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Matters of National Environmental Significance Review, Heywood Battery Energy Storage System, Heywood, Victoria

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Atmos Renewables

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Cover Photograph

A photograph of the EPBC Act-listed Green-striped Greenhood *Pterostylis chlorogramma* found at a reference site (outside the study area).

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Introduction

Ecolink Consulting Pty Ltd was engaged by Atmos Renewables to review the likely impacts to Matters of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) that may occur as a result of the proposed construction of the Heywood Battery Energy Storage System (BESS) at 100 Golf Course Road, Heywood, Victoria.

The report is to assist with recommendations in relation to, and the preparation of, a voluntary referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the EPBC Act.

The review includes:

- A summary of the presence, or likely presence, of EPBC Act-listed flora and fauna species, as well as other biodiversity values, listed as MNES, which occur within the study area, or may be impacted by the proposed works;
- A summary of the conservation status and biology for the EPBC Act-listed flora and fauna species which may occur within the study area;
- A brief summary of the impact mitigation measures which are recommended to be implemented to minimise impacts to identified MNES within the study area; and
- A self-assessment of the likely significance of impacts to MNES, informed by the '*Significant Impact Guidelines 1.1; Environment Protection and Biodiversity Conservation Act 1999*' (Department of Sustainability Environment Water Population and Communities 2013).

The Proposed BESS

Ecolink Consulting has previously completed a Biodiversity Assessment at the location of the proposed BESS (Ecolink Consulting Pty Ltd 2025a). It identified the presence of patches of native vegetation and scattered trees, as well as potential habitats for threatened flora and fauna species in and around the study area (Ecolink Consulting Pty Ltd 2025a). The Biodiversity Assessment also recommended the avoidance and minimisation of impacts to these ecological values, where this was feasible (Ecolink Consulting Pty Ltd 2025a). Following these recommendations, the applicant has altered the construction footprint to avoid and minimise impacts to the biodiversity values previously identified, where possible. Despite this, the unavoidable loss of native vegetation is still required for the underground cable which connects the BESS to the Heywood Terminal Station.

The proposed cable is located within an area which is already disturbed by the power authority for vegetation maintenance (Plate 1). The midstorey and overstorey vegetation have been cleared, with only understorey vegetation, to approximately one metre in height, remaining within the powerline easement. The proposed trench for the cable will be approximately one metre wide, although a construction footprint of 10 metres is required for the spoil, machinery access, laydown areas and vehicle movements. The construction footprint will be approximately 800 metres long in total length, although only approximately 100 metres of the trench will be opened at a time to minimise impacts to fauna. A Fauna Management Plan will be prepared to manage impacts to fauna during construction. A Land Rehabilitation Plan will be prepared to revegetate the study area, and provide vegetation maintenance and weed management post-construction.

Previous Assessments

Previous Assessment for the BESS Project

A Flora and Fauna Assessment was undertaken by Biosis in 2023 and 2024 (Biosis Pty Ltd 2024). The Biosis (2024) assessment included a different study area than the current assessment. The BESS is still proposed to be located within the same approximate location as assessed by Biosis Pty Ltd (2024), but the cable is now to be located in a powerline easement, which is further east of treed vegetation assessed by Biosis (2024), and west of the existing powerlines.

The Biosis (2024) site assessment was conducted between 12–14 September 2023. A Vegetation Quality Assessment was conducted in accordance with the Department of Energy, Environment and Climate Action (DEECA) Habitat Hectare Assessment methodology (Department of Sustainability and Environment 2004) and the *Guidelines for the Destruction Removal or Lopping of Native Vegetation (Department of Environment Land Water and Planning 2017)*. A fauna assessment was completed, and a habitat assessment was undertaken for threatened fauna species (Biosis Pty Ltd 2024). A targeted flora survey was completed on 21–22 December 2023, during which the assessors walked five metre transects throughout the study area looking for threatened flora species.

Ecolink Consulting Pty Ltd completed a Biodiversity Assessment within the study area in 2025 (Ecolink Consulting Pty Ltd 2025a). Due to the revised study area, with the cable connection relocated to the existing powerline easement, a new Vegetation Quality Assessment was conducted using the Habitat Hectare Assessment methodology (Department of Sustainability and Environment 2004). on 6 August 2025. A fauna assessment was completed, concurrently with a habitat assessment was undertaken for threatened fauna species. A targeted threatened flora survey within the proposed powerline connection was undertaken on 6 August 2025 and 3–4 September 2025 (Ecolink Consulting Pty Ltd 2025b). All of the surveys undertaken by Ecolink Consulting were undertaken by Principal Ecologist, Simon Scott, and Consultant Ecologist, Liam McCormack, who are both suitably qualified and experienced to complete the work.

Due to the absence of midstorey and overstorey vegetation within the powerline easement, woodland bird and bat habitats were considered to be avoided. Targeted surveys for fauna were not undertaken, with assumed presence of threatened ground-dwelling mammals within the study area (as described below).

