

REFERRAL OF A PROJECT FOR A DECISION ON THE NEED FOR ASSESSMENT UNDER THE *ENVIRONMENT EFFECTS ACT 1978*

REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Seventh Edition, 2006). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

It will generally be useful for a proponent to discuss the preparation of a Referral with the Impact Assessment Unit (IAU) at the Department of Environment, Land, Water and Planning (DELWP) before submitting the Referral.

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
 - a brief description of potential changes or risks to environmental assets resulting from the project;
 - available information on the likelihood and significance of such changes;
 - the sources and accuracy of this information, and associated uncertainties.
- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A USB copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 10MB as they will be published on the Department's website.**
- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

Minister for Planning
PO Box 500
EAST MELBOURNE VIC 8002

Couriers

Minister for Planning
Level 16, 8 Nicholson Street
EAST MELBOURNE VIC 3002

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to ees.referrals@delwp.vic.gov.au is required. This will assist the timely processing of a referral.

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION**1. Information on proponent and person making Referral**

Name of Proponent:	Global Power Generation Australia Pty Ltd (GPG)
Authorised person for proponent:	Guillermo Alonso Castro
Position:	Director, Projects Development
Postal address:	Suite A, Level 3, 73 Northbourne Ave, Canberra ACT 2601
Email address:	galsoc@globalpower-generation.com
Phone number:	02 6274 3200 0400 403 251
Facsimile number:	N/A
Person who prepared Referral:	Heidi Duncan
Position:	Associate Town Planner
Organisation:	Tract Consultants
Postal address:	Level 6, 6 Riverside Quay, Southbank VIC 3006
Email address:	hduncan@tract.net.au
Phone number:	0493 042 872 03 9429 6133
Facsimile number:	N/A
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Tract – Strategic and Statutory Planning, Environmental Approvals Ecology and Heritage Partners – Flora and Fauna, Cultural Heritage Marshall Day Acoustics – Noise Moir Landscape Architecture – Landscape and Visual Impact Assessment GHD – Transport Capire – Community Engagement Support Aviation Projects – Aviation Protest Engineering – Geotechnical and Soil Analysis

2. Project – brief outline

<p>Project title: Darlington Wind Farm</p>
<p>Project location: (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context).</p> <p>The boundaries of the site are located approximately 3.2km west of Darlington in Victoria, approximately 6.3km east of Mortlake and approximately 200km west of Melbourne’s CBD. The site is bisected by the Hamilton Highway and bounded by Woorndoo-Darlington Road (north), Castle Carey Road and Darlington-Terang Road (south and east) and Six Mile Lane (west).</p> <p>Please refer to <u>Figure 1 – Project Location Plan</u> which includes the AMG coordinates for the site.</p>
<p>Short project description (few sentences):</p> <p>GPG proposes to build and operate a wind farm between Darlington and Mortlake in south-west Victoria. The project which will incorporate up to 61 wind turbines generating around 400MW with supporting infrastructure.</p> <p>The site covers an area of approximately 7,600 ha and will comprise twelve (12) different land holdings.</p> <p>In addition to the turbines, the project will also include the following permanent or temporary infrastructure:</p> <p><u>Permanent</u></p> <ul style="list-style-type: none">• An onsite substation and compound (including site office and warehouse)• 1 x 132/500kV Power Transformer (420 MVA)• 3 x 33/132kV Power Transformers (140MVA)• Power connection to the electricity grid via the existing Haunted Gully Terminal Station - Tarrone Terminal Station 500kV transmission line• Up to three (3) wind monitoring towers (anemometers)• Vehicle access tracks, hardstands and turbines foundations• Electricity and communications cables. We note that the entire reticulation network (from turbines to the substation) for the wind farm will be underground. The only piece of potential new overhead infrastructure would be associated with connecting the proposed substation / power transformers to the grid via the existing transmission line. The substation is located directly adjacent to the transmission line to limit the need for overhead infrastructure. <p><u>Temporary</u></p> <ul style="list-style-type: none">• A temporary concrete batching plant• A temporary site construction office• 1 x wind monitoring tower (anemometers) <p>A range of preliminary investigations have been carried out to assess the potential impacts of the project on the flora and fauna, Aboriginal and cultural heritage and landscape values of the site. Preliminary noise, aviation, geotechnical and transport assessments have also been undertaken to inform the project. As detailed further in this document, these assessments have concluded that the project will not result in any significant impacts to the environment. The project will have an impact on the local area, but these impacts are minimal and manageable. Further investigation will refine the methods to reduce the local impacts and it is considered that these matters can be appropriately dealt with through the planning application process.</p> <p>Accordingly, it is submitted that this project will not require an Environmental Effects Statement under the Environmental Effects Act 1978.</p>

3. Project description

Aim/objectives of the project (what is its purpose / intended to achieve?):

The aim of the project is to create around 400MW of new renewable energy installed capacity for Victoria through the construction of a wind farm comprising up to 61 turbines. This represents an approximate \$780 million investment and will decrease the reliance of Victorians on fossil fuels. The project will contribute to the achievement of state and federal renewable energy targets of 40% by 2025 and 50% by 2030. In addition, the project will contribute to job creation within the regional economy. It is anticipated that the average annual construction impacts of the project on the regional economy may create circa 120 direct and indirect regional jobs, and \$22M of annual direct and indirect value added. Once operational, the project is estimated to contribute approximately 84 direct and indirect regional jobs annually and approximately \$50M in annual direct and indirect value-added to the regional economy.

Background/rationale of project (describe the context / basis for the proposal, eg. for siting):

The project site has been selected through the consideration of locational factors that maximise the renewable energy resource and minimise its impact on the surrounding environment and community.

These locational factors include:

- Committed landowners (being landholders with current land agreements with GPG).
- Distance from coastline
- Large land holdings
- Low population density
- Considerable buffers to residential communities
- Proximity to existing electricity transmission infrastructure
- Suitable wind resource (as evidenced by 10+ years of ongoing wind monitoring, demonstrating the wind resource in this area is sufficient for a project of this nature)
- Minimal impacts on –
 - Flora and fauna
 - Heritage (including Aboriginal)
 - Non-stakeholder dwellings
 - Vistas and view lines.
- Appropriate terrain and land capability
- Access to other existing infrastructure (road network).

Main components of the project (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

As shown in [Figure 2 – Indicative Project Layout Plan](#) the Darlington Wind Farm will include up to 61 turbines. The precise siting of the turbines will be determined through further investigation with respect to visual amenity, flora and fauna, Aboriginal and Cultural Heritage sensitivity, proximity to waterways, proximity to dwellings, and wind resources. The nearest turbine on the eastern side of the project will be located approximately 4.6km from the township of Darlington. The nearest turbine on the western side of the project will be located approximately 6.5km from the township of Mortlake.

