to give a bit of confidence about renewables because there's been quite a bit of negative stuff, there's a part of the community here that doesn't want them at all, and they're not ready to say 'yes'," he said. "It has been extremely negative, and said that's why people aren't really talking about renewables so much, and particularly the wind farms."

Portland Battery Community Information Session

Pacific Green, a leading developer of grid-scale energy storage solutions, is proposing to develop a new battery energy storage system in the Portland region.

Once operational, the 2.50Wh battery park will help to stabilise energy supply and keep energy costs manageable for Victorian customers.

This project is currently going through a regulatory approval process and is scheduled to be constructed in 2025.

Join us at a community information session to talk to the project team, learn more, and provide your feedback.

When	Where
Drop-in at any time between 2 pm and 7 pm, Wednesday 7 February	Portland Golf Club, 755 Madera Pocket Rd, Portland

Learn more and register for updates: portland.energypark.au

RENEW ECONOMY

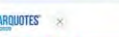
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Victoria to get huge big battery park as UK developer advances "multi-gigawatt" Australian plans



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UK energy storage developer Pacific Green has proposed its second grid-scale energy storage project in Australia in a matter of months, unveiling plans for a massive 1GW, 2.50Wh big battery project in Portland in Victoria's south-west - the state's biggest such project.

Pacific Green says the Portland Energy Park, which is in the early stages of planning and approvals process, will combine four 250MW batteries of varying storage duration capacities, a 500/33kV collector, and a 500kV terminal station and grid connection to the existing 500kV transmission line.

The company says the energy park will be developed as four stand-alone projects, each with their own connection point. Three of the batteries will be two hours of energy storage duration (250MW/500MWh each) and one energy park will be four hours (250MW/1,000MWh).

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Daffodil Day dip SWIMMERS Shirley Dunn, Jenny Duffin and Lynne Peters were doing their 'dip' for the Cancer Council's Daffodil Day at Nuns Beach yesterday. More stories on Daffodil Day will be featured in next Tuesday's Observer. PICTURE MICHAEL PETERS

Billion dollar batteries - one step closer

JO REID

THE Pacific Green Portland battery park, slated for Madiera Packet Road, is progressing well, according to Pacific Green's managing director Joel Alexander. The energy park will be made up of single-story modular units similar in size to a 20-foot shipping container, which will house lithium-ion battery cells. In total the facility will cover approximately 30 hectares of land, zoned for industrial use.

Once completed, the project will have cost "north of one billion dollars," according to Mr Alexander.

When the electricity grid is producing excess energy, some of that excess will be captured by the battery park and stored. Then, at times of increased demand, the battery can discharge that stored energy back into the grid to be used by consumers.

"It's basically the same battery technology as your phone. We will be utilising lithium-ion battery technology and it will be a 1 gigawatt

park," Mr Alexander said.

The project was announced in February this year, and now after completing all of the prerequisite planning and testing, such as noise studies, biodiversity studies and community engagement, the company is ready to put their planning approval to the State Government to get the final tick of approval before building commences next year.

The energy park, located within the industrial-zoned area on Madiera Packet Road, is in close proximity to the Portland Aluminium Smelter and the Portland Water Treatment Plant.

"We are definitely still on track with our timeline," he said.

The company will also have to gain "grid approval" from the current energy operator, AEMO, to connect into the power network.

Once all the approvals have been completed, Pacific Green hopes to start construction on the Portland site next year, with upwards of 200 people employed at any given point during this phase.

Continued PAGE 4



An artist's impression of the battery park slated for Portland.

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Renewables, Storage

Taking Australia into a greener future

ZHAN (FRED) ZHANG
April 6, 2024, 1:39 pm



Inside Pacific Green's Ribblesdale Battery Energy Park located in the UK. Image: Pacific Green

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As Australia forges ahead to a net-zero future, the need for innovative and scalable renewable energy solutions has never been more pressing.

At this key transition point on the path to a clean-energy future, Pacific Green, a global leader in the renewable energy sector, has entered Australia with a mission to accelerate the net-zero transition worldwide.

With a long track record in the UK, where the company has successfully delivered one operational battery park totalling 100 megawatt hours (MWh) and has another 375MWh facility under construction, Pacific Green has set its sights on the growing Australian market.

"We are positioning Pacific Green to become one of the largest battery park developers in the Southern Hemisphere," Pacific Green Australia Managing Director and Chief Executive Officer Joel Alexander told ecogeneration.

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Appendix I Outline of key consultation dates with GMTOAC

See following page for consultation summary provided by GML Heritage.

Outline of key consultation dates with GMTOAC

Table 1 Consultation in relation to the assessment

Date	Name and Title	Organisation	Nature of Consultation
14 July 2023	Zachary Carter (HA)	GML	Submission of Notice of Intent
	Secretary	DPC	
14 July 2023	Registrar	DPC	Assigns CHMP number 19677
	Zachary Carter (HA)	GML	
	Michael Mantara (Sponsor)	Pacific Green	
27 July 2023	Billy Bell (Cultural Heritage Officer)	GMTOAC	GMTOAC elected to evaluate the CHMP
	Leah Tepper	GML	
	Zachary Carter (HA)	GML	
15 August 2023	Leah Tepper (HA)	GML	Inception meeting (online)
	Emma Moore (HA)	GML	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Rebecca Wardle (Sponsors Agent)	Cogency	
11 October 2023	Leah Tepper (HA)	GML	Standard assessment results meeting (on site)
	Emma Moore (HA)	GML	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
22 March 2024	Leah Tepper (HA)	GML	Design change meeting, complex assessment methodology meeting (online)
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	

Date	Name and Title	Organisation	Nature of Consultation
18 June 2024	Leah Tepper (HA)	GML	Complex assessment results meeting (online)
	Emma Moore (HA)	GML	
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	Michael Mantara (Sponsor)	Pacific Green	
	Joel Alexander (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	

Table 2 Participation in the conduct of the assessment (on site)

Date	Name and Title	Organisation	Nature of Consultation
11 October 2023	Leah Tepper (HA)	GML	Standard assessment
	Emma Moore (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Billy Bell (Cultural Heritage Officer)	GMTOAC	
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
6 to 9 February 2024	Leah Tepper (HA)	GML	Complex Assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
13 to 16 February 2024	Leah Tepper (HA)	GML	Complex assessment
	Andie Coulson (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
20 to 23 February 2024	Briannon Dudek (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
27 February to 1 March 2024	Emma Moore (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	

Date	Name and Title	Organisation	Nature of Consultation
5 to 8 March 2024	Emma Moore (HA)	GML	Complex assessment
	Phillip Kermeen (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
13 to 15 March 2024	Briannon Dudek (HA)	GML	Complex assessment
	Zachary Carter (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
26 to 29 March	Leah Tepper (HA)	GML	Complex assessment
	Elise Nuridin (HA)	GML	
	Dean Lovett (Field Representative)	GMTOAC	
	Travis (Field Representative)	GMTOAC	
3 to 5 April 2024	Briannon Dudek (HA)	GML	Complex assessment
	Elise Nuridin (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
9 to 12 April 2024	Emma Moore (HA)	GML	Complex assessment
	Wendy Hernandez (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
6 to 9 May 2024	Leah Tepper (HA)	GML	Complex assessment
	Catherine Munro (Archaeologist)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Dean Lovett (Field Representative)	GMTOAC	
14 to 17 May 2024	Emma Moore (HA)	GML	Complex assessment
	Wendy Hernandez (HA)	GML	
	Keisha Day (Field Representative)	GMTOAC	
	Ricky (Field Representative)	GMTOAC	

Table 3 Consultation in relation to the conditions

Date(s)	Name and Title	Organisation	Nature of Consultation
18 June 2024	Leah Tepper (HA)	GML	Complex assessment results and
	Stephen Lovett (Cultural Heritage Officer)	GMTOAC	

Date(s)	Name and Title	Organisation	Nature of Consultation
	Billy Bell (Cultural Heritage Officer)	GMTOAC	management conditions meeting (online)
	Adam Black (Heritage, Research & Policy Manager)	GMTOAC	
	James Segundo (Sponsor)	Pacific Green	
	Billy Greenham (Sponsors Agent)	Cogency	
	Cameron Miller (Sponsors Agent)	JBS&G	



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Australian Government

Department of the Environment

Matters of National Environmental Significance

Significant impact guidelines 1.1

Environment Protection and Biodiversity Conservation Act 1999



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Photo:

Front – Budgee Creek in the Barmah State Forest (John Baker)

Back – Carnaby's black cockatoo (Leonie McMahon)

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Introduction

The purpose of these guidelines is to assist any person who proposes to take an action to decide whether or not they should submit a referral to the Australian Government Department of the Environment (the Department) for a decision by the Australian Government Environment Minister (the minister) on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)¹.

Under the EPBC Act an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.

These guidelines outline a 'self-assessment' process, including detailed criteria, to assist persons in deciding whether or not referral may be required. Important terms and phrases are explained in the shaded boxes. The appendix to the guidelines provides further assistance for specific industry sectors.