Previous Assessments within the Mount Clay State Forest

Ecolink Consulting is aware of one previous mammal survey relevant to the current Heywood BESS project. A survey of native mammals was undertaken for the Glenelg Ark project conducted by the Department of Sustainability and the Environment (DSE, now known as DEECA) from 2005–2010 (Robley *et al.* 2011). The purpose of the project was to measure the success of fox control baiting on the recovery of native animal populations in far south-west Victoria (Robley *et al.* 2011). The survey was conducted across nearly 100,000 hectares of public land, including Hotspur State Forest,

Coboboonee National Park, Annya State Forest, Lower Glenelg National Park and Mount Clay State Forest (which adjoins the study area: Robley *et al.* 2011).

The project compared the amount of fox activity during a free-feeding period (without poisoned baits), with the amount of fox activity after deploying poisoned baits (Robley *et al.* 2011). The percentage change in native mammal activity was also measured, using an occupancy modelling technique, informed by the use of sand pad monitoring and hair tube survey techniques (Robley *et al.* 2011). Heath Mouse *Pseudomys shortridgei* surveys included additional survey techniques, including additional hair tubes, Elliott trapping and camera surveys (Robley *et al.* 2011). Survey site selection included preferred habitats for Southern Brown Bandicoot *Isoodon obesulus obesulus*, Long-nosed Potoroo *Potorous tridactylus trisulcatus* and Heath Mouse (Robley *et al.* 2011) .

Summary of Biodiversity Values

A summary of the significant findings and biodiversity values recorded during the Biosis (2024) *Flora and Fauna Assessment,* as well as the Ecolink Consulting Pty Ltd (2025) Biodiversity Assessment and a targeted threatened flora survey (Ecolink Consulting Pty Ltd 2025b) is provided below:

- The study area is located within the Glenelg Shire municipality. It is zoned Farming Zone in the north of the study area, where the BESS will be located, Public Conservation and Resource Zone, where the proposed cable connection will pass through the Mount Clay State Forest, and Public Use Zone – Service and Utility where the proposed transmission line connects to the grid.
- The study area is covered by an Environmental Significance Overlay (ESO3). The ESO3 seeks to ensure that Southeastern Red-tailed Black Cockatoo *Calyptorhynchus banksii graptogyne* habitat is protected.
- The study area includes two bioregions: the Glenelg Plain bioregion, near Golf Course Road in the north-west of the study area, and the Victorian Volcanic Plain bioregion to its south, including the proposed transmission line.
- Twelve patches of native vegetation were recorded within the study area:
    - Two patches of Ecological Vegetation Class (EVC) 3: Damp Sands Herb-rich Woodland within the Glenelg Plain in the north; and
    - Two patches of EVC 23: Herb-rich Foothill Forest and eight patches of EVC 16: Lowland Forest within the Victorian Volcanic Plain in the south, including most of the powerline easement.
- One hundred and seven flora species were recorded during the current assessment (excluding the planted trees). This comprised 77 indigenous species and 30 exotic species. The private property was generally dominated by pastures comprising exotic grasses and environmental weeds, whereas native vegetation dominated the powerline easement in the south. The vegetation in this location did not exceed approximately one metre in height.
- Four threatened flora species, listed under the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) have previously been recorded within the study area, or have habitat within the study area:
    - Western Peppermint *Eucalyptus falciformis* (Vulnerable: FFG Act) occurs around the boundary of the private property in the north, with some small, regenerating plants in the powerline easement;
    - Parsley Xanthosia *Xanthosia leiophylla* (Endangered: FFG Act) occurs to the west of the study area and within the powerline easement portion of the study area*;*
    - Tiny Violet *Viola sieberiana* (Endangered: FFG Act) occurs to the west of the study area and may occur within the powerline easement portion of the study area (but was not recorded during the recent targeted flora survey (Ecolink Consulting Pty Ltd 2025b)); and
    - Hairy Boronia *Boronia pilosa* subsp. *torquata* (Endangered: FFG Act) occurs to the west of the study area and within the powerline easement portion of the study area.

All of these species are considered threatened under Victorian legislation, but are not listed under the EPBC Act. They are therefore not considered further in this report.

- One nationally threatened flora species, Green-striped Greenhood *Pterostylis chlorogramma* (Vulnerable: EPBC Act, Endangered: FFG Act), was initially deemed to have a moderate likelihood of occurrence within the study area, however, the targeted flora surveys, undertaken at the appropriate time of the year and with sufficient intensity to detect the species' presence, did not record this species. The likely occurrence of Green-striped Greenhood has been subsequently been downgraded to unlikely.
- Twenty-three fauna species were recorded within the study area during the recent Biodiversity Assessment. This comprised 18 birds (one introduced; 17 native) and five mammals (two introduced and three native).
- There is a moderate to high likelihood that state or nationally threatened fauna species may overfly or utilise the study area including:
    - Birds:
        - Red-tailed Black-Cockatoo (south-eastern) (Endangered: EPBC Act, Endangered: FFG Act);
        - White-throated Needletail *Hirundapus caudacutus* (Vulnerable: EPBC Act, Endangered: FFG Act);
        - Gang-gang Cockatoo *Callocephalon fimbriatum* (Endangered: EPBC Act, Endangered: FFG Act);
        - Powerful Owl *Ninox strenua* (Vulnerable: FFG Act); and,
        - Blue-winged Parrot *Neophema chrysostoma* (Vulnerable: FFG Act).
    - Bats:
        - Southern Bent-winged Bat (southern ssp.) *Miniopterus orianae bassani* (Critically Endangered: EPBC Act, Critically Endangered: FFG Act); and,
        - Grey-headed Flying Fox *Pteropus poliocephalus* (Vulnerable: EPBC Act, Vulnerable: FFG Act).
    - Ground-dwelling mammals:
        - Swamp Antechinus *Antechinus minimus maritimus* (Vulnerable: EPBC Act, Vulnerable: FFG Act);
        - Southern Brown Bandicoot (Endangered: EPBC Act, Endangered: FFG Act);
        - Long-nosed Potoroo (Vulnerable: EPBC Act, Critically Endangered: FFG Act); and,
        - Heath Mouse (Endangered: EPBC Act, Endangered: FFG Act).