In addition to the turbines, supporting infrastructure will also be required. This infrastructure will include access tracks, hardstands, foundations, power transformers, substation, control building, temporary concrete batching plant and monitoring towers.

The network of electrical and communication cabling required for the project will primarily located within underground trenches. Limited above ground infrastructure (pylons) will be required as part of the interface works to connect to the existing Haunted Gully Terminal to Tarrone Terminal 500kV transmission line. The details for this can only be confirmed after the Australian Energy Market Operator (AEMO) has provided Primary Functional Specifications for the proposed point of connection for the project, and AusNet Services has completed design of such interface works.

AEMO will not issue functional specifications until the backend of the connection application process, and close to the connection approval being signed. It is anticipated that this is likely to

occur in parallel with, or post planning approval. In this interim period, GPG will be working through a preliminary design with the relevant authorities / operators. It is emphasised that above ground infrastructure will be limited to connecting the substation to the existing transmission line. The substation has been collocated with the transmission line to limit the scope of above ground infrastructure required. It is reiterated that the whole reticulation network (from turbines to the substation) for the wind farm will be underground.

To date, an extensive micro-siting process has been undertaken to locate the turbines and associated infrastructure in the most suitable positions on the site and with consideration of dwelling locations, cultural heritage considerations and flora and fauna values. It is anticipated that further micro-siting will occur as more detailed technical investigations are carried out. It is not anticipated that responses from AEMO or Ausnet will alter the micro-siting process as the substation has already been situated in the most logical location, in a relatively unconstrained area, adjacent to the existing transmission line.

Ancillary components of the project (eg. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

The Project Layout Plan indicates the locations of the primary ancillary components of the project as well as proposed internal roads. Cable trenches will typically be aligned with the proposed roads within the project boundary. Further detail with respect to these elements of the project will be confirmed as the detailed design of the project progresses and as part of the planning approvals process.

Key construction activities:

There are essentially three phases to the project which would follow the approvals process;

- Phase 1: The construction phase
- Phase 2: The installation phase
- Phase 3: The operational phase

Phase 1 includes the construction of the necessary civil and electrical infrastructure (Balance of Plant) to support the installation phase. This includes roads, foundations, hardstands, siting of substation and support infrastructure.

Phase 2 will include the installation of the substation, towers and turbines, testing, commissioning, and the connection to the grid.

Phase 3 (Operational Phase) is discussed below

Key operational activities:

Following the construction and installation phases, the operational phase will be in accordance with standard best practice for Victorian Wind Farms. Maintenance will be scheduled, ongoing and conducted by small teams. The lifetime of the project will be at least 30 years. After this time, the site could be re-powered by using new wind turbine technology or ultimately decommissioned.

Key decommissioning activities (if applicable):

As the timeframe for the wind farm will be extended (30 year minimum) it is difficult to accurately foreshadow the recycling and reuse opportunities that may be available at that time. Decommissioning, should it take place at any point would be in accordance with the following broad guidelines:

Within 18 months after the cease of operation, the wind energy facility operator, must undertake the following:

- a) remove all above ground non-operational equipment;
- b) clean up and restore all storage, construction and other areas associated with the use, development and decommissioning of the wind energy facility, if not otherwise useful to the ongoing management of the land;
- c) suitable materials are identified and reused or recycled;

<p>d) restore all access tracks and other areas affected by the project closure or decommissioning, if not otherwise useful to the ongoing management of the land.</p>
<p>Is the project an element or stage in a larger project? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please describe: the overall project strategy for delivery of all stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages).</p> <p>The project is anticipated to be delivered in a single stage.</p>
<p>Is the project related to any other past, current or mooted proposals in the region? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please identify related proposals.</p> <p>An EES Referral was submitted to the Minister in late 2007. The project was described as “A wind farm of up to 150 turbines with a maximum power output of up to 450 MW located on both sides of the Hamilton Highway about 5 km west of Darlington.” On 09 January 2008, the Minister decided that an Environment Effects Statement (EES) was not required for the Darlington Wind Farm as described in the referral, subject to the following condition: <i>Targeted surveys of the movements and behaviour of Brolgas in the vicinity of the Darlington Wind Farm site during the breeding, migration and flocking seasons for the species are to be undertaken and documented to the satisfaction of the Department of Sustainability and Environment, prior to any statutory decision whether or not to approve the wind farm proposal.</i></p> <p>This project is directly related to the previous project for which the Minister determined an EES would not be required. In summary, the key changes to the wind farm project that have occurred in the years since the Minister for Planning made the decision are summarised as follows:</p> <ul style="list-style-type: none"> • The site area has been reduced from 8,800 hectares (2008 Decision) to approximately 7,600 hectares, which represents a reduction of nearly 14%. • The revised project area excludes land to the north-east in the vicinity of the flocking areas around Lake Barnie Bolac. • The maximum number of turbines has been reduced from 150 to a maximum of 61. • The reduced turbine density means that the area effectively impacted by the proposed wind farm infrastructure has significantly decreased. • The wind farm is anticipated to generate around 400MW of renewable energy compared with the previously proposed 450MW, noting these are target/aspirational figures, which may vary depending on the final number of turbines finally approved/built, and the unit capacity of the turbine brand/model finally chosen. • Higher performing and more technologically advanced turbine model options have been selected for the project. • The maximum height of the wind turbines selected for the project have increased from 135m to 240m. <p>The revised project area is described in Figure 3 – Project Boundary Comparison.</p> <p>Whilst the original decision has no lapse date, the project is being re-referred to the Minister in accordance with discussions with DELWP in February, 2022.</p>
<p>What is the estimated capital expenditure for development of the project?</p> <p>Approximately \$780M.</p>

4. Project alternatives

<p>Brief description of key alternatives considered to date (eg. locational, scale or design alternatives. If relevant, attach A4/A3 plans):</p> <p>There is no alternative to the proposed site currently under consideration by the proponent. The project site is a suitable location for a wind farm, being within the State Government Renewable Energy Zone. In addition, it is within a zone that allows for a wind farm.</p>

Furthermore, the site has been selected based on key locational characteristics which include:

- Low population density and considerable buffers to residential communities.
- Lack of significant landscape values.
- Proximity to grid.
- Distance from coastline.
- Appropriate terrain and land capability.
- Access to other existing infrastructure (e.g. road network).
- Availability of excellent wind resources.
- Infrastructure availability.
- Geotechnical, terrain and land capability characteristics.
- No encumbered by post-contact heritage values.
- Manageable impacts on:
 - Flora and fauna.
 - Cultural Heritage sensitivities.
 - Non-stakeholder dwellings.
 - Vistas and view lines.