These guidelines may also assist members of the public or interest groups who wish to comment on actions which have been referred under the EPBC Act.

¹ Note that an action does not require approval under the EPBC Act if it meets the criteria for the 'prior authorisation' or 'continuing use' exemptions. These criteria are explained in the Practice Guide entitled *Prior Authorisation and Continuing Use Exemptions – Sections 43A and 43B*, available on the Department's web site at: www.environment.gov.au/epbc/publications/exemptions.html

Further exemptions include:

- certain activities allowed in the Great Barrier Reef Marine Park "as of right" (that is, without a permission) under a *Great Barrier Reef Marine Park Act 1975* (GBRMP Act) zoning plan (EPBC Act section 43)
- certain forestry operations in Regional Forestry Agreement Areas (EPBC Act section 42), and
- certain actions requiring separate authorisation by an Australian Government agency or employee and subject to an alternative assessment and advice process under section 160 of the EPBC Act

What is an action?

'Action' is defined broadly in the EPBC Act and includes: a project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things.

Actions include, but are not limited to: construction, expansion, alteration or demolition of buildings, structures, infrastructure or facilities; industrial processes; mineral and petroleum resource exploration and extraction; storage or transport of hazardous materials; waste disposal; earthworks; impoundment, extraction and diversion of water; agricultural activities; aquaculture; research activities; vegetation clearance; culling of animals; and dealings with land.

Actions encompass site preparation and construction, operation and maintenance, and closure and completion stages of a project, as well as alterations or modifications to existing infrastructure.

An action may have both beneficial and adverse impacts on the environment, however only adverse impacts on matters of national environmental significance are relevant when determining whether approval is required under the EPBC Act.

What are matters of national environmental significance?

The matters of national environmental significance are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

A person who proposes to take an action that will have, or is likely to have, a significant impact on a matter of national environmental significance must refer that action to the minister for a decision on whether assessment and approval is required under the EPBC Act. Substantial penalties apply for taking such an action without approval (civil penalties up to \$5.5 million or criminal penalties up to seven years imprisonment).

What is a significant impact?

A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. You should consider all of these factors when determining whether an action is likely to have a significant impact on matters of national environmental significance.

When is a significant impact likely?

To be 'likely', it is not necessary for a significant impact to have a greater than 50% chance of happening; it is sufficient if a significant impact on the environment is a real or not remote chance or possibility.

If there is scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment.

What is a referral?

'Referral' of an action involves filling out a referral form and sending it to the Department of the Environment. A referral identifies the person proposing to take the action and includes a brief description of the proposal, the project location, the nature and extent of any potential impacts, and any proposed mitigation measures. The EPBC Act referral process is outlined in more detail at the end of these guidelines.

If you represent a Commonwealth agency or you propose to take an action which is either situated on Commonwealth land or which may impact upon Commonwealth land, you should also refer to the *Significant impact guidelines 1.2: Actions on, or impacting upon, Commonwealth land and actions by Commonwealth agencies*. However, if referral is necessary, you need only submit one referral that includes all relevant matters.

Determining whether an action is likely to have a significant impact on a matter of national environmental significance

These guidelines are intended to assist you in undertaking a 'self-assessment' to decide whether or not your action is likely to have a significant impact on any matters of national environmental significance. Your self-assessment should be as objective as possible and based on sufficient information to make an informed judgement. If you complete a self-assessment and you are still unsure whether the action you propose to take is likely to have a significant impact on a matter of national environmental significance then you should refer the action to the Department of the Environment. In considering taking this step, you may like to discuss the matter with the Department's referral business entry point. The referral business entry point can be contacted through the Department's community information unit on **1800 803 772** or by emailing **epbc.referrals@environment.gov.au**

To make a decision as to whether or not to refer an action to the Minister, you should consider the following:

1. Are there any matters of national environmental significance located in the area of the proposed action (noting that 'the area of the proposed action' is broader than the immediate location where the action is undertaken; consider also whether there are any matters of national environmental significance adjacent to or downstream from the immediate location that may potentially be impacted)?
2. Considering the proposed action at its broadest scope (that is, considering all stages and components of the action, and all related activities and infrastructure), is there potential for impacts, including indirect impacts, on matters of national environmental significance?
3. Are there any proposed measures to avoid or reduce impacts on matters of national environmental significance (and if so, is the effectiveness of these measures certain enough to reduce the level of impact below the 'significant impact' threshold)?
4. Are any impacts of the proposed action on matters of national environmental significance likely to be significant impacts (important, notable, or of consequence, having regard to their context or intensity)?

1. Are there any matters of national environmental significance located in the area of the proposed action?

The EPBC Act protected matters search tool allows you to search for matters of national environmental significance in an area where you propose to take an action². The search tool is located on the Department's web site: www.environment.gov.au/erin/ert/epbc/index.html

Lists of threatened species and ecological communities can be accessed from the following web page: www.environment.gov.au/epbc/protect/species-communities.html

A list of migratory species can be accessed from the following web page: www.environment.gov.au/epbc/protect/migratory.html

A list of Australia's Ramsar Wetlands and a map showing their location can be accessed from the following web page: www.environment.gov.au/epbc/protect/wetlands.html

Information about the Commonwealth marine environment can be found at: www.environment.gov.au/epbc/protect/marine.html

A list of Australia's World Heritage properties and a map showing their general location can be found at: www.environment.gov.au/epbc/protect/heritage.html

A list of National Heritage places and a map showing their general location can be found at: www.environment.gov.au/epbc/protect/heritage.html

Information about the Great Barrier Reef Marine Park can be found at www.gbrmpa.gov.au

Information about a water resource, in relation to coal seam gas development and large coal mining development can be found at www.environment.gov.au/epbc/about/water-trigger.html.

² In relation to listed threatened species and ecological communities and listed migratory species, the EPBC Act protected matters search tool is intended to be of guidance only and should not be regarded as definitive. Surveys in the area where you propose to take an action can assist in verifying the results of the EPBC Act protected matters search tool. It is also important to note that some species may be detectable at certain times of the year only. Surveys should be timed appropriately, and undertaken for a suitable period by a qualified person.

2. Considering the proposed action at its broadest scope, is there potential for impacts on matters of national environmental significance?

If there are matters of national environmental significance in the vicinity of your proposed action, you need to consider whether there is potential for your proposed action to impact upon those matters.

The proposed action should be considered at its broadest possible scope. This includes all stages and components of the action, all related activities, and all related infrastructure such as roads and powerlines, if applicable.

If the action consists of a series of activities or a number of related activities, you should consider the impacts of each activity, and then consider the combined impacts of those activities.

It is also necessary and important to consider off-site and indirect impacts of your proposed action on matters of national environmental significance (refer to shaded box on page 6).

3. Are there any proposed measures to avoid or reduce impacts on matters of national environmental significance?

It is important to consider the environmental impacts of the proposed action early in the planning of the proposal. Careful planning of the action can avoid, or reduce, the likelihood of a significant impact on matters of national environmental significance. Where possible and practicable it is best to avoid impacts. If impacts cannot be avoided then they should be minimised or mitigated as much as possible.

You should consider impacts on matters of national environmental significance in relation to the following:

- site selection and the location of buildings or activities on the selected site
- the timing of the action or its component activities, and
- the design of any buildings, or other structures or infrastructure.

However you should not conclude that a significant impact is not likely to occur because of management or mitigation measures unless the effectiveness of those measures is well-established (for example through demonstrated application, studies or surveys) and there is a high degree of certainty about the avoidance of impacts or the extent to which impacts will be reduced.

4. Are any impacts of the proposed action on matters of national environmental significance likely to be significant impacts?

In order to decide whether an action is likely to have a significant impact, it is necessary to take into account the nature and magnitude of potential impacts. In determining the nature and magnitude of an action's impacts, it is important to consider matters such as:

- the sensitivity of the environment which will be impacted
- the timing, duration and frequency of the action and its impacts
- all on-site and off-site impacts
- all direct and indirect impacts
- the total impact which can be attributed to the action over the entire geographic area affected, and over time
- existing levels of impact from other sources, and
- the degree of confidence with which the impacts of the action are known and understood.

Indirect and offsite impacts

When considering whether or not an action is likely to have a significant impact on a matter of national environmental significance it is relevant to consider all adverse impacts which result from the action, including indirect and offsite impacts.

Indirect and offsite impacts include:

- a. 'downstream' or 'downwind' impacts, such as impacts on wetlands or ocean reefs from sediment, fertilisers or chemicals which are washed or discharged into river systems;
- b. 'upstream impacts' such as impacts associated with the extraction of raw materials and other inputs which are used to undertake the action; and
- c. 'facilitated impacts' which result from further actions (including actions by third parties) which are made possible or facilitated by the action. For example, the construction of a dam for irrigation water facilitates the use of that water by irrigators with associated impacts. Likewise, the construction of basic infrastructure in a previously undeveloped area may, in certain circumstances, facilitate the urban or commercial development of that area³.