It was concluded that the likelihood of occurrence for other threatened fauna species that have historically occurred within the landscape was low. For example, Spot-tailed Quoll *Dasyurus maculatus maculatus,* which is only rarely recorded in south-western Victoria (Menkhorst 2001), would be, at best an occasional or vagrant visitor, without a resident population. Impacts to other species that do persist within the landscape, but do not have important habitat within the study area, would be negligible (for example, impacts to birds and bats are unlikely or limited as there are no proposed impacts to mature trees within the study area).

The highest potential for impact was to ground-dwelling mammals. The Glenelg Ark project, undertook surveys for ground-dwelling mammals within the Mount Clay State Forest (amongst other locations) (Robley *et al.* 2011). Whilst the survey techniques deployed during this study did not allow for actual population estimates, it showed that both Long-nosed Potoroo and Southern Brown Bandicoot detection (and therefore probability) was approximately 10% prior to baiting, but increased to more than approximately 30% after fox baiting at Mount Clay State Forest (higher than any of the other survey sites) (Robley *et al.* 2011). Hair tube surveys showed a similar increase in observation rate, with Long-nosed Potoroos being present on more than 31.3/100 hair tube nights, and Southern Brown Bandicoots being present for 18.8/100 hair tube nights (Robley *et al.* 2011). The camera surveys showed Long-nosed Potoroos were present for 17.6/100 camera trap nights and Southern Brown Bandicoots were present for 6.7/100 camera trap nights (Robley *et al.* 2011). These results, when combined with historic records of these species within the study area, and the suitable habitat observed within the study area, show that these species have a high likelihood of occurrence within the powerline easement portion of the study area.

Elliott trapping is generally not a suitable survey technique for Long-nosed Potoroos or Southern Brown Bandicoots, but is suitable for the smaller Swamp Antechinus and Heath Mouse. Despite this, neither Heath Mouse, nor Swamp Antechinus, were recorded using any of the survey techniques deployed during the surveys (Robley *et al.* 2011). These results suggest that these species are less common within the landscape and have only a low to moderate likelihood of occurrence within the study area.

Impacts to resident ground-dwelling mammals may occur where there are impacts to native vegetation caused by the installation of the underground cable, within its easement. The project proposes to proceed on the basis that Swamp Antechinus, Southern Brown Bandicoot, Long-nosed Potoroo and Heath Mouse present and the impact assessment for these species has been undertaken on the assumption of their presence in the study area.

Spot-tailed Quolls were not detected within the Mount Clay State Forest during the Glenelg Ark project, and the results support the findings of the Biodiversity Assessment that Spot-tailed Quoll is unlikely to occur within the study area (Ecolink Consulting Pty Ltd 2025a).

Proposed Impact Mitigation Measures

In order to minimise potential impacts to MNES listed under the EPBC Act, the proponent is committed to implementing:

- A Fauna Management Plan to manage fauna encountered during the construction of the powerline connection. This will be used to manage potential impacts (including minimising impacts to habitat and protecting animal welfare) to fauna including Swamp Antechinus, Southern Brown Bandicoot, Long-nosed Potoroo and Heath Mouse;
- A Rehabilitation Plan to ensure that areas of ground disturbance for the proposed works are successfully recolonised and/or revegetated with appropriate vegetation, and ensure that weeds are managed post-construction; and
- A Construction Environment Management Plan (or equivalent) to manage construction works and potential impacts to biodiversity values through protection of retained native vegetation, maintaining animal welfare, managing off-site impacts and controlling the spread of weeds (Ecolink Consulting Pty Ltd 2025a).

Potential indirect impacts will also be managed via:

- Implementation of a Risk Management Plan informed by the *Design Guidelines and Model Requirements: Renewable Energy Facilities v4 (2023)* which manages the risk of fire starting within the BESS area and causing impacts to flora and fauna within Mount Clay State Forest;
- The Hydrology and Stormwater Management Strategy will be implemented to drain stormwater to a retarding basin in the east;
- Light increases will be designed in accordance with the National Light Pollution Guidelines for Wildlife (DCCEEW 2023), which, combined with the radiant heat wall (a visual barrier) on the southern extent of the BESS area, is unlikely to result in substantial additional upward or outward glow which would be visible from wider areas within Mount Clay State Forest or the Narrawong Flora Reserve; and
- Noise increases are not expected to be audible from the most parts of the State Forest and no more intrusive than the existing Heywood Terminal Station at the northern portion of the reserve. The soundscape near the Terminal Station will be dominated by the Terminal Station noise emissions rather than the proposed BESS, therefore the presence of the Action is not expected to adversely impact on wildlife inhabiting the northern part of the Mount Clay State Forest or the Narrawong Flora Reserve.