Brief description of key alternatives to be further investigated (if known):

No alternative sites are being considered for the project. The proposed project site represents the most commercially viable and appropriate location in the locality and as such there are no contingency sites being investigated.

The proponent is considering three turbine models for the project. Negotiations with several key turbine suppliers are underway, however procurement will only be able to progress after planning approvals have been secured. The technical assessments informing the project layout have considered several preferred candidate turbine models to ensure rigorous and valid assessment.

5. Proposed exclusions

Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:

There are no ancillary activities or future stages that are excluded from the assessment.

6. Project implementation

Implementing organisation (ultimately responsible for project, ie. Not contractor):

GPG Australia Pty Ltd or a fully owned subsidiary under GPG Australia Pty Ltd, established at a later stage (Special Purpose Vehicle).

Implementation timeframe:

Subject to Approvals Pathway. From grant of planning permit, it is anticipated that construction could commence within 6 – 12 months, and that construction (including testing, commissioning and commencement of Commercial Operations) would be completed within 22 – 24 months

Proposed staging (if applicable):

No staging is proposed at this point of time and approval is being sought for the project as a whole.

7. Description of proposed site or area of investigation

<p>Has a preferred site for the project been selected? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If no, please describe area for investigation. If yes, please describe the preferred site in the next items (if practicable).</p> <p>The project site is shown on <u>Figure 1 – Project Location Plan</u> and <u>Figure 2 – Indicative Project Layout Plan</u>.</p>
<p>General description of preferred site <i>(including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):</i></p> <p>The project site and the surrounding area is a generally flat landscape with several volcanic rises. The landscape is highly modified and is predominately cleared for pastoral and agricultural uses (i.e. cropping and grazing). There are a limited number of homes within the site area (16) and several additional homes within the vicinity. Infrastructure within and surrounding the site includes roads, rail, power lines, communication towers and fences. Throughout the project site are agricultural and residential buildings set in a typically rural landscape. The northern part of the project site also includes a section of dry stone wall, synonymous with agricultural activities across western Victoria and is in various states of repair. The topography incorporates natural depressions and waterbodies including constructed dams, perennial and ephemeral wetlands.</p> <p>Please refer to <u>Figure 4 – Photo Viewpoints</u>.</p> <p>The study area has been mostly cleared of native vegetation. Some native vegetation remains, associated with the wetlands within the project area. Much of the other established vegetation has been planted or retained as wind breaks around homesteads and in road reserves.</p> <p>The existing Haunted Gully-Tarrone 500 kV transmission line bisects the site in an east–west direction.</p>
<p>Site area (if known): Approximately 7,600 ha (hectares)</p> <p>Route length (for linear infrastructure) N/A (km) and width N/A (m)</p>
<p>Current land use and development:</p> <p>The predominant land use is agricultural (canola cropping and cattle and sheep grazing). There are 16 dwellings located inside of the project site boundary.</p>
<p>Description of local setting (eg. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):</p> <p>The project site is bisected by the Hamilton Highway which provides access between Melbourne and southwest Victoria.</p> <p>Adjoining uses are similar to those within the project site and include with a predominance of cropping and pasture with animal grazing with associated dwellings and farming structures.</p> <p>Towns in the vicinity include:</p> <ul style="list-style-type: none"> • Mortlake – Approx. 6.3 km to the south-west (6.5km to the nearest proposed turbine). • Darlington – Approx. 3.3km to the east (4.6km to the nearest turbine). <p>Several other smaller centres and localities in the vicinity include:</p> <ul style="list-style-type: none"> • Dundonell – approximately 5km to the north of the subject site. • Kolora – approximately 5km to the south of the southern section of the site. • Glenormiston – approximately 5.5km to the southeast of the southern section of the site.

Planning context (eg. Strategic planning, zoning & overlays, management plans):

The site is subject to the provisions of the Moyne Planning Scheme and is located within the Farming Zone. Please refer to Figure 5 – Zone Map. Under the planning scheme a permit is required for a Wind Energy Facility on any land (other than that within a national park where it is a Section 3 Use). Should the project necessitate the removal of any native vegetation an application will be made pursuant to Clause 52.17 of the planning scheme. Some of the associated buildings and works (for example, signage, creation of easements) may also require approval under the permit.

The application will be assessed against the following relevant provisions of the Moyne Planning Scheme:

- Clause 12 – Environment and Landscape Values, which aims to ensure the protection of biodiversity, and of significant environments and landscapes, as well as native vegetation management.
- Clause 13 – Environmental Risks and Amenity, which seeks facilitate best practice environmental management and risk management through the planning process, in order to avoid or minimise environmental degradation and hazards. The clause also sets out considerations relating to the management of natural hazards and climate change, erosion and landslip, noise abatement, and bushfire risk.
- Clause 14 – Natural Resource Management, which provides that the planning process should assist in the conservation and appropriate use of natural resources to support sustainable development and environmental quality. Considerations include the protection of agricultural land, consideration of catchment planning and management, water conservation and water quality.
- Clause 18 – Transport, provides considerations for integrating land uses with transport and car parking.
- Clause 19 – Energy sets renewable energy considerations, and promotes the provision of renewable energy, whilst still ensuring that appropriate siting and design considerations are met.
- Clause 22.02 – Environment addresses the policies related to the environment in the Moyne Shire. There are policies relating to rare species, groundwater discharge, hilltop and ridgeline protection, flora and fauna, public land, and management of coastal landscapes.
- Clause 22.03 – Economic Development sets out the policies related to economic development. Of particular relevance is Clause 22.03-4 which relates to Agricultural Production, and stipulates that the use and development of land within Moyne is not prejudicial to agricultural industries or to the productive capacity of the land.

All the relevant planning policy provisions will be addressed in a planning report which form part of the planning application.

No overlays affect the site. Please refer to:

- Figure 6 – Environmental and Landscape Overlays
- Figure 7 – Heritage and Built Form Overlays
- Figure 8 – Land Management Overlays
- Figure 9 – Other Overlays.

Moyne Shire Council have a number of broad strategic and management plans which detail environmental land and water practices, and the proposal would be assessed against these as part of the planning permit application process.

The installed capacity of the project will be around 400MW. As such, in accordance with Clause 72.01-1 of the Moyne Planning Scheme, the Planning Minister as the Responsible Authority.