Consideration should be given to all adverse impacts that could reasonably be predicted to follow from the action, whether these impacts are within the control of the person proposing to take the action or not. Indirect impacts will be relevant where they are sufficiently close to the proposed action to be said to be a consequence of the action, and they can reasonably be imputed to be within the contemplation of the person proposing to take the action.

It may be helpful to consider the following:

- 'But for' the proposed action would the indirect impacts occur?
- Is the proposed action a 'material and substantial' cause of the indirect impacts?
- Are the potential impacts of any subsequent or third party actions known, or would they be expected to be known, by the person proposing to take the action (particularly where the subsequent or third party actions are an intended outcome of the proposed action)?

If the answer to these questions is 'yes', then it is necessary to consider whether these impacts are likely to occur, and whether they are likely to have a significant impact on a matter of national environmental significance. If so, as much information as possible should be provided to assist the minister in determining whether the impacts are relevant, and whether approval under the EPBC Act is required.

Notes:

- When deciding whether or not a proposed action is likely to have a significant impact on a matter of national environmental significance, the precautionary principle is relevant. Accordingly, where there is a risk of **serious** or **irreversible** damage, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on a matter of national environmental significance.
- When deciding whether or not a proposed action is likely to have a significant impact on a matter of national environmental significance, you should consider only the adverse impacts that the action is likely to have. Beneficial impacts cannot be offset against adverse impacts. For example, a hydro-electricity scheme may have both beneficial and adverse impacts on the environment, however, only the adverse impacts are relevant when determining whether approval is required under the EPBC Act. If a project does require approval, beneficial impacts are considered during the assessment and approvals stages of the process.

³ Note that consideration of the impacts of 'facilitated actions' during the assessment and approval of the original action has no effect on the requirement of the proponent of the facilitated action to make a referral when that action eventuates, if that action will have, or is likely to have, a significant impact on a matter of national environmental significance.

Significant impact criteria

The ‘significant impact criteria’, set out on the following pages, for each matter of national environmental significance, are intended to assist you in determining whether the impacts of your proposed action on any matter of national environmental significance are likely to be significant impacts.

The criteria are intended to provide general guidance on the types of actions that will require approval and the types of actions that will not require approval. They are not intended to be exhaustive or definitive. If you are still unsure whether the action you propose to take is likely to have a significant impact on a matter of national environmental significance you should refer the action to the Department of the Environment for a binding decision on whether approval is required.

The particular facts and circumstances of a proposed action will need to be taken into account in determining whether that action is likely to have a significant impact on a matter of national environmental significance. Remember that the general test for significance is whether an impact is ‘important, notable or of consequence, having regard to its context or intensity’.

Listed threatened species and ecological communities

An action will require approval if the action has, will have, or is likely to have a significant impact on a species listed in any of the following categories:

- extinct in the wild
- critically endangered
- endangered, or
- vulnerable.

An action will also require approval if the action has, will have, or is likely to have a significant impact on an ecological community listed in any of the following categories:

- critically endangered, or
- endangered.

Notes:

- Species in the extinct and conservation dependant categories of species listed under the EPBC Act, and listed ecological communities in the vulnerable category of ecological communities listed under the EPBC Act, are not matters of national environmental significance for the purposes of Part 3 of the EPBC Act (requirements for environmental approvals).
- Species and ecological communities listed under the EPBC Act may differ from those listed under State and Territory legislation. This is due to the different status of some species and ecological communities in the different States and Territories, and nationally.

Extinct in the wild species

Significant impact criteria

An action is likely to have a significant impact on extinct in the wild species if there is a real chance or possibility that it will:

- adversely affect a captive or propagated population or one recently introduced/reintroduced to the wild, or
- interfere with the recovery of the species or its reintroduction into the wild.

Critically endangered and endangered species

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

What is a population of a species?

A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to:

- a geographically distinct regional population, or collection of local populations, or
- a population, or collection of local populations, that occurs within a particular bioregion.

What is an invasive species?

An 'invasive species' is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.

What is habitat critical to the survival of a species or ecological community?

‘Habitat critical to the survival of a species or ecological community’ refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

Vulnerable species

Significant impact criteria

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species
- reduce the area of occupancy of an important population
- fragment an existing important population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of an important population
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species’ habitat
- introduce disease that may cause the species to decline, or
- interfere substantially with the recovery of the species.

What is an important population of a species?

An ‘important population’ is a population that is necessary for a species’ long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species range.

Critically endangered and endangered ecological communities

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- reduce the extent of an ecological community
- fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines
- adversely affect habitat critical to the survival of an ecological community
- modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns
- cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting
- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
 - assisting invasive species, that are harmful to the listed ecological community, to become established, or
 - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or
- interfere with the recovery of an ecological community.

Further information on listed threatened species and ecological communities

The following information on listed threatened species and ecological communities is available on the Department's web site:

- General information: www.environment.gov.au/biodiversity/threatened/index.html
- Copies of recovery plans and threat abatement plans:
www.environment.gov.au/biodiversity/threatened/recovery.html
www.environment.gov.au/biodiversity/threatened/tap/index.html
- Species profile and threats database (information about individual listed threatened species and ecological communities): www.environment.gov.au/sprat

Listed migratory species

An action will require approval if the action has, will have, or is likely to have a significant impact on a listed migratory species. Note that some migratory species are also listed as threatened species. The criteria below are relevant to migratory species that are not threatened.

Significant impact criteria

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

What is important habitat for a migratory species?

An area of 'important habitat' for a migratory species is:

- a. habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species, and/or
- b. habitat that is of critical importance to the species at particular life-cycle stages, and/or
- c. habitat utilised by a migratory species which is at the limit of the species range, and/or
- d. habitat within an area where the species is declining.

What is an ecologically significant proportion?

Listed migratory species cover a broad range of species with different life cycles and population sizes. Therefore, what is an 'ecologically significant proportion' of the population varies with the species (each circumstance will need to be evaluated). Some factors that should be considered include the species' population status, genetic distinctiveness and species specific behavioural patterns (for example, site fidelity and dispersal rates).

What is the population of a migratory species?

'Population', in relation to migratory species, means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries including Australia.

Further information on Listed Migratory Species

- General information on listed migratory species is available on the Department's website: www.environment.gov.au/epbc/protect/migratory.html

Wetlands of international Importance

Approval is required for an action occurring within or outside a declared Ramsar wetland if the action has, will have, or is likely to have a significant impact on the ecological character of the Ramsar wetland.

A 'declared Ramsar wetland' is an area that has been designated under Article 2 of the Ramsar Convention or declared by the minister to be a declared Ramsar wetland under section 16 of the EPBC Act.

The 'ecological character' is the combination of the ecosystem components, processes and benefits/ services that characterise the wetland at a given point in time. The phrase 'at a given point in time' refers to the time of designation for the Ramsar List.

Descriptions of the ecological character of listed Ramsar wetlands can be obtained from the Australian wetlands database at: www.environment.gov.au/water/wetlands/database/index.html

Significant impact criteria

An action is likely to have a significant impact on the ecological character of a declared Ramsar wetland if there is a real chance or possibility that it will result in:

- areas of the wetland being destroyed or substantially modified
- a substantial and measurable change in the hydrological regime of the wetland, for example, a substantial change to the volume, timing, duration and frequency of ground and surface water flows to and within the wetland
- the habitat or lifecycle of native species, including invertebrate fauna and fish species, dependant upon the wetland being seriously affected
- a substantial and measurable change in the water quality of the wetland – for example, a substantial change in the level of salinity, pollutants, or nutrients in the wetland, or water temperature which may adversely impact on biodiversity, ecological integrity, social amenity or human health, or
- an invasive species that is harmful to the ecological character of the wetland being established (or an existing invasive species being spread) in the wetland.

Further information on Ramsar wetlands

The following information on Ramsar wetlands is available on the Department's web site:

- General information: www.environment.gov.au/epbc/protect/wetlands.html
- Ramsar wetlands fact sheet (including list and general location map):
www.environment.gov.au/water/publications/environmental/wetlands/ramsar.html
- Australian wetlands database (including location maps and information for individual wetlands):
www.environment.gov.au/water/wetlands/database/index.html

The Commonwealth marine environment

An action will require approval if:

- the action is taken in a Commonwealth marine area and the action has, will have, or is likely to have a significant impact on the environment, or
- the action is taken outside a Commonwealth marine area and the action has, will have, or is likely to have a significant impact on the environment in a Commonwealth marine area.

A 'Commonwealth marine area' is defined in section 24 of the EPBC Act. Maps showing Commonwealth marine areas are available through the Department's website at www.environment.gov.au/epbc/protect/marine.html or by contacting the Department's community information unit on 1800 803 772.