Matters of National Environmental Significance

The Biodiversity Assessment identified up to five MNES which may be significantly impacted by the proposed cable connection through the Mount Clay State Forest. These species are further discussed below.

Green-striped Greenhood *Pterostylis chlorogramma* (Vulnerable: EPBC Act)

The Green-striped Greenhood is approximately 20–45 centimetres tall (cover photo) (Royal Botanic Gardens Melbourne 2025). The stem contains between 5 and 9 lanceolate leaves, which are up to 6 centimetres long and 6 millimetres wide (Royal Botanic Gardens Melbourne 2025). It contains between one and seven helmet shaped flowers (Royal Botanic Gardens Melbourne 2025). The flowers are between 1.5–1.8 centimetres long, and are shiny and translucent, with dark green stripes (Royal Botanic Gardens Melbourne 2025). Flowering occurs from July to early September and plants reproduce entirely from seed (Department of Climate Change Energy the Environment and Water 2024).

Green-striped Greenhoods grow in moist areas of heathy and shrubby forest, on well-drained soils (Royal Botanic Gardens Melbourne 2025). Apparently localized in Victoria, but its exact range is uncertain due to confusion with closely allied species. There are nine populations of the Green-striped Greenhood confirmed, with each population containing fewer than 100 individuals (Duncan *et al.* 2009). A disjunct population, containing up to 50 plants, is known to occur in the Mount Clay State Forest (Department of Climate Change Energy the Environment and Water 2024). The Action Statement for this species states that all naturally occurring populations are key source populations for dispersal, and necessary for maintaining genetic diversity (Department of Climate Change Energy the Environment and Water 2024). Due to the high possibility of extinction, it is reasonable to consider all populations of this species to be 'important' (Duncan *et al.* 2009).

This species was not recorded during the targeted flora surveys, which were undertaken during the flowering season of the species, and with a reference site confirming its flowering (Ecolink Consulting Pty Ltd 2025b). It is concluded that this species is unlikely to occur within the study area and is not considered further within this report.

Swamp Antechinus *Antechinus minimus maritimus* (Vulnerable: EPBC Act)

The Swamp Antechinus is a small, carnivorous marsupial with a head to body length of 95–140 millimetres, and a tail length which is 70 percent of the head to body length (Menkhorst 2001). It has a long, slender muzzle, long foreclaws, short ears that do not protrude far beyond the fur, and pale eyerings (Menkhorst 2001). The upperparts are brown with a yellow or rufous wash, particularly on the rump, flanks and hindlegs, with paler buff or grey-yellow underparts and pale claws (Menkhorst 2001). Mating typically occurs in May June or July followed by a complete die-off of males (Menkhorst 2001).

The Swamp Antechinus has a highly fragmented distribution in coastal areas, ranging from near Robe in South Australia, to Wilson's Promontory (and the nearby Great Glennie, Rabbit, Kanowna and Snake

Islands) in Victoria, with isolated records extending inland as far as Casterton in western Victoria, the Otway Ranges, Korumburra and Gembrook (Menkhorst 2001; Threatened Species Scientific Committee 2016b).

The Swamp Antechinus is an insectivorous marsupial. It mainly occurs in damp areas, particularly at sites with dense vegetation at about 1−2 metres above ground level (Wilson *et al.* 2001). Its habitat includes dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps and some shrubby woodlands (Menkhorst 2001), often in landscape settings with little exposure to the sun (Wilson *et al.* 2001). These habitats are not generally present within the study area, although dry heathlands, remnants of partially cleared woodlands, are present. However, this species has been recorded on 38 previous occasions within the vicinity of the study area (Figure 1), with the most recent record being from 2022 (Department of Energy Environment and Climate Action 2025).

The habitats for Swamp Antechinus within the study area were sub-optimal. They did not contain wet heathland, nor habitats with midstorey or overstorey vegetation exceeding about one metre in height. The site was relatively elevated, and did not contain gullies or wet depressions. It is concluded that this species has a low to moderate likelihood of occurrence within the study area. The project will proceed on assumed presence and mitigate potential impacts for this species.

Southern Brown Bandicoot *Isoodon obesulus obesulus* (Endangered: EPBC Act)

The Southern Brown Bandicoot is a small-medium ground-dwelling marsupial weighing between 400-1200 grams (Menkhorst 2001). It has a long, tapering snout, short solid body and pointed, short tail (Department of the Environment and Energy 2017). Ears are short and rounded, barely extending above the head. Its coarse fur varies in colour from grey-brown, to brindled brown and buff, often with black flecks through the coat and a creamy coloured underside (Menkhorst 2001). Southern Brown Bandicoots are omnivorous, feeding on invertebrates, plants (seeds, fruits and leaves), along with underground fruiting parts of fungi, where they leave characteristic conical pits (Menkhorst 2001). Breeding generally occurs from late winter to late summer, with two or three litters of 2-4 young (Menkhorst 2001).