Permit applications for Wind Energy facilities must be in full accordance with the Development of Wind Energy Facilities in Victoria Policy and Planning Guidelines (2019).

Local government area(s):

The site sits within the northeast part of the Shire of Moyne. The Shire of Corangamite is located approximately 1.5km to the east of the site boundary at its closest point.

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity (cf. general description of project site/study area under section 7):

The site comprises farmland, primarily used for grazing and cropping. It also contains eucalyptus plantations, tracts of dense windbreak vegetation, wetlands, waterbodies and some fragmented, modified remnant native vegetation. The site and surrounding area features several drainage lines, floodplains and swampy areas, some of which flow into Mount Emu Creek which runs north to south, and is located outside of and to the east of the project boundary. The project site includes low-lying flood plain areas, as well as raised basalt formations formed by prehistoric lava flows. Many of these drainage lines and floodplains have been modified by agricultural activities, including extensive drainage of wetlands, cropping and the creation of dams.

The project area contains some seasonally inundated drainage lines and pastures, as well as artificial waterbodies (dams) which provide habitat for waterbirds and water dependent species. There are other wetlands and water bodies that provide habitat within the vicinity of the project site, including one Ramsar Wetland (approximately 12.7km from the boundary), as well Lake Bernie Bolac, Lake Sheepwash, Lake Gellie and Long Dam and several other ephemeral wetlands, marshes, freshwater meadows and farm dams, all located within 20km of the boundary.

The project area contains areas of mapped cultural heritage sensitivity, relating to a registered Aboriginal Place (Mt Fyans 2 – low density artefact distribution), waterways (Black Swamp and Tussocky Swamp), and Koo Wee Rup Plain.

The Project Site ranges from between 150m and 160m above sea level. The landscape character of the site and surrounds is defined by the cleared, planar lands and farming lots. Land is extensively used for grazing and cropping, and the typical character is defined by modified pastures with scattered vegetation on a flat terrain around the settlements of Mortlake and Darlington. Vegetation is generally defined by windbreak plantations and patches of native vegetation that are interspersed on the rural farm lots.

9. Land availability and control

Is the proposal on, or partly on, Crown land?
 No Yes If yes, please provide details.

Current land tenure (provide plan, if practicable):

All land is freehold, and comprises a number of land parcels owned by twelve (12) land holders. Please refer to [Figure 10 – Land Ownership Plan](#) which identifies dwellings and ownership for land within and external to the project footprint.

Intended land tenure (tenure over or access to project land):

It is intended that long term leases will be entered into between landowners and GPG. These leases have a duration of 30 years with an optional 30-year extension. All leases will include a decommissioning clause, which provides an undertaking from GPG to decommission all above-ground infrastructure within a pre-determined period (12 – 18 months). GPG is committed to this arrangement. It is anticipated that this would also be an obligation of any future planning permit.

Other interests in affected land (eg. easements, native title claims):

Eastern Maar Aboriginal Corporation is the appointed Registered Aboriginal Party for the land within which the site is located. A native title claim search will be undertaken at the planning application stage, and is under consideration by Ecology and Heritage Partners (EHP) as part of their ongoing cultural heritage works in association with the project.

Easements apply to land within the site area. This predominantly includes electricity easements, which affect land underneath the 500 kV Haunted Gully-Tarrone transmission line.

10. Required approvals

State and Commonwealth approvals required for project components (if known):

Planning Permit

The proposed wind farm and associated infrastructure will require a planning permit pursuant to the *Planning and Environment Act 1987*. Pursuant to the Victoria Planning Provisions, the Minister for Planning will be the Responsible Authority as the wind farm will generate more than 1MW of electricity.

Some buildings and works may require separate approval (eg Temporary Concrete Batching Plant) and should the project necessitate the removal of any native vegetation an application will be made pursuant to Clause 52.17 of the planning scheme.

The timing for the anticipated planning approvals pathway is expected to take circa 12 – 18 months.

Cultural Heritage Management Plan

Before a planning permit can be issued, approval of a Cultural Heritage Management Plan (CHMP) pursuant to the *Aboriginal Heritage Act 2006* will be required. In 2006 the Victorian Government passed the *Cultural Heritage Act 2006*, to provide more effective protection of Aboriginal cultural heritage and broaden Aboriginal community involvement in decision-making arrangements. A desktop study has been undertaken to inform the CHMP and is attached as Attachment A – Cultural Heritage Desktop Assessment prepared by EHP. The CHMP will be progressed as part of the planning application process.

Approval under Environment Protection and Biodiversity Conservation Act 1999

If a species that is listed under the EPBC Act is found within proposed wind farm site, and there is a likelihood of an impact on it arising from the proposed wind farm, then referral to the Commonwealth Minister for the Environment is required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Minister must then determine whether it is a 'controlled action'.

A number of EPBC Act listed species have been found within the study area, although it is considered feasible to avoid any significant impacts on these species through careful siting of wind generators and associated infrastructure, particularly the access roads and underground power cabling that make up the largest component of the development footprint.

Flora and Fauna Guarantee Act 1988 (FFG Act)

Approval under the FFG Act will be required if any listed species are proposed to be removed on public land. It is noted that the project site comprises privately owned land. A FFG Act permit may be required in relation to any works or impacts to road reserves, and this will be confirmed as part of the next stage of the project.

Further detail regarding the EPBC Act and FFG Act are provided within Attachment B – Detailed Ecological Investigations of the Proposed Darlington Wind Farm report prepared by EHP.

Additional works permits and approvals for the development may also be required under the following acts of legislation:

- Water Act 1989 for any works within 20 metres of a designated waterway.
- Road Management Act 2004 for any works associated with new access to public roads.
- Civil Aviation Act 1988
- Electrical Industry Act 2000
- Electrical Safety Act 1988
- Environmental Protection Act 2017

Have any applications for approval been lodged?

No Yes If yes, please provide details.

Approval agency consultation (agencies with whom the proposal has been discussed):

- DELWP (Renewable Energy Team)
- DELWP (Environmental Team)
- Moyne Shire Council
- Eastern Maar Aboriginal Corporation

Other agencies consulted:

- Department of Transport
- Corangamite Shire Council
- AEMO

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

Overview of potentially significant environmental effects (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

Ecological Character / Flora & Fauna

A detailed ecological assessment has been undertaken by EHP, which included reviewing relevant literature, online resources and databases, in tandem with multiple field assessments and surveys carried out over the period 2007 to 2022. Please refer to Attachment B – Detailed Ecological Investigations of the Proposed Darlington Wind Farm which discusses these findings.