Marine protected areas are marine areas which are recognised to have high conservation value. Actions in or near marine protected areas, or other areas with high conservation value, have a greater likelihood of significant impacts on the Commonwealth marine environment. A map of marine protected areas is available on the Department's web site:

www.environment.gov.au/coasts/mpa/index.html

Significant impact criteria

An action is likely to have a significant impact on the environment in a Commonwealth marine area if there is a real chance or possibility that the action will:

- result in a known or potential pest species becoming established in the Commonwealth marine area
- modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in a Commonwealth marine area results
- have a substantial adverse effect on a population of a marine species or cetacean including its life cycle (for example, breeding, feeding, migration behaviour, life expectancy) and spatial distribution
- result in a substantial change in air quality⁴ or water quality (including temperature) which may adversely impact on biodiversity, ecological integrity, social amenity or human health
- result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected, or
- have a substantial adverse impact on heritage values of the Commonwealth marine area, including damage or destruction of an historic shipwreck.

Further information on Commonwealth marine areas

The following information relevant to Commonwealth marine areas is available on the Department's web site:

- General information: www.environment.gov.au/epbc/protect/marine.html

World Heritage properties

Approval under the EPBC Act is required for any action occurring within or outside a declared World Heritage property that has, will have, or is likely to have a significant impact on the World Heritage values of the World Heritage property.

A 'declared World Heritage property' is an area that has been included in the World Heritage list or declared by the minister to be a World Heritage property. World Heritage properties are places with natural or cultural heritage values which are recognised to have outstanding universal value.

Example of World Heritage values – Kakadu National Park World Heritage property

The Kakadu National Park World Heritage property, located in the far north of Australia's Northern Territory, has both natural and cultural World Heritage values. These values include:

- diverse, expansive and relatively undisturbed natural landscapes, including coastal areas, river systems and floodplains, lowlands, wetlands, plateau complexes, escarpments and outliers
- diverse and relatively unmodified vegetation types, including open mangrove swamps, forest and woodlands, lowland and sandstone rainforests, shrubland and heath, wetland, riverine, floodplain and coastal vegetation
- diverse, endemic, relict and abundant plant and animal species
- extensive and diverse habitats, including open forest and woodlands, monsoon rainforest areas, heaths and shrublands, freshwater wetlands, mangrove and estuarine areas, foreshore and beach areas
- significant plant associations and plants with conservation significance
- animals with conservation significance, including mammals, reptiles, birds, invertebrates and fish
- exceptional natural beauty
- outstanding, diverse, unique and ancient Indigenous archaeological remains and rock art recording a continuous cultural development and environmental change, and
- a rich collection of Indigenous cultural sites with strong spiritual associations and connections to continuing practice of traditional beliefs.

A more comprehensive description of the World Heritage values of Kakadu National Park World Heritage Area can be found at: www.environment.gov.au/heritage/places/world/kakadu/values.html

Significant impact criteria

An action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

Examples

The following examples provide an indication of levels of impact on World Heritage values that are likely to be significant. They are not intended to be exhaustive.

World Heritage properties with natural heritage values

An action is likely to have a significant impact on natural heritage values of a World Heritage property if there is a real chance or possibility that the action will:

Values associated with geology or landscape	• damage, modify, alter or obscure important geological formations in a World Heritage property • damage, modify, alter or obscure landforms or landscape features, for example, by excavation or infilling of the land surface in a World Heritage property • modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilising mobile landforms, such as sand dunes, in a World Heritage property • divert, impound or channelise a river, wetland or other water body in a World Heritage property, and • substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body in a World Heritage property.
Biological and ecological values	• reduce the diversity or modify the composition of plant and animal species in all or part of a World Heritage property • fragment, isolate or substantially damage habitat important for the conservation of biological diversity in a World Heritage property • cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a World Heritage property, and • fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a World Heritage property.

Wilderness, natural beauty or rare
or unique environment values

- involve construction of buildings, roads, or other structures, vegetation clearance, or other actions with substantial, long-term or permanent impacts on relevant values, and
- introduce noise, odours, pollutants or other intrusive elements with substantial, long-term or permanent impacts on relevant values.

World Heritage properties with cultural heritage values

An action is likely to have a significant impact on cultural heritage values of a World Heritage property if there is a real chance or possibility that the action will:

Historic heritage values

- permanently remove, destroy, damage or substantially alter the fabric⁵ of a World Heritage property
- extend, renovate, refurbish or substantially alter a World Heritage property in a manner which is inconsistent with relevant values
- permanently remove, destroy, damage or substantially disturb archaeological deposits or artefacts in a World Heritage property
- involve activities in a World Heritage property with substantial and/or long-term impacts on its values
- involve construction of buildings or other structures within, adjacent to, or within important sight lines of, a World Heritage property which are inconsistent with relevant values, and
- make notable changes to the layout, spaces, form or species composition in a garden, landscape or setting of a World Heritage property which are inconsistent with relevant values.

⁵ 'Fabric' means physical material including structural elements and other components, fixtures, fittings, contents and items with historic value

Other cultural heritage values
including Indigenous heritage values

- restrict or inhibit the existing use of a World Heritage property as a cultural or ceremonial site causing its values to notably diminish over time;
- permanently diminish the cultural value of a World Heritage property for a community or group to which its values relate
- alter the setting of a World Heritage property in a manner which is inconsistent with relevant values
- remove, damage, or substantially disturb cultural artefacts, or ceremonial objects, in a World Heritage property, and
- permanently damage or obscure rock art or other cultural or ceremonial features with World Heritage values.

Notes:

- The above examples are general examples and their application will depend on the individual values of each World Heritage property. Alteration or disturbance which is small in scale may have a significant impact if a feature or component of a World Heritage property embodies values that are particularly sensitive or important.
- To have a significant impact on World Heritage values, it is not necessary for an action to impact upon the whole of a World Heritage property, all of the values of a World Heritage property, or a whole value of a World Heritage property. It is sufficient if an action is likely to have a significant impact on a part, element, or feature of a World Heritage property, which embodies, manifests, shows, or contributes to the values of that property.

Further Information on World Heritage properties

The following information on World Heritage properties is available on the Department's web site:

- General information: www.environment.gov.au/heritage/about/world/index.html

National Heritage places

Approval under the EPBC Act is required for any action occurring within, or outside, a National Heritage place that has, will have, or is likely to have a significant impact on the National Heritage values of the National Heritage place.

The National Heritage List contains places or groups of places with outstanding heritage value to Australia – whether natural, Indigenous or historic⁶ or a combination of these.

Example of National Heritage values—Brewarrina Aboriginal fish traps (Baiaames Ngunnhu)

The Brewarrina Aboriginal fish traps on the Barwon River in New South Wales, have indigenous National Heritage values. These values include:

- providing an example of a dry-stone fish trap of rare size, design and complexity
- demonstrating an unusual and innovative development in pre-European Aboriginal technology, which exhibits a thorough understanding of dry stone wall construction techniques, river hydrology and fish ecology
- providing a strong social, cultural and spiritual association with Aboriginal people
- demonstrating a delineation of responsibility for use and maintenance of particular traps between different aboriginal groups under Aboriginal law in accordance with the wishes of the ancestral creation being, Baiaame
- historical and current use as a significant meeting place for Aboriginal people with connections to the area, and
- demonstrating an unusual aspect of Indigenous tradition, arising from the association between an ancestral being and the creation of the built structures of the fish traps.

A more comprehensive description of the National Heritage values of the Brewarrina Aboriginal Fish Traps can be found at: www.environment.gov.au/heritage/places/national/brewarrina/index.html

Significant impact criteria

An action is likely to have a significant impact on the National Heritage values of a National Heritage place if there is a real chance or possibility that it will cause:

- one or more of the National Heritage values to be lost
- one or more of the National Heritage values to be degraded or damaged, or
- one or more of the National Heritage values to be notably altered, modified, obscured or diminished.

⁶ For historic built heritage places in the National Heritage List that are within the Australian jurisdiction, approval will be required where an action that has, will have or is likely to have a significant impact on the National Heritage values of the place will be taken by: a constitutional corporation; the Commonwealth or a Commonwealth agency; or a person for the purposes of trade or commerce between Australia and another country, between States, between Territories, or between a State and a Territory. There are no restrictions on the application of the EPBC Act in relation to natural or Indigenous heritage places in the National Heritage List, or places in a Commonwealth area or Territory, or outside the Australian jurisdiction.

Examples

The following examples provide an indication of levels of impact on National Heritage values that are likely to be significant. They are not intended to be exhaustive.

National Heritage places with natural heritage values

An action is likely to have a significant impact on natural heritage values of a National Heritage place if there is a real chance or possibility that the action will:

Values associated with geology or landscapes	• damage, modify, alter or obscure important geological formations in a National Heritage place • damage, modify, alter or obscure landforms or landscape features, for example, by clearing, excavating or infilling the land surface in a National Heritage place • modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilising mobile landforms, such as sand dunes in a National Heritage place • divert, impound or channelise a river, wetland or other water body in a National Heritage place, and • substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body in a National Heritage place; permanently damage or obscure rock art or other cultural or ceremonial features with World Heritage values.
Biological and ecological values	• modify or inhibit ecological processes in a National Heritage place • reduce the diversity or modify the composition of plant and animal species in a National Heritage place • fragment or damage habitat important for the conservation of biological diversity in a National Heritage place • cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a National Heritage place, and • fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a National Heritage place.