Southern Brown Bandicoots are found across several habitat types including, heathy woodland, heathland, coastal scrub, sedgeland and sclerophyll forest with heathy understorey (Coates 2006; Department of the Environment and Energy 2017; Menkhorst 2001).

In Victoria, the species' remaining distribution is divided into five major groups, or loose sub-populations, centred around Portland-Mount Gambier, Grampians National Park, Otway Ranges, South-central (Port Phillip-Westernport-Wilson's Promontory) and East Gippsland (Coates 2006; Coates *et al.* 2008). Southern Brown Bandicoots have previously been recorded within the vicinity of the study area on 37 occasions (Figure 1), with the most recent record being from 2019 (Department of Energy Environment and Climate Action 2025).

The habitats for Southern Brown Bandicoots within the study area were moderate to high. They provided suitable foraging habitat, with nearby, denser, vegetation to provide refuge for the species

if threatened. The project will proceed on assumed presence and mitigate potential impacts for this species.

Long-nosed Potoroo *Potorous tridactylus tridactylus* (Vulnerable: EPBC Act)

Long-nosed Potoroos are a medium-sized marsupial with a maximum body and head length of 34 centimetres and a tail length of 23 centimetres. It weighs between 660-1640 grams (Menkhorst 2001). The species has small, rounded ears, large eyes, and a long snout, with a bare tip (Menkhorst 2001). The body has two fur layers, a soft, short, dark grey fur on the back, with coarser hair protruding from it (Menkhorst 2001). The coarser, longer hairs can range in colour from yellow-white to brown, with a black tip (Menkhorst 2001). The underside of the animal is covered in coarse white fur, with a grey base layer (Menkhorst 2001).

All subspecies of the Long-nosed Potoroo are omnivorous, feeding on fruits, seeds, leaves, roots and flowers, as well as invertebrates (Department of Agriculture Water and the Environment 2022). The most significant food source for Long-nosed Potoroos (contributing between 30–90 percent of the diet) is sporocarps of hypogeal fungi (i.e. fruit bodies of underground fungi) (Department of Agriculture Water and the Environment 2022). Long-nosed Potoroos are nocturnal feeders (Department of Agriculture Water and the Environment 2022). They locate the underground fungi by smell and dig them up with their sharp front claws, leaving distinct, cup-shaped digging holes (Department of Agriculture Water and the Environment 2022). Long-nosed Potoroos can breed throughout the year, raising one joey per litter (Menkhorst 2001).

The Southern Long-nosed Potoroo has a broad and fragmented distribution holes (Department of Agriculture Water and the Environment 2022). It occurs between the Great Dividing Range, generally to 800 metres above sea level, and the coastal plains (Department of Agriculture Water and the Environment 2022). Habitats include wet and dry woodland, scrubland, coastal heathlands, and they are often recorded near creeks or gullies holes (Department of Agriculture Water and the Environment 2022).

Long-nosed Potoroos have been recorded on 118 previous occasions within the vicinity of the study area (Figure 1), as recently as 2023 (Department of Energy Environment and Climate Action 2025). A population of Long-nosed Potoroos is known to occur in the Mount Clay State Forest, and the Conservation Advice for this species confirms that this population is listed as an 'important' population (Department of Agriculture Water and the Environment 2022).

The habitats for Long-nosed Potoroos within the study area were moderate to high. They provided suitable foraging habitat, with nearby, denser, vegetation to provide refuge for the species if threatened. The project will proceed on assumed presence and mitigate potential impacts for this species.

Heath Mouse *Pseudomys shortridgei* (Endangered: EPBC Act)

The Heath Mouse is about 120- 125 millimetres in body length and weighs approximately 70 grams (Menkhorst 2001). The tail is shorter than the body, being approximately 100 millimetres in length

and has a distinct bicoloured pattern of dark above and white below (Menkhorst 2001). The belly is grey/white and the ears are dark and covered with soft fine hairs (Menkhorst 2001). The coat has long black guard hairs and brown underfur, giving it a brindled appearance (Threatened Species Scientific Committee 2016a). Breeding occurs in late Spring and Summer, with births in November to January (Menkhorst 2001)..

Described as a generalist herbivore (Braithwaite *et al.* 1978), the Heath Mouse's diet consists of seeds, leaf, flowers, grasses, stem, roots and fungi (Menkhorst 2001). It inhabits dry heath, open woodland and forest with a heathy understorey, often on nutrient-poor sandy soils (Menkhorst 2001).

The species occurs in suitable habitat in much of the Grampians and the southern half of the Wannon Region, south of Dergholm and west of Mount Clay. Heath Mouse has been recorded within the vicinity of the study area on 10 previous occasions (Figure 1), with the most recent record being 2006 (Department of Energy Environment and Climate Action 2025).

The habitats for Heath Mouse within the study area were sub-optimal. They did not contain wet heathland, nor habitats with midstorey or overstorey vegetation exceeding about one metre in height. The site was relatively elevated, and did not contain gullies or wet depressions. It is concluded that this species has a low to moderate likelihood of occurrence within the study area. The project will proceed on assumed presence and mitigate potential impacts for this species.