Existing Conditions

The study area has largely been cleared of native vegetation, with the exception of road reserves and small remnant areas of good quality native vegetation. The study area is within the Victorian Volcanic Plain bioregion. The native vegetation identified within the study area includes five Ecological Vegetation Classes (EVCs): Plains Grassland (EVC 132_61), Aquatic Herbland (EVC 653), Plains Grassy Woodland (EVC 55_61), Plains Sedgy Wetland (EVC 647), and Plains Grassy Wetland (EVC 125). With the exception of Plains Sedgy Wetland which is Vulnerable, the remaining EVCs have a Bioregion Conservation Status (BCS) of Endangered. A total of 161 vascular flora species, including 90 indigenous species and 71 non-indigenous flora species were detected within the study area during the detailed ecological investigations.

Four nationally flora species Hoary Sunray *Leucochrysum albicans* ssp. *tricolor* Matted Flax-lily *Dianella amoena*, Clover Glycine *Glycine latrobeana*, Spiny Rice-flower *Pimelea spinescens* ssp. *spinescens* listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and three Statespecies, Wavy Swamp Wallaby-grass *Amphibromus sinuatus*, Small Milkwort *Comesperma polygaloides* and Pale Swamp Everlasting *Coronidium gunnianum* listed under the State Flora and Fauna Guarantee Act 1988 (FFG Act) were observed within the study area. No significant flora species are located within the proposed development footprint and associated buffers.

Three nationally significant fauna species were recorded within the study area: Southern Bent-wing Bat *Miniopterus orianae bassanii*, Striped Legless Lizard *Delmar impar* and Growling Grass Frog *Litoria raniformis*. Five nationally significant migratory fauna species were also recorded within the study area: Latham's Snipe *Gallinago hardwickii*, Clamorous Reed Warbler *Acrocephalus stentoreus*, Common greenshank *Tringa nebularia*, Double-banded Plover *Charadrius bicinctus*, and Sharp-tailed Sandpiper *Calidris acuminata*. Eight State-listed significant fauna species were also recorded, including the Brolga *Grus rubicunda*; Little Eagle *Hieraaetus morphnoides*; Musk Duck *Biziura lobate*; Common Greenshank *Tringa nebularia*, Australian Shoveler *Anas rhynchos*; Australian Gull-billed Tern *Gelochelidon macrotarsa*, Wood Sandpiper *Tringa glareola* and Tussock Skink *Pseudemois pagenstecheri*.

Three significant ecological communities were also recorded within the study area. These include two Nationally significant communities: Natural Temperate Grassland of the Victorian Volcanic Plain, and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains, and one State-significant community: Western (Basalt) Plains Grasslands Community.

Key Potential Effects (including significance, likelihood and uncertainties)

Direct loss or degradation of native vegetation and associated listed ecological communities, including those listed as threatened under the EPBC Act, and the FFG Act

The proposed development footprint has been revised based on the results of the ecological surveys to avoid impacts to native vegetation and fauna habitat, wetlands and watercourses, significant species and ecological communities, and migratory and marine species. Most patches of native vegetation within or adjacent to the infrastructure layout are of moderate quality, based on the habitat condition score for each habitat zone using the Vegetation Quality Assessment (VQA) methodology (DELWP 2017). The Habitat Conditions Scores for the patches ranged from 0.2 to 0.58. A total of 1.08 hectares of native vegetation, comprising 0.04 hectares of Plains Grassy Woodland and 1.04 hectares of Plains Grassy Wetland is proposed to be impacted by the proposed development footprint and associated infrastructure buffers. In addition, 31.35 hectares

of Current Wetlands (DELWP modelled) is proposed to be impacted although most of these areas do not support native vegetation.. One small, scattered tree (River Red-gum) and no Large Trees are proposed to be impacted as part of development.

The project as proposed will not have a significant impact on native vegetation, as less than 10 hectares of vegetation is proposed to be impacted. The project development footprint has evolved to avoid and minimise impacts to acceptable levels through revision of the development footprint to avoid the PGWe patches and current modelled wetlands. Many of the modelled current wetlands have been modified through drainage and agricultural activities and so now they no longer support native vegetation or function as a wetland.

Direct loss or degradation of habitat for fauna listed as threatened under the EPBC Act and the FFG Act.

The loss of 1.08 hectares of native vegetation hectares does not exceed 1-5% of the overall habitat of any threatened species. Similarly, the proposed wind farm will not result in the long-term loss (1-5%) of the population of any threatened species. No threatened flora species populations were recorded within the development footprint as the footprint was revised following ecological assessments to avoid native vegetation wherever possible.

The three EPBC Act-listed significant fauna species, Southern Bent-wing Bat *Miniopterus orianae bassanii*, Striped Legless Lizard *Delmar impar* and Growling Grass Frog *Litoria raniformis* have habitat within the study area. All suitable habitat for these species have been avoided through revision of the proposed development footprint following the site assessments and targeted surveys for the species.

Disturbance of adjacent or nearby habitat that may support listed species or fauna or ecological communities.

The study area and surrounds support habitat for many fauna species and ecological communities as evidenced in the ecological assessments. The proposed development footprint includes buffers associated with the development type (25 metre buffer either side of proposed access tracks/internal roads/buildings and 100 metre buffers for the wind turbines). The ecological features within these buffer areas are considered lost, however the development may not impact these areas.

Disturbance or individual to population level loss of fauna species listed as threatened under the EPBC Act or FFG Act.

Three nationally listed and eight State listed significant fauna species were recorded within the study area (listed above in the Existing Conditions section above). There is potential for impacts to individual bird and bats, including the Southern Bent-wing Bat and Brolga due to collision with wind turbines during the operational stages of the project.

Collision risk for birds and bat species from wind turbines is low compared to other human activities (Chapman 2017) and this risk can be reduced further through modification of the design of turbines and operational and construction changes (Adams et al., 2021, Hayes et al. 2019, Hodos 2003, Arnett et al. 2013, May et al. 2020 and Gartman et al. 2016a, 2016b).

The collision risk is low for Brolga was predicted to be between 0.178 and 2.710 collisions on average per year (Biosis 2009).