Wilderness, aesthetic, or other rare or unique environment values

- involve construction of buildings, roads or other structures, vegetation clearance, or other actions with substantial and/or long-term impacts on relevant values, and
- introduce noise, odours, pollutants or other intrusive elements with substantial and/or long-term impacts on relevant values.

National Heritage places with cultural heritage values

An action is likely to have a significant impact on historic heritage values of a National Heritage place if there is a real chance or possibility that the action will:

Historic heritage values

- permanently remove, destroy, damage or substantially alter the fabric⁷ of a National Heritage place in a manner which is inconsistent with relevant values
- extend, renovate, refurbish or substantially alter a National Heritage place in a manner which is inconsistent with relevant values
- permanently remove, destroy, damage or substantially disturb archaeological deposits or artefacts in a National Heritage place
- involve activities in a National Heritage place with substantial and/or long-term impacts on its values
- involve the construction of buildings or other structures within, adjacent to, or within important sight lines of, a National Heritage place which are inconsistent with relevant values, and
- make notable changes to the layout, spaces, form or species composition of a garden, landscape or setting of a National Heritage place in a manner which is inconsistent with relevant values.

Other cultural heritage values

- restrict or inhibit the continuing use of a National Heritage place as a cultural or ceremonial site causing its values to notably diminish over time
- permanently diminish the cultural value of a National Heritage place for a community or group to which its National Heritage values relate
- destroy or damage cultural or ceremonial, artefacts, features, or objects in a National Heritage place, and
- notably diminish the value of a National Heritage place in demonstrating creative or technical achievement.

⁷ 'Fabric' means physical material including structural elements and other components, fixtures, fittings, contents and items with historic value

National Heritage places with Indigenous heritage values

An action is likely to have a significant impact on Indigenous heritage values of a National Heritage place if there is a real chance or possibility that the action will:

Indigenous heritage values

- restrict or inhibit the continuing use of a National Heritage place as a cultural or ceremonial site causing its values to notably diminish over time
- permanently diminish the cultural value of a National Heritage place for an Indigenous group to which its National Heritage values relate
- alter the setting of a National Heritage place in a manner which is inconsistent with relevant values
- remove, destroy, damage or substantially disturb archeological deposits or cultural artefacts in a National Heritage place
- destroy, damage or permanently obscure rock art or other cultural or ceremonial, artefacts, features, or objects in a National Heritage place
- notably diminish the value of a National Heritage place in demonstrating creative or technical achievement
- permanently remove, destroy, damage or substantially alter Indigenous built structures in a National Heritage place, and
- involve activities in a National Heritage place with substantial and/or long-term impacts on the values of the place.

Notes:

- The above examples are general examples and their application will depend on the individual values of each National Heritage place. Alteration or disturbance which is small in scale may have a significant impact if a feature or component of a National Heritage place embodies values that are particularly sensitive or important.
- To have a significant impact on National Heritage values, it is not necessary for an action to impact upon the whole of a National Heritage place, all of the values of a National Heritage place, or a whole value of a National Heritage place. It is sufficient if an action is likely to have a significant impact on a part, element, or feature of a National Heritage place which embodies, manifests, shows, or contributes to the values of that place.

Further information on National Heritage places

The following information relevant to National Heritage places is available on the Department's web site:

- General information: www.environment.gov.au/epbc/protect/heritage.html
- Australian heritage places inventory: www.heritage.gov.au/ahpi

Nuclear actions

A nuclear action will require approval if it has, will have, or is likely to have a significant impact on the environment.

Significant impact criteria

All nuclear actions, as detailed in section 22 of the Act, should be referred to the Department of the Environment for a decision on whether approval is required.

These actions are:

- establishing or significantly modifying a nuclear installation or a facility for storing spent nuclear fuel
- transporting spent nuclear fuel or radioactive waste products arising from reprocessing;
- establishing or significantly modifying a facility for storing radioactive waste products arising from reprocessing
- mining or milling uranium ore
- establishing or significantly modifying a large-scale disposal facility for radioactive waste
- de-commissioning or rehabilitating any facility or area in which an activity described above has been undertaken, or
- establishing, significantly modifying, decommissioning or rehabilitating a facility where radioactive materials at or above the activity level specified in regulation 2.02 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) are, were, or are proposed to be stored.

Electronic copies of the EPBC Act and EPBC Regulations can be accessed from the Department's web site at:
www.environment.gov.au/epbc/about/index.html

Great Barrier Reef Marine Park

An action will require approval if:

- the action is taken in the Great Barrier Reef Marine Park and the action has, will have, or is likely to have a significant impact on the environment, or
- the action is taken outside the Great Barrier Reef Marine Park and the action has, will have, or is likely to have a significant impact on the environment in the Great Barrier Reef Marine Park.

The Great Barrier Reef Marine Park is established under the *Great Barrier Reef Marine Park Act 1975*. Maps showing the Great Barrier Reef Marine Park are available from www.gbrmpa.gov.au.

The Great Barrier Reef Marine Park is an area recognised to have high conservation value.

What is the Environment?

‘Environment’ is defined in the EPBC Act as:

- a. ecosystems and their constituent parts including people and communities (‘ecosystem’ is defined in the EPBC Act as ‘a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functioning unit’)
- b. natural and physical resources
- c. qualities and characteristics of locations, place and areas
- d. heritage values of places (‘heritage value’ is defined in the EPBC Act as including ‘the place’s natural and cultural environment having aesthetic, historic, scientific or social significance, or other significance, for current and future generations of Australians.’ ‘Indigenous heritage value’ is defined as meaning ‘a heritage value of the place that is of significance to Indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history’), and
- e. the social, economic and cultural aspects of a thing mentioned in paragraphs (a), (b) or (c).

Significant impact criteria

An action is likely to have a significant impact on the environment of the Great Barrier Reef Marine Park if there is a real chance or possibility that the action will:

- modify, destroy, fragment, isolate or disturb an important, substantial, sensitive or vulnerable area of habitat or ecosystem component such that an adverse impact on marine ecosystem health, functioning or integrity in the Great Barrier Reef Marine Park results
- have a substantial adverse effect on a population of a species or cetacean including its life cycle (for example, breeding, feeding, migration behaviour, life expectancy) and spatial distribution
- result in a substantial change in air quality or water quality (including temperature) which may adversely impact on biodiversity, ecological health or integrity or social amenity or human health
- result in a known or potential pest species being introduced or becoming established in the Great Barrier Reef Marine Park
- result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, or social amenity or human health may be adversely affected, or
- have a substantial adverse impact on heritage values of the Great Barrier Reef Marine Park, including damage or destruction of an historic shipwreck.

Other protected matters potentially relevant to the Great Barrier Reef

- **The values of World Heritage properties** – The Great Barrier Reef is a World Heritage property
- **The values of National Heritage places** – The Great Barrier Reef is a National Heritage place
- **The ecological character of a Ramsar wetland** – a number of Ramsar wetlands are located adjacent to the Marine Park, including Shoalwater and Corio Bays and Bowling Green Bay
- **Listed threatened species and ecological communities** – a number of listed threatened species are located in the Marine Park
- **Listed migratory species** – a range of listed migratory species are found in the Marine Park
- **Commonwealth land** – a number of islands within the Marine Park are Commonwealth land
- **The environment of a Commonwealth marine area** – The majority of the Marine Park is within the Commonwealth marine area, and
- **Nuclear actions.**

Further information on the Great Barrier Reef Marine Park

- Further information on the Great Barrier Reef Marine Park is available on the Great Barrier Reef Marine Park Authority (GBRMPA) website: www.gbrmpa.gov.au
- General information: www.gbrmpa.gov.au

Note:

For actions/activities taken within the Great Barrier Reef Marine Park a permission may be required under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). A permission under the GBRMP Act may be required even if significant impact on the environment of the Great Barrier Reef is not likely. Further information is provided on the Great Barrier Reef Marine Park web site at www.gbrmpa.gov.au

Protection of water resources from coal seam gas development and large coal mining development

Information on the protection of water resources from coal seam gas development and large coal mining development

The draft *Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources* provides further details on the protection of water resources from coal seam gas and large coal mining developments website: www.environment.gov.au/epbc/about/water-trigger.html.