Self-assessment for Impacts to Matters of National Environmental Significance

A Referral to the DCCEEW is required where any action is likely to have a significant impact on any MNES described within the EPBC Act. Guidance on determining if an impact is likely to be significant is provided in the '*Significant Impact Guidelines 1.1; Environment Protection and Biodiversity Conservation Act 1999*' (Department of Sustainability Environment Water Population and Communities 2013), which provides the details of a self-assessment to determine the likely significance of an impact to an MNES.

A self-assessment against the significant impact criteria for Southern Brown Bandicoot and Heath Mouse, which are listed as Endangered under the EPBC Act, was undertaken, with the results provided in Table 1.

The self-assessment against the significant impact criteria for Swamp Antechinus, and Long-nosed Potoroo, which are listed as Vulnerable under the EPBC Act, is provided in Table 2.

It is concluded that that the proposed development is unlikely to significantly impact MNES on the basis that the project:

- Has a small construction footprint of approximately 0.8 hectares, amongst a park of contiguous remnant native vegetation including the Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest spanning over 4,500 hectares;
- The project's impact will be short in duration, including approximately 12 weeks for the installation of the underground cable and a further 12 weeks to revegetate the impacted portion of the study area;
- The impact will be temporary and staggered, so that only 100 metres of trenching will be undertaken at one time;
- Construction and indirect impacts to significant ecological values will be minimised through a Construction Environment Management Plan (or equivalent)
- Animal welfare will be managed and prescribed through a Fauna Management Plan to minimise unintended impacts to animals that may encounter the works;
- The site will be restored in accordance with a Rehabilitation Plan. The Rehabilitation Plan will include weed management post-construction; and
- The project will be subject to state regulatory approvals and conditions to ensure due process and best practice ecological management is followed.

Conclusion

The BESS component of the project will not have a significant impact MNES as it does not require the removal of vegetation which provides habitats for EPBC Act-listed flora and fauna species. The proposed cable requires the removal of native vegetation. The location of the cable has been selected to go in an existing powerline easement, largely cleared of vegetation exceeding approximately one metre in height. It will not require the removal of any trees, woodland birds and bats are therefore unlikely to be significantly impacted. A targeted flora survey did not record Green-striped Greenhood, and this species is also unlikely to be impacted.

The study area may provide habitat to EPBC Act-listed Swamp Antechinus Heath Mouse, Southern Brown Bandicoot and Long-nosed potoroo. However, the temporary nature of the works, the small construction footprint, and the commitment to rehabilitate the study area will avoid a significant impact to these species. The applicant will undertake a voluntary referral of the project DCCEEW to confirm that it will not be a controlled action under the EPBC Act.

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Figure

Note: some threatened species points have been shifted for display purposes

CATONS FLAT ROAD
DOHLES ROAD
SMITH STREET
CAVE HILL ROAD
MT CLAY ROAD
FITZROY RIVER
FLACKS ROAD
HEYWOOD
GOLF COURSE ROAD
PRINCES HIGHWAY
PORTLAND LINE
COFFEYS LANE
MEAGHERS ROAD
SURRY RIVER
SURRY RIVER-GORAE ROAD
HEATHMERE
Mt Clay State Forest
Narrawong Flora Reserve

1979 1993 2019 2019 2019 2019 2022 2022 2006 2023 2000 2000 2000 2000 2019 2019 2019 2019 2019 2012 2013 2009 2018 2007 2008 2013 2019 2019 1979 2005 2005 2000 2000 2000 2019 2000 2019 2011 2023 2022 2006 2012

0 250 500 750 1,000 Meters

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Figure 1: EPBC Act threatened flora and fauna species within 3kms of the study area.

Heywood Battery Energy Storage System

Legend

- Study Area
- 3km Study Area Buffer
- Swamp Antechinus
- Public Land

Common Name

- Heath Mouse
- Long-nosed Potoroo
- Southern Brown Bandicoot

Tables

Table 1. Significant Impact Criteria and Responses Relating to Heath Mouse and Southern Brown Bandicoot (Endangered species).

Significant Impact Criteria	Heath Mouse	Southern Brown Bandicoot
Lead to a long-term decrease in the size of a population	No. The project has a low to moderate likelihood of supporting Heath Mouse. The trench will only be open for the installation of the cable, for a period of 12 weeks, in 100 metre increments. The vegetation will be rehabilitated post construction. On this basis, the project is unlikely to result in the long-term decrease in the size of a population of Heath Mouse.	No. The project proposes only the temporary loss of habitat for Southern Bown Bandicoots. The trench will only be open for the installation of the cable for a period of 12 weeks. The vegetation will be rehabilitated post construction. On this basis, the project is unlikely to result in the long-term decrease of the size in a population of Southern Bown Bandicoots.
Reduce the area of occupancy of the species	No. The study area study area is likely to result in only the temporary loss of habitat available to the species, comprising approximately 0.8 hectares, in 0.1 hectare increments. This loss is only likely to last for approximately 12 weeks for the installation of the cable, with the area to be revegetated during the following 12 weeks. It will not permanently reduce the area of occupancy for this species.	No. The study area study area is likely to result in only the temporary loss of habitat available to the species, comprising approximately 0.8 hectares, in 0.1 hectare increments. This loss is only likely to last for approximately 12 weeks for the installation of the cable, and with the area to be revegetated during the following 12 weeks. It will not permanently reduce the area of occupancy for this species.
Fragment an existing important population[1] into two or more populations	No. The proposed trench is likely to result in only a temporary barrier to movement, in 100 metre increments (over the 800 metre trench), for a period of up to 24 weeks. However, the population present within the Mount Clay State Forest (and vast expanses of other contiguous public land which provides habitat to this species) will not be fragmented; opportunities for movement around the construction zone will remain. Movement through the construction zone will be re-instated once works and revegetation have been completed.	No. The proposed trench is likely to result in only a temporary barrier to movement, in 100 metre increments (over the 800 metre trench), for a period of up to 24 weeks. However, the population present within the Mount Clay State Forest (and vast expanses of other contiguous public land which provides habitat to this species) will not be fragmented; opportunities for movement around the construction zone will remain. Movement through the construction zone will be re-instated once works and revegetation have been completed.
Adversely affect habitat critical to the survival of a species	No. The study area does contain habitat critical to the survival of the species. The proposed trench makes up a small proportion of habitat available to this species, which is far more extensive within the Mount Clay State Forest, as well as other	No. The study area does contain habitat critical to the survival of the species. The proposed trench makes up a small proportion of habitat available to this species, which is far more extensive within the Mount Clay State Forest, as well as other