References:

- Adams, E.M., Gulka, J., and Williams, K.A. 2021. A review of the effectiveness of operational curtailment for reducing bat fatalities at terrestrial wind farms in North America. *PloS One*. 2021 November 17; 16 (11). E0256382. Doi: 10.1371/journal.pone.0256382. eCollection 2021.
- Arnett E.B., Johnson G.D., Erickson W.P., Hein C.D. 2013 A synthesis of operational mitigation studies to reduce bat fatalities at wind energy facilities in North America. National Renewable Energy Laboratory. Bat Conservation International, Austin, Texas. 37 pp.; 2013.
- Biosis 2009. Modelled risk of Brolga collisions with turbines at the proposed Darlington Wind Farm. 16 November 2009. Report to Union Fenosa Pty. Ltd. Prepared by Smales, I. Biosis Research Pty. Ltd. Pp. 29.
- Chapman, S. 2017. Wind Farms are hardly the bird slayers they're made out to be. Here's why. *The Conversation* June 16, 2017. theconversation.com
- Gartman, V., Bulling, L., Dahmen, M., Geibler, G., and Koppel, J. 2016a. Mitigation Measures for Wildlife in Wind Energy Development, Consolidating the State of Knowledge-Part 1: Planning and Siting, Construction. *Journal of Environmental Assessment Policy and Management*, 18(03), 1650013.

Gartman, V., Bulling, L., Dahmen, M., Geibler, G., and Koppel, J. 2016b. Mitigation Measures for Wildlife in Wind Energy Development, Consolidating the State of Knowledge-Part 2: Operation, Decommissioning. *Journal of Environmental Assessment Policy and Management*, 18(03), 1650014.

Hayes M.A., Hooton L.A., Gilland K.L., Grandgent C., Smith R.L., Lindsay S.R., Collins J.D., Schumacher S.M., Rabie P.A., Gruver J.C., Goodrich-Mahoney J. 2019. A smart curtailment approach for reducing bat fatalities and curtailment time at wind energy facilities. *Ecological Applications*. 2019 June; 29(4): e01881. Doi: 10.1002/eap.1881. Epub 2019 Apr 2. PMID: 30939226

Hodos, W. 2003. Minimisation of motion smear: Reducing avian collisions with wind turbines. Period of performance: July 12, 1999 – August 31, 2002. (NREL/SR – 500-33249). Retrieved from golden, Colorado, USA. <https://www.nrel.gov/docs/fy03osti/33249.pdf>

May, R., Nygard, T., Falkdalen, U., Astrom, J., Hamre, Ø, Stokke, B.G. 2020. Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities. *Ecology and Evolution* 10 (16) 8927-8935.

Indirect habitat loss or degradation resulting from other effects, such as edge effects, surface hydrological changes, groundwater drawdown, noise, vibration, light or the introduction of weeds/pathogens.

The indirect effects of the proposed wind farm are expected to be low and similar to other wind farms. Indirect effects will be considered at all stages of the wind farm development and avoided and mitigated where possible.

Disruption to the movement of fauna between areas of habitat across the broader landscape.

Most of the study area is highly modified and fragmented due to disturbance history of agriculture and rural development and roads. The proposed development is unlikely to further fragment any areas of high ecological significance as the footprint has been revised to avoid these areas where possible.

The availability of suitable offsets for the loss of native vegetation and habitat for listed threatened species under the EPBC Act and FFG Act.

The offset requirements for the project are 0.456 General habitat Units (GHU) and Species Habitat Units (SHU) for 15 species. The GHU offset requirements can be met and additional analysis of the availability of the SHUs will be undertaken after the final offsets under the Guidelines are determined. It is highly likely that the offset requirements for the project can be met.

Potential collision risk for protected bird and bat species with project infrastructure, including with wind turbine blades.

Based on the detailed site surveys and impact assessment (including the collision risk modelling), the proposed development is not likely to have a significant impact on any bird and bat species after project specific , including significant species listed under the EPBC Act and FFG Act (i.e. Southern Bent-wing Bat and Brolga).

Potential cumulative effects on relevant listed threatened species and communities of flora and or fauna, in particular Brolga and Southern bent-wing bat, from the project in combination with the construction and operations of other nearby energy facilities.

Cumulative effects of other wind farm developments within the surrounding landscape may include disturbance of fauna through noise and increased collision risk for species such as birds and bats. Based on the collision risk modelling for Brolga and the Population Viability Analysis the project is not likely to result in a significant impact to the species.

The proposed Darlington Wind Farm has been selectively positioned to avoid and reduce potential environmental effects, such as avoiding known Brolga nest sites and applying buffers around suitable wetlands. The proposed wind farm is also located outside of the DELWP Darlington No-go Brolga flocking area and the small number of Southern Bent-wing Bat records indicate that the study area is not likely to be an important foraging area for the species (it is not located within close proximity to maternity or roosting caves). The proposed development will use the existing transmission line so this reduces both the cumulative and the potential impacts of the development on local fauna populations.

As summarised in Attachment C – Implications under the Environment Effects Act 1979 for the Proposed Darlington Wind Farm, EHP concludes that, in their view, an EES is not likely to be required for the project for ecological considerations.

Health and Safety of Human Community

Potential risks to the health and safety of the human community are expected to be limited. It is noted that Electromagnetic fields (EMF), Shadow Flicker, Blade Glint and Blade Throw assessments will all be undertaken as part of the planning application stage of the project.

Landscape Values and Visual Impacts

A Preliminary Visual and Landscape Assessment has been undertaken by Moir Landscape Architecture. Please refer to Attachment D – Preliminary Landscape and Visual Impact Assessment (PLVIA). The assessment suggests that the majority of non-involved dwellings are likely to have limited views to the Project due to existing dense wind break planting and structures that surround the dwellings. Of the 26 public viewpoints assessed, only one would have a high-moderate visual impact. The remainder of the viewpoints would have a low impact (8), moderate to low impact (10), and moderate impact (7).

Land Stability / Acid Sulphate Soils

A Desktop Geotechnical Assessment has been undertaken by Protest Engineering. Please refer to Attachment E – Desktop Geotechnical Assessment. The assessment identified that the project site had a very low risk of land instability and erodible soils. In terms of acid sulphate soils, there is a very low to low risk of major acid sulphate soils, and a medium to high risk of localised acid sulphate soils in a small part of the site, closest to existing water bodies. The Desktop Geotechnical Study finds that as long as the development does not encroach near or across water bodies, the risk of encountering potential acid-sulphate soils remains low. The micro-siting of turbines and associated infrastructure will avoid these areas identified as having higher potential for acid sulphate soils.

Social and Economic Considerations

Project infrastructure has been designed and located with input from landowners to avoid impacts upon local community assets or services. A rigorous community engagement program will ensure other community representatives will have the opportunity to provide input into the project, and have a say in how neighbour benefit sharing will be approached.

The project will present immediate and long term employment opportunities for workers drawn from regional communities in Colac, Warrnambool and Geelong.