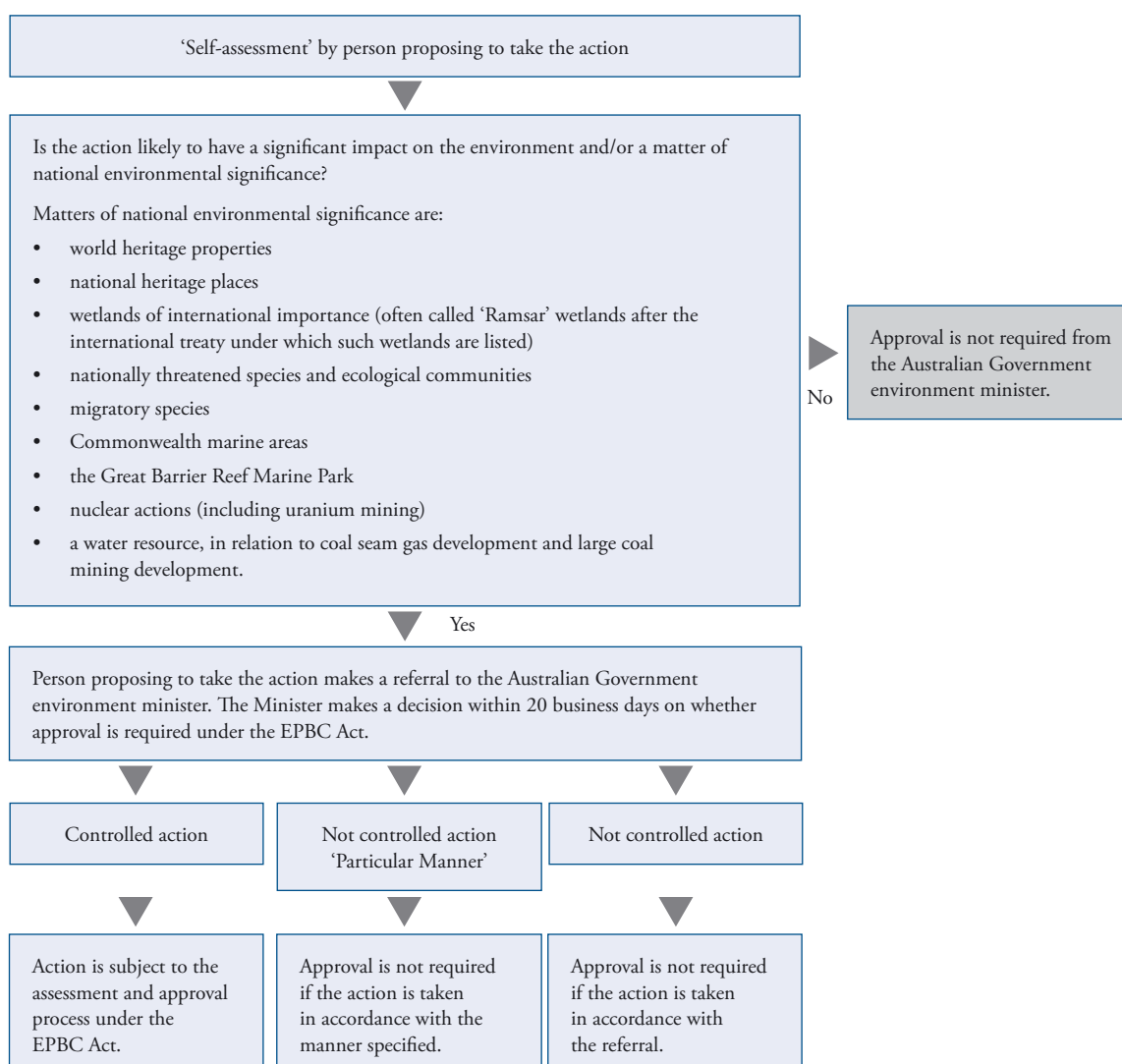
The referral, assessment and approval process

Referral process

If after undertaking a self-assessment you conclude that your action is likely to have a significant impact on a matter of national environmental significance, or if you are unsure, you should refer the action to the Australian Government environment minister. Substantial penalties apply for taking an action that has, will have or is likely to have a significant impact on a matter of national environmental significance without approval.

Referral forms and a guide to assist in filling out the referral form can be obtained from the Department's community information unit on 1800 803 772, or from the Department's website at: www.environment.gov.au/epbc/assessments/referral-form.html. The EPBC Act referral process is summarised in Figure 1 below.

Figure 1: EPBC Act referral process



After receiving a referral, the minister will decide whether the action is likely to have a significant impact on a matter of national environmental significance:

- if the minister decides that the action is likely to have a significant impact on a matter of national environmental significance, then the action requires approval under the EPBC Act (it is a controlled action), and
- if the minister decides that the action is not likely to have a significant impact on a matter of national environmental significance, then the action does not require approval under the EPBC Act (it is a not controlled action).⁸

The minister may also decide that an action is not likely to have a significant impact on a matter of national environmental significance, and does not require approval under the EPBC Act, because it will be taken in a 'particular manner'. However, the action must be undertaken in a way that is consistent with the manner specified in this decision, or penalties apply.⁹

The minister is generally required to make a binding decision on whether an action requires approval within 20 business days of receiving a referral. If the minister's decision is that an action does not require approval, a person will not contravene the Act if the action is taken in accordance with that decision.

Assessment and approval process

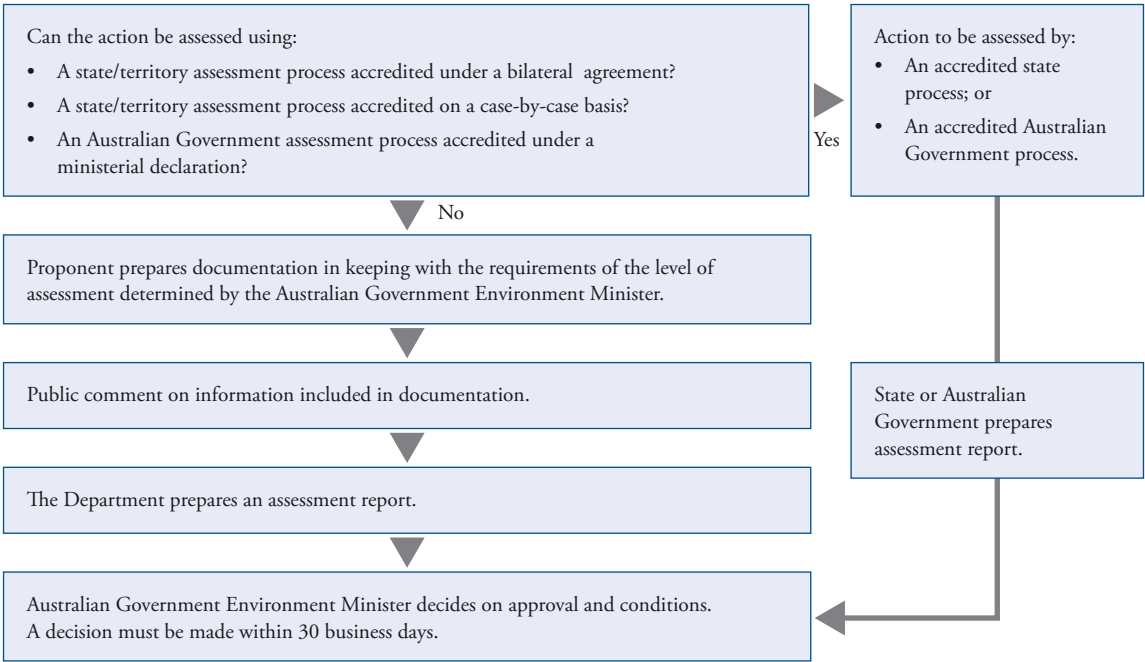
If the minister decides that an action requires approval, then an environmental assessment of the action must be carried out. If a bilateral agreement is in place the action may be assessed by the state or territory in which the action is to be undertaken, using the processes accredited under the bilateral agreement. If a ministerial declaration is in place accrediting another Australian Government assessment process, the action may be assessed by the process accredited under that declaration. Otherwise, the assessment will be undertaken by one of a range of assessment approaches outlined under the EPBC Act. An assessment report will then be prepared.

After considering the environmental assessment report, the Australian Government Environment minister decides whether to approve the action, and what conditions (if any) to impose. The EPBC Act assessment and approval process is summarised in Figure 2.

⁸ Please note that, regardless of whether approval is required under the EPBC Act, separate environmental assessment and approval may be required under state/territory and/or local government legislation.

⁹ More information about particular manner decisions can be found in the Practice Guide entitled *Application of 'Particular Manner' decision making under the EPBC Act*, available on the Department's web site at: www.environment.gov.au/epbc/publications/manner.html

Figure 2: EPBC Act assessment and approval process



General information

A range of other EPBC Act policy statements are available to assist you in determining whether you are likely to have a significant impact on a matter of national environmental significance.

EPBC Act Policy Statements can be obtained from the Department's community information unit on 1800 803 772 or can be downloaded from the Department's web site at: **www.environment.gov.au/epbc/publications/guidelines.html**

The Australian Natural Resources Atlas provides national, state and regional information about a range of environmental and land-use attributes: **www.anra.gov.au/**

Please note that the Department does not hold all of the information that may be required to assess the impacts of your action. state and territory government agencies also have a range of information that may be useful, including geographic information.

The sectoral information contained in the Appendix to these guidelines is intended to illustrate the application of the criteria for matters of national environmental significance in relation to specific industry sectors, and should be read in the context of, and in conjunction with, the significant impact criteria in these guidelines.

Appendix – Information for industry sectors

The purpose of this Appendix is to provide more detailed assistance in relation to whether, and in what circumstances, some selected sectoral activity is likely to have a significant impact on a matter of national environmental significance.

The examples in this appendix should be read in conjunction with the significant impact criteria in the guidelines and should not be taken to be conclusive.