Significant Impact Criteria	Heath Mouse	Southern Brown Bandicoot
	population centres within the south-western Victoria. Habitat loss will be small in area, and temporary in nature.	population centres within the south-western Victoria. Habitat loss will be small in area, and temporary in nature.
Disrupt the breeding cycle of a population	No. Only 100 metres of trench will be open at one time, representing a very small exclusion area, when compared to vast amount of contiguous potential habitat for this species (which may include Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest).	No. Only 100 metres of trench will be open at one time, representing a very small exclusion area when compared to vast amount of contiguous potential habitat for this species (which is likely to include Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest). .
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No. The project will require the temporary removal of habitat for approximately 12 weeks, outside the breeding season for the species. A further 12 weeks will be required for revegetation. After this, Heath Mouse are likely to recolonise the previously disturbed area, and the species is not likely to decline in numbers.	No. The project will require the temporary removal of habitat for approximately 12 weeks, outside the breeding season for the species. A further 12 weeks will be required for revegetation. After this, Southern Brown Bandicoots are likely to recolonise the disturbed area, and the species is not likely to decline in numbers.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	No. The proposed development will not facilitate the introduction or expansion of invasive species. Details of weed and pest animal management will be included in a Construction Environmental Management Plan and, once the development is complete, vegetation management will be undertaken in accordance with a Land Rehabilitation Plan to manage potentially harmful invasive plant species.	No. The proposed development will not facilitate the introduction or expansion of invasive species. Details of weed and pest animal management will be included in a Construction Environmental Management Plan and, once the development is complete, vegetation management will be undertaken in accordance with a Land Rehabilitation Plan to manage potentially harmful invasive plant species.
Introduce disease that may cause the species to decline	No. The proposed development will not introduce or facilitate the spread of diseases or biological pathogens.	No. The proposed development will not introduce or facilitate the spread of diseases or biological pathogens.

Significant Impact Criteria	Heath Mouse	Southern Brown Bandicoot
Interfere substantially with the recovery of the species	No. The project will not substantially alter the habitats for Heath Mouse over the long-term. Given the relatively temporary nature of the cable installation works, and the commitment to rehabilitate the disturbed habitats, the project will not substantially impact any recovery efforts for the species.	No. The project will not substantially alter the habitats for Southern Brown Bandicoot over the long-term. Given the relatively temporary nature of the cable installation works, and the commitment to rehabilitate the disturbed habitats, the project will not substantially impact any recovery efforts for the species.

Table Notes:

[1] An important population is defined as:

- Key source populations either for breeding or dispersal;
- Populations that are necessary for maintaining genetic diversity; or
- Populations that are near the limit of the species' range (Department of Sustainability Environment Water Population and Communities 2013).

Table 2. Significant Impact Criteria and Responses Relating to Swamp Antechinus and Long-nosed Potoroo (Vulnerable species)

This table does not discuss Green-striped Greenhood, which is also listed as a Vulnerable species under the EPBC Act, but was not detected during the targeted survey and is therefore considered unlikely to occur within the study area (Ecolink Consulting Pty Ltd 2025b).