Noise Impacts

An Environmental Noise Assessment for the project has been undertaken by Marshall Day Acoustics. Please refer to Attachment F – Environmental Noise Assessment. Operational noise from the proposed wind turbines has been assessed in accordance with the *New Zealand Standard 6808:2010 Acoustics – Wind farm noise* (NZS 6808), as required by the *Environment Protection Regulations 2021* and the Victorian Department of Environment, Land, Water and Planning publication *Policy and planning guidelines for development of wind energy facilities in Victoria* dated November 2021. The operational noise assessment found that the proposed wind turbines are predicted to achieve compliance with the applicable noise limits determined in accordance with NZS 6808 for all selected candidate wind turbine models. This also holds true when cumulative impacts from nearby operational/proposed wind farms have been taken into account.

The assessment has also considered operational noise associated with the proposed substation. Noise levels from the substation have been assessed in accordance with *Environment Protection Act 2017* (EP Act) and *Environment Protection Regulations 2021*. Accordingly, the assessment considers the general environmental duty under the EP Act and the noise limits determined in accordance with the EPA Publication 1826.4 *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues*, dated May 2021 (the Noise Protocol). The assessment demonstrates that the substation can be designed and operated to achieve the noise limits determined in accordance with the Noise Protocol.

Overall, the noise assessment demonstrates that the proposed Darlington Wind Farm can be designed and developed to achieve Victorian policy requirements.

Traffic Impacts

A Traffic and Transport Assessment for the project has been undertaken by GHD. Please refer to Attachment G – Traffic and Transport Assessment. It is acknowledged that construction traffic associated with the project has the potential for impacts in terms of vehicle trips, amenity and safety. However, it is considered that these potential impacts can be appropriately mitigated using standard construction traffic management measures and procedures.

Cultural Heritage

EHP has completed a Preliminary Assessment of Cultural Heritage Obligations (PACHO) in relation to the project, and a Cultural Heritage Management Plan (CHMP) is currently being prepared. The desktop component of the CHMP is provided at Attachment A. The project is located within the traditional lands of the Girai wurrung and early consultation has been undertaken with the Eastern Maar being the relevant Registered Aboriginal Party (RAP) for the site. Following further detailed assessment, it is expected that some turbines will need to be micro-sited to minimise or avoid impacts on cultural heritage and this is allowed for through the current design. In addition, underground trenches are proposed to be located in alignment with existing roads where disturbance has occurred.

Field work is scheduled for mid to late August with the Eastern Maar RAP.

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?

NYD No Yes If yes, answer the following questions and attach details.

What investigation of native vegetation in the project area has been done?

A preliminary field assessment was undertaken in December 2013, and a detailed vegetation assessment was undertaken in 2021 to obtain information on flora and fauna values within the study area. Sections of the study area were walked, with all commonly observed vascular flora and fauna species recorded, significant records mapped, and the overall condition of vegetation and habitats noted. The detailed assessment focused on the development footprint and the associated buffers applied to it, on road reserves, and on areas that had remnant vegetation identified previously. Ecological Vegetation Classes were determined with reference to DELWP pre-1750 and extant EVC mapping (DELWP 2022a) and their published descriptions (DELWP 2022c). Targeted Flora surveys were conducted in Winter and Spring. These surveys also focused on the same sections of the larger study area and on areas of potential habitat for fauna species. A total of 161 vascular flora species including 90 indigenous species and 71 non-indigenous flora species were recorded within the study area.

What is the maximum area of native vegetation that may need to be cleared?

The maximum area of native vegetation proposed to be impacted is 1.08 hectares (approximately 31.35 hectares of modelled Current Wetlands is also proposed to be impact although these areas are largely devoid of native vegetation). This allows for a suitable buffer across the entire development footprint. The extent of native vegetation impacts are likely to be reduced further with revision of the development footprint and is a worst case scenario . A 100 metre radius buffer has been applied around the 61 turbines and a 50-metre buffer on associated infrastructure such as access roads (25 metres either side of the proposed roads/buildings). These buffers allow for necessary micro siting changes that may be required during later stages without changes to the offsets needing to be recalculated.

Please refer to Attachment B and Attachment C for further detail.

How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?

N/A approx. percent (if applicable)

Which Ecological Vegetation Classes may be affected? (if not authorised as above)

NYD Preliminary/detailed assessment completed. If assessed, please list.

Detailed ecological assessments (including habitat hectare assessment) have been undertaken across the entire development footprint. Two EVC's, Plains Grassy Wetland and Plains Grassy Woodland totalling 1.08 hectares are proposed to be impacted.

Have potential vegetation offsets been identified as yet?
 NYD Yes If yes, please briefly describe.

Please refer to [Attachment B](#) for further detail.

Other information/comments? (eg. accuracy of information)

Please refer to [Attachment B – Detailed Ecological Investigations of the Proposed Darlington Wind Farm](#) and [Attachment C – Implications under the Environment Effects Act 1979 for the Proposed Darlington Wind Farm](#) prepared by EHP for full details.

NYD = not yet determined

Flora and fauna

What investigations of flora and fauna in the project area have been done? (provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

Multiple flora and fauna assessments have been conducted within the study area and surrounds to assess the potential significant environmental effects of the proposed wind farm facility. These assessments included a review of relevant literature, online-resources and databases were and several field assessments were conducted by Ecology and Heritage Partners Pty Ltd and Brett Lane and Associates Pty Ltd between 2007 and 2022. These field and desktop assessments included Level 1-3 Broilga assessments, targeted surveys for significant flora and fauna species, bird utilisation surveys, fixed-point and roaming bird surveys, vegetation assessments and mapping, wetland assessments, and community consultation on local flora and fauna. The field assessments sought primarily to assess the extent and condition of native vegetation communities and potential flora and fauna habitat within the proposed development footprint and fauna species that may use parts of the study area and could be impacted by the proposed development. The results of these assessments have been presented in several reports over the years and have been further extended with additional more recent survey results (2020-2022). The ecological assessments have all been summarised and collated in a draft report (Detailed Ecological Investigations of the Proposed Darlington Wind Farm, Darlington, Victoria) by Ecology and Heritage Partners (2022). A summary of the existing conditions are also outlined below with regard to the criteria of an EE referral.