This guidance relates to the following sectoral activities:

- mineral exploration
- urban development
- local government, and
- marine activities.

EPBC Act policy statements which provide further guidance in relation to specific industry sectors¹⁰ are available from the Department's community information unit or the Department's web site:

www.environment.gov.au/epbc/publications/guidelines.html

Mineral exploration activity

Terrestrial exploration

Surface geological mapping examining rock outcrops and exposures, which may involve the taking of small samples, would not normally be expected to have a significant impact on a matter of national environmental significance.

Surface geochemical sampling, using both regular grid pattern and irregular pattern methods to collect small samples, would not normally be expected to have a significant impact on a matter of national environmental significance.

Surface geophysical surveys including airborne surveys, gravity, magnetic and electromagnetic surveys, would not normally be expected to have a significant impact on a matter of national environmental significance.

Other geophysical surveys that include seismic surveys would not normally be expected to have a significant impact on matters of national environmental significance. However, an action involving seismic surveys (shot hole method or vibroseis) may have a significant impact on an endangered or critically endangered species if, for example, it is likely to damage habitat critical to the survival of the species or disrupt the breeding cycle of a population of the species. Such an action may also have a significant impact on listed threatened ecological communities where, for example, it adversely impacts on habitat. (See the criteria relating to endangered and critically endangered species and ecological communities.)

¹⁰ Industry-specific guidelines that have been, or are being, developed include guidelines for offshore seismic operations, offshore aquaculture, wind farms, agricultural land clearance, urban development, and actions undertaken by local government.

All exploratory drilling (including new field, wildcat, and appraisal drilling, auger, rotary air blast (RAB), open hole percussion, reverse circulation (RC), diamond drilling and wide diameter drilling), including the construction of drill pads, would not be expected to have a significant impact on a matter of national environmental significance where the discharges, emissions and waste from the drilling are contained and managed in an environmentally sensitive manner. However, an action involving exploratory drilling may have a significant impact on an endangered or critically endangered species if, for example, it is likely to damage habitat critical to the survival of the species or disrupt the breeding cycle of a population of the species. Such an action may also have a significant impact on listed threatened ecological communities where, for example, it adversely impacts on habitat. (See the criteria relating to endangered and critically endangered species and ecological communities.) Such an action may also have a significant impact if it occurs within a National Heritage place, for example, if it disturbs Indigenous burial grounds or artefacts with National Heritage values. It will also be necessary to consider the Ramsar criteria if the exploratory drilling is to occur in or immediately adjacent to a Ramsar wetland.

Costeaning and trenching (small scale) would not be expected to have a significant impact on a matter of national environmental significance where small trenches are excavated using hand tools. However, an action involving costeaning and trenching (small scale) may have a significant impact on an endangered or critically endangered species if, for example, it is likely to damage critical habitat for the species or disrupt the breeding cycle of a population of the species. Such an action may also have a significant impact on listed threatened ecological communities where, for example, it adversely impacts on habitat. (See the criteria relating to endangered and critically endangered species and ecological communities.) It will also be necessary to consider the National Heritage criteria and the Ramsar criteria if the costeaning or trenching is to occur in or immediately adjacent to a National Heritage place or a Ramsar wetland.

Costeaning and trenching (large scale), surface bulk sampling (such as establishing a trial pit, sinking shafts or driving decline tunnels deep into the target) and underground exploration and development (such as underground sampling, drilling and mine construction): whether or not these exploration activities are likely to have a significant impact on a matter of national environmental significance will depend upon the particular facts and circumstances of the proposed activity. It is necessary to apply the criteria in the guidelines to assist in determining when an action is likely to have a significant impact on a matter of national environmental significance. For example, if surface bulk sampling occurs in an area that is not in or near a Ramsar wetland, and if it is not damaging the habitat of a threatened species or important habitat for a migratory species, then the proposed exploration activity is not likely to have a significant impact on a matter of national environmental significance. However, if the proposed activity will result in the pollution of a Ramsar wetland then it is likely to have a significant impact on the ecological character of the Ramsar wetland.

Offshore exploration

Aerial surveys and diving for samples would not normally be expected to have a significant impact on a matter of national environmental significance.

Offshore exploratory drilling would be expected to have a significant impact if it is undertaken in an area that contains habitat for threatened or migratory species and the seismic activity is likely to interfere with breeding, feeding or migration, or if habitat critical to the survival of the species (or important habitat for a migratory species) is damaged by the drilling. Offshore exploratory drilling would also be expected to have a significant impact on a Ramsar wetland or the Commonwealth marine environment if drilling occurs in a sensitive area (for example, sea mounts and other areas with high biodiversity value or which contain important habitat). Offshore exploratory drilling may also potentially have a significant impact on historic shipwrecks in the Commonwealth marine area.

Other issues

The above discussion does not address issues associated with mineral exploration activity in a World Heritage property or National Heritage place. In addition, it does not take into account any impacts associated with gaining access to the exploration site, especially where heavy machinery is used.

Urban development

Repairing, maintaining, or making alterations to **commercial and domestic buildings and properties** would not be expected to have a significant impact on a matter of national environmental significance, unless the repairs, maintenance or alterations are being made to a World Heritage property or a National Heritage place and are inconsistent with the values of the property or place.

Repairing and maintaining existing distribution infrastructure for **utilities for power, water and sewage** would not normally be expected to have a significant impact on a matter of national environmental significance, unless there is a substantial expansion or modification of these utilities.

Establishing a **new subdivision** in an existing suburb, with established infrastructure designed to manage environmental impacts, upstream of a large Ramsar wetland (such as the Moreton Bay Ramsar wetland) would not be expected to have a significant impact on the wetland.

By contrast, establishing a **new subdivision** in the vicinity of a smaller Ramsar wetland is likely to have a significant impact on the wetland if it involves extensive vegetation clearing, clearing riparian vegetation, modifying the flow of water to or within the wetland, or if it will result in significant discharges of pollutants into the wetland.

Establishing a **new subdivision** within or adjacent to the Great Barrier Reef Marine Park, a World Heritage property or a National Heritage place is likely to have a significant impact on the World or National heritage values of that property or place.

Building a house on land in an existing subdivision in the vicinity of a Ramsar wetland or a World Heritage property would not normally be expected to have a significant impact on these matters of national environmental significance.

However, **building a house** in close proximity to a National Heritage place may have a significant impact on the values of the place, in particular where the place is located in a non-urban environment or where the proposed development would obstruct or detract from the viewing axes of the heritage place, where applicable.

Proposed urban development for a **housing subdivision or an industrial estate** on an area which contains nationally listed threatened species or ecological communities, or immediately adjacent to the Great Barrier Reef Marine Park, is likely to be significant under the EPBC Act and should be referred to the minister.

Local government

Maintaining existing facilities such as visitor centres and roadside facilities would not be expected to have a significant impact on a matter of national environmental significance.

Routine vegetation management to maintain existing roads in or adjacent to a World Heritage property, a National Heritage place, a Ramsar wetland or a listed threatened species or ecological community would not normally be expected to have a significant impact on a matter of national environmental significance.

A proposed **new road** through a World Heritage property, a National Heritage place, or a Ramsar wetland or a road that would require clearing of native vegetation that contains nationally listed threatened species or ecological communities is likely to be significant under the EPBC Act and should be referred to the minister. It will also be necessary to consider the environment of the Great Barrier Reef Marine Park if the proposed new road occurs immediately adjacent to the Great Barrier Reef Marine Park.

Where **road verge maintenance** is carried out regularly (for example, every one or two years) it would not be expected to have a significant impact on a critically endangered or endangered plant species.

On the other hand, if a population of a **critically endangered or endangered plant species** becomes established on a road verge (because the verge has not been graded or weeded for a number of years), then clearing that road verge is likely to have a significant impact on a matter of national environmental significance.

Widening an existing road would not normally be expected to be significant under the EPBC Act where the road verge has previously been cleared or the vegetation beside the road has been heavily modified. However, if road widening would require removal of native vegetation that contains critically endangered or endangered plant species or ecological communities, it is likely to have a significant impact and should be referred to the minister.

Development of a tourist resort in or adjacent to the Great Barrier Reef Marine Park, a World Heritage property or a National Heritage place is likely to be significant under the EPBC Act and should be referred to the minister. However, a **residential development** such as a block of units or other accommodation in an existing city or coastal town would not normally be expected to have a significant impact on an adjacent World Heritage property.

Marine activities

Otherwise lawful **recreational fishing and recreational boating** would not normally be expected to have a significant impact on a matter of national environmental significance.

Routine ship transits where appropriate precautions have been taken against translocating potential pest species would not normally be expected to have a significant impact on a matter of national environmental significance.

Ballast water operations from vessels in Australian waters, undertaken in accordance with an approved Australian Government arrangement for the management of ballast water, would not normally be expected to have a significant impact on the Commonwealth marine environment.

Small scale infrastructure projects such as new jetties within an existing port would not normally be expected to have a significant impact on a matter of national environmental significance.