Significant Impact Criteria	Swamp Antechinus	Long-nosed Potoroo
Lead to a long-term decrease in the size of an important population of a species	No. Swamp Antechinus that may occur within the landscape are not part of an 'important' population of the species. Furthermore, the project proposes only the temporary loss of habitat, that has a low to moderate likelihood of supporting Swamp Antechinus. The trench will only be open for the installation of the cable, for a period of 12 weeks, in 100 metre increments. The vegetation will be rehabilitated post construction. On this basis, the project is unlikely to result in the long-term decrease in the size of an 'important' population of Swamp Antechinus.	No. The project proposes only the temporary loss of habitat that is likely to contain habitat for Long-nosed Potoroo. Whilst any Long-nosed Potoroos within the study area are considered part of an 'important' population of this species, direct impacts to Long-nosed Potoroos will not occur. The trench will only be open for the installation of the cable, for a period of 12 weeks, in 100 metre increments. The vegetation will be rehabilitated post construction. On this basis, the project is unlikely to result in the long-term decrease in the size of an important population of Long-nosed Potoroos.
Reduce the area of occupancy of an important population	No. The Mount Clay State Forest, including the study area, is not defined as an important population of Swamp Antechinus, and the habitats for this species within the study area are sub-optimal. The temporary loss of habitat, incrementally over 12 weeks, would therefore not be likely to reduce the area of occupancy for an 'important' population of the species.	No. Whilst any Long-nosed Potoroos within the study area are considered part of an 'important' population of this species, direct impacts to Long-nosed Potoroo will not occur. The trench will only be open for the installation of the cable, for a period of 12 weeks, in 100 metre increments. The vegetation will be rehabilitated post construction. On this basis, the project is unlikely to result in the long-term decrease in the size of an important population of this species.
Fragment an existing important population into two or more populations	No. The proposed trench is likely to result in only a temporary barrier to movement over a period of up to 24 weeks. The temporary barrier represents a barrier to a very small proportion of the habitat available to this species within the Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest; all contiguous potential habitat	No. The proposed trench is likely to result in only a temporary barrier to movement over a period of up to 24 weeks. The temporary barrier represents a barrier to a very small proportion of the habitat available to this species within the Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest; all contiguous potential habitat

Significant Impact Criteria	Swamp Antechinus	Long-nosed Potoroo
	surrounding the study area. The population present within the study area will not be fragmented, with opportunities for movement around the construction zone, which will occur in 100 metre increments. Movement through the construction zone will be re-instated once works and revegetation have been completed.	surrounding the study area. The population present within the study area will not be fragmented, with opportunities for movement around the construction zone, which will occur in 100 metre increments. Movement through the construction zone will be re-instated once works and revegetation has been completed.
Adversely affect habitat critical to the survival of a species	No. The study area does contain habitat critical to the survival of the species. The proposed trench makes up a small proportion of habitat available to this species, which includes Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest; all contiguous potential habitat surrounding the study area, and other populations throughout south-western Victoria. Habitat loss is likely to be temporary, lasting approximately 12 weeks for construction and a further 12 weeks for revegetation.	No. The study area does contain habitat critical to the survival of the species. The proposed trench makes up a small proportion of habitat available to this species, which includes Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest; all contiguous potential habitat surrounding the study area, and other populations throughout south-western Victoria. Habitat loss is likely to be temporary, lasting approximately 12 weeks for construction and a further 12 weeks for revegetation.
Disrupt the breeding cycle of an important population	No. The proposed trench may result in the temporary loss of habitat, however, higher quality habitats (e.g. gullies or wet heathland) would be expected to form more significant breeding habitats, and the proposed works are therefore unlikely to significantly disrupt the breeding cycle of this species (which is, in any case, not defined as an 'important' population).	No. Whilst Long-nosed Potoroos can breed year-round, only 100 metres of trench will be open at one time, representing a very small exclusion area, when compared to vast amount of contiguous potential habitat available to this species for breeding (which includes Mount Clay State Forest, the Narrawong Flora Reserve and the Narrawong State Forest).
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No. The project will require the removal of habitat for approximately 12 weeks, with a further 12 weeks required for revegetation, outside the breeding season for the species. After this, Swamp Antechinus are likely to recolonise the previously disturbed area, and the species is not likely to decline in numbers.	No. The project will require the removal of a relatively small amount of available habitat for the species, for up to 24 weeks. After this, Long-nosed Potoroos are likely to recolonise the previously disturbed area, and the species is not likely to decline in numbers over the long term.

Significant Impact Criteria	Swamp Antechinus	Long-nosed Potoroo
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No. The proposed development will not facilitate the introduction or expansion of invasive species. Details of weed and pest animal management will be included in a Construction Environmental Management Plan and, once the development is complete, vegetation management will be undertaken in accordance with a Land Rehabilitation Plan to manage potentially harmful invasive plant species.	No. The proposed development will not facilitate the introduction or expansion of invasive species. Details of weed and pest animal management will be included in a Construction Environmental Management Plan and, once the development is complete, vegetation management will be undertaken in accordance with a Land Rehabilitation Plan to manage potentially harmful invasive plant species.
Introduce disease that may cause the species to decline	No. The proposed development will not introduce or facilitate the spread of diseases or biological pathogens.	No. The proposed development will not introduce or facilitate the spread of diseases or biological pathogens.
Interfere substantially with the recovery of the species	No. The project will not substantially alter the habitats over the long-term for Swamp Antechinus. Given the relatively temporary nature of the cable installation works, and the commitment to rehabilitate the disturbed habitats, the project will not substantially impact any recovery efforts for the species.	No. The project will not substantially alter the habitats over the long-term for Long-nosed Potoroos. Given the relatively temporary nature of the cable installation works, and the commitment to rehabilitate the disturbed habitats, the project will not substantially impact any recovery efforts for the species.

Table Notes:

[1] An important population is defined as:

- Key source populations either for breeding or dispersal;
- Populations that are necessary for maintaining genetic diversity; or
- Populations that are near the limit of the species' range (Department of Sustainability Environment Water Population and Communities 2013)