Large scale infrastructure projects such as a large pontoon, new aquaculture proposals, construction of a jetty, or a tourist facility (for example, a marina) in the Great Barrier Reef Marine Park may have a significant impact on the environment of the Great Barrier Reef Marine Park and should be referred to the minister.

Expansion of an existing port which requires land reclamation or spoil disposal in a World Heritage property, a National Heritage place, in or adjacent to the Great Barrier Reef Marine Park, a Ramsar wetland or an area containing nationally listed threatened species or ecological communities, or which involves modifying an area of important habitat for a nationally listed migratory species, is likely to have a significant impact on a matter of national environmental significance.

Construction of a new port in a Commonwealth marine area, in or adjacent to the Great Barrier Reef Marine Park, a World Heritage property, or a National Heritage place is likely to have a significant impact on a matter of national environmental significance.

Dredging of a new shipping channel through a World Heritage property, a National Heritage place, through or next to the Great Barrier Reef Marine Park, a Ramsar wetland, or an area containing nationally listed threatened species or ecological communities, or which involves modifying an area of important habitat for a nationally listed migratory species, is likely to have a significant impact on a matter of national environmental significance.

Dredging to maintain existing navigational channels would not normally be expected to have a significant impact on the environment where the activity is undertaken as part of normal operations and the disposal of spoil does not have a significant impact.



Climate Change Statement

Pacific Green is committed to addressing climate change and acknowledges the crucial role industry must play in mitigation and adaptation to safeguard the wellbeing of people and planet.

We support the Paris Agreement's goal to limit global warming to well below 2°C above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5°C.

As global renewable energy leaders, we take our role as enablers of a decarbonised future seriously. We understand that while our assets are integral to the transition to a clean energy future, our assets also rely on energy intensive industries to source and manufacture materials, construct our energy parks, and manage their end of life.

We are committed to reducing our greenhouse gas emissions both in our own operations, and through working with our supply chain. We are in the process of better understanding our greenhouse gas emission sources and will integrate climate change considerations into our business, including leadership responsibilities, risk management, procurement and supply chain engagement, training, reporting and improvement.

We also understand that our business must be ready to adapt to a changing climate. Understanding how the climate may impact on our business, projects and stakeholders is vital to ensure we stand ready to manage the physical and transitional risks of climate change. We have committed to undertaking a climate change risk assessment to better understand these risks, as well as to identify any climate-related opportunities.

Key commitments and governance

- Our climate change commitments and KPIs can be found in our Sustainability Approach.
- Governance and oversight for our climate change commitments is covered in our Sustainability Policy.

Transparency and reporting

We plan to report our climate-related performance and progress in alignment with the Australian Sustainability Reporting Standards (ASRS) and other relevant frameworks.

We are committed to ensuring transparent and accessible communication with stakeholders about our climate change initiatives and outcomes.

Sustainability Policy and Management Approach

Pacific Green is accelerating the global energy transition away from fossil fuels towards achieving net zero emissions. The growing demand for energy storage is a central aspect of Pacific Green's strategy and is crucial for reliability and balancing energy supply-demand.

Through our sustainability policy and approach, Pacific Green is committed to ensuring our own operations are as sustainable as the net-zero outcomes we are delivering for the market.

Introduction

This policy outlines Pacific Green's commitment to sustainability and its importance. This policy covers Pacific Green's conduct as a company in relation to our operations, employees, stakeholders and supply chain.

This policy has been reviewed and approved by the Company Board. The policy and its delivery is overseen by the Pacific Green Sustainability Committee who in turn report to the company Board

Our Sustainability Vision and Mission

Our mission is to design, build, and operate grid-scale energy storage assets that integrate seamlessly with the grid and renewable energy sources, providing efficient, scalable solutions to accelerate the net-zero transition.

Within our own operations, Pacific Green is committed to minimising environmental impact while fostering community engagement and social value in the regions where our projects are based. At a broader level, we are committed to collaborating with industry and government to drive green energy innovation.

Through our efforts, Pacific Green aims to create lasting value for our stakeholders and contribute meaningfully to improve sustainability outcomes for people and planet.

Core Sustainability Principles

Underpinning Pacific Green's sustainability vision and mission are our environmental, social, and governance principles.

Environmental stewardship and climate change

- Mitigate global Green House Gas (GHG) emissions by delivering renewable energy solutions.
- Minimise impact, and where possible deliver a net-benefit, to local land and biodiversity where we operate.

Social responsibility

- Earn and maintain social license at each of our assets through tangible community engagement, local employment and investment, and stakeholder collaboration.

Governance

- Maintain the highest level of ethics, accountability, and transparency across business operations in line with expectations of our stakeholders.

Delivery and management of our sustainability policy

Identifying materiality and setting targets

Pacific Green has identified initial group level Environmental, Social and Governance (ESG) materiality to aid our goal setting and reporting. To do this, key industry materiality guidance was referenced, while the general sustainability context of our operations was also considered.

Guidance was derived from:

- The Sustainability Accounting Standards Board (SASB) Electrical Utilities & Power Generators Standard and Fuel Cells and Industrial Batteries Standard.
- Sustainable Development Goals, primarily: SDG 7: Affordable and Clean Energy. SDG 12: Responsible Consumption and Production, SDG 13: Climate Action.
- International Energy Agency (IEA) Energy Storage Technology Roadmap guidance on material considerations for energy storage technologies.

From this foundation, Pacific Green is currently finalising our initial sustainability plan, including near-term Key Performance Indicators (KPIs) and long-term goals. Our interim approach and targets can be found below in the section titled “Our approach to sustainability performance and disclosure”.

Monitoring and reporting our continual improvement

Pacific Green is committed to publishing an annual sustainability report, outlining our overall sustainability performance and progress against each of our set targets. Annual reporting is planned to start in 2025 in line with the commencement of our first operational project in Australia.

Governance and oversight

Annual sustainability action is overseen by the Sustainability Committee. The committee report to Pacific Green twice a year at a minimum and provide periodic updates as required. The Board will review and approve the Sustainability Policy and the Sustainability Report annually.

Our approach to sustainability performance and disclosure

Pacific Green is committed to meeting the requirements of our Sustainability Policy. To do this, we are currently developing a full sustainability approach which will establish meaningful systems, actions, and targets to meet our sustainability vision and mission.

The completion of initial materiality and associated action and targets has already begun and will be completed in 2026 in line with the launch of our first operational assets in Australia.

An interim sustainability action plan is featured below with indicative goals and performance targets. The information below is in development and has not yet been approved by the Board.

Our sustainability principles	Our materiality focus	Our Goals	Our KPIs
Environmental Stewardship and Climate Change	GHG Emissions and Climate Change	Control and reduce GHG emissions linked to our operations.	Maintain near-zero Scope 1 and Scope 2 emissions at operational BESS projects. Disclose Scope 1 and Scope 2 emissions at group and facility level annually. Map and assess our Scope 3 emissions and begin approach to reporting.
		Enable our direct offtakers and the NEM to accelerate decarbonisation.	Store and supply 100% renewable energy through our BESS facilities.
		Strengthen the resilience and adaptation capacity of our business to climate change.	Undertake climate risk and adaptation planning across all operational facilities in line with ASRS requirements.
	Waste and Hazardous Materials Management	Monitor and improve the management of waste and hazardous materials throughout the lifecycle of our facilities	TBC
	Land and Biodiversity Management	Deliver a net-benefit to local biodiversity on land where we operate.	Complete and deliver construction, operational, and decommissioning environmental management plans respectively.
	Product Design and Lifecycle Management		Complete LCAs for each facility upon commissioning.
Social Responsibility	Community Relations and Development	Earn and maintain social license at each of our projects.	Launch Community Investment Fund (CIF) for each respective operational facility. Set annualised CIF budget commitments per operational facility.
	Stakeholder Consultation	Act transparently and openly with local communities and ensure they are consulted at all phases of the project through to decommissioning.	Completion of Stakeholder Consultation Framework. Completion of Community Engagement Plan for each respective project.

Our sustainability principles	Our materiality focus	Our Goals	Our KPIs
	Access and Affordability	Support the expansion of affordable and stable renewable energy for Australian households and businesses.	TBC
	Worker Health Safety and Wellbeing	Maintain a culture of safety to ensure adequate working conditions for our employees and subcontractors, especially at development construction phase.	TBC
Governance	Critical Incident Risk Management	Ensure risk and mitigation planning is implemented in relation to low-probability, high-social and environmental impact events linked with our facilities.	Embed risk management systems and processes. Complete and regularly update ERR.
	Systemic Risk Management	Ensure risk and mitigation planning is implemented to build resilience against externalities such as a collapse or weakening of the national energy infrastructure or market.	Undertake scenario planning and risk assessments. Complete and regularly update ERR.
	Supply chain management, materials sourcing and efficiency	Maintain engagement and oversight of our key material supply chains to ensure ethical sourcing, stable/secure supply, and supply chain efficiency.	Establish a supply chain mapping approach and undertake a deep-dive of priority material supply chains. Maintain and strengthen responsible sourcing policy and management plan.

Ends.