Have any threatened or migratory species or listed communities been recorded from the local area?
 NYD No Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

The following significant species and ecological communities and Migratory species have been recorded within the study area:

Significant Ecological Communities

- Natural Temperate Grassland of the Victorian Volcanic Plain (EPBC Act- listed)
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (EPBC Act-listed)
- Western (Basalt) Plains Grasslands Community (FFG Act-listed)

Significant Flora species

- Hoary Sunray *Leucochrysum albicans* ssp. *tricolor* (EPBC Act-listed);
- Matted Flax Lily *Dianella amoena* (EPBC Act-listed);

- Clover Glycine *Glycine latrobeana* (EPBC Act-listed);
- Spiny Rice-flower *Pimelea spinescens* ssp. *Spinescens* (EPBC Act-listed);
- Small Milkwort *Comesperma polygaloides* (FFG Act-listed);
- Wavy Swamp Wallaby Grass *Amphibromus sinuatus* (FFG Act -listed);
- Pale Swamp Everlasting *Coronidium gunnianum* (FFG Act-listed).

Significant Fauna Species

- Southern Bent-wing Bat *Miniopterus orianae bassanii* (EPBC Act-listed);
- Growling Grass Frog *Litoria raniformis* (EPBC Act-listed);
- Striped Legless Lizard *Delmar impar* (EPBC Act-listed);
- Brolga *Antigone rubicunda* (FFG Act-listed);
- Little Eagle *Hieraaetus morphnoides* (FFG Act-listed);
- Musk Duck *Biziura lobate* (FFG Act-listed);
- Australian Shoveler *Anas rhynchotis* (FFG Act-listed);
- Australian Gull-billed Tern *Gelochelidon macrotarsa* (FFG Act-listed);
- Tussock Skink *Pseudemois pagenstecheri* (FFG Act-listed).

Migratory Species

- Latham's Snipe *Gallinago hardwickii* (EPBC Act Migratory);
- Clamorous Reed Warbler *Acrocephalus stentoreus* (EPBC Act Migratory);
- Sharp-tailed Sandpiper *Calidris acuminata* (EPBC Act Migratory/Marine species);
- Double-banded Plover *Charadrius bicinctus* (EPBC Act Migratory);
- Wood Sandpiper *Tringa glareola* (FFG Act-Migratory/Marine species);
- Common Greenshank *Tringa nebularia* (FFG Act Migratory/Marine species).

If known, what threatening processes affecting these species or communities may be exacerbated by the project? (eg. loss or fragmentation of habitats). Please describe briefly.

Potential impacts on ecological values identified during the ecological assessments.

- Loss of confirmed populations and habitat of threatened and listed flora and fauna and their habitat and loss of threatened ecological communities;
- Removal of two endangered EVCs in the Victorian Volcanic Plain bioregion (Plains Grassy Wetland and Plains Grassy Woodland): 1.08 hectares.
- Fragmentation of native vegetation remnants of endangered EVCs;
- Loss and fragmentation of habitat and potential mortality for listed and non- listed fauna species
- Spread of weeds and soil pathogens due to on-site activities;
- Disturbance to wildlife from increased human activity and noise during construction and operation of the turbines; and,
- Mortality of fauna species including significant fauna species due to turbine collision impact.

Turbines and their associated infrastructure have largely been situated in areas that are devoid of native vegetation, based on detailed micro-siting following the ecological assessments, to minimise impacts on fauna species that use the wetlands. Similarly, wetlands and waterways, that occur in the low-lying areas, will be avoided where possible.

Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?

NYD No Yes If yes, please:

- List these species/communities:
- Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

As listed above there are six Migratory species. Impacts on Migratory species are discussed in the Detailed Ecological Investigations report in Section 3.7.3 (Ecology and Heritage Partners 2022).

The proposed development is not likely to significantly impact any of the threatened species, ecological communities, or migratory species. Brolga, Migratory birds such as Latham’s Snipe and Southern Bent-wing Bat have been recorded within and/or adjacent to the study area, and the placement of turbines has been revised to avoid impacts these species. Additional changes to the development footprint will be undertaken to further reduce impacts to these species and associated habitats.

Is mitigation of potential effects on indigenous flora and fauna proposed?

NYD No Yes If yes, please briefly describe.

The development footprint has been revised to avoid areas of native vegetation including threatened flora species.

Mitigation measures are also outlined in detail in Section 6 of the Detailed Ecological Assessment report.

Other information/comments? (eg. accuracy of information)

Detailed ecological investigations have been undertaken over several years and seasons and have accurately document the ecological values across the study area.

Please refer to [Attachment B – Detailed Ecological Investigations of the Proposed Darlington Wind Farm](#) and [Attachment C – Implications under the Environment Effects Act 1979 for the Proposed Darlington Wind Farm](#) prepared by EHP for full details.

13. Water environments

Will the project require significant volumes of fresh water (eg. > 1 GI/yr)?

NYD No Yes If yes, indicate approximate volume and likely source.

Will the project discharge wastewater or runoff to water environments?

NYD No Yes If yes, specify types of discharges and which environments.

Are any waterways, wetlands, estuaries or marine environments likely to be affected?

NYD No Yes If yes, specify which water environments, answer the following questions and attach any relevant details.

There are waterways, waterbodies and wetlands within the study area. The Detailed Ecological investigations report outlines these areas and their habitat quality and use by threatened species. The impact on waterways has been assessed as low. The impact of the proposed development on wetlands will be further reduced through revision of the proposed development (i.e. micro-siting techniques and no-go areas during construction).

Are any of these water environments likely to support threatened or migratory species?

NYD No Yes If yes, specify which water environments.

There are many wetlands within and surrounding the proposed development footprint. There are threatened and migratory species including Brolga and Latham’s Snipe that use the study area including for breeding for the Brolga. The proposed wind farm development has been revised to consider these individuals and their habitat to avoid both direct and indirect impacts. The Detailed Ecological Investigations report outlines the detailed targeted surveys that have been undertaken within the study area and surrounds on these species and their associated habitat.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

<p><input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</p> <p>There is one Wetland of National Significance – the Western District Lakes. This RAMSAR Wetland is located within 12.7 km of the study area. There are no potential impacts of the proposed wind farm development on this wetland.</p> <p>Major wetlands within 20 kilometres of the Darlington wind Farm site include Lake Bernie Bolac; Lake Sheepwash; Lake Gellie and Long Dam. Several other ephemeral wetlands, including marshes, freshwater meadows and farm dams occur within 20 kilometres of the study area.</p>
<p>Could the project affect streamflows? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe implications for streamflows.</p> <p>The Mount Emu Creek is located outside of the study area to the east. This creek flows from north to south and is not within the study area boundary. and the entire study area has several drainage lines, floodplains and swampy areas scattered throughout, some of which flow into Mount Emu Creek.</p> <p>Many of the water features within the study area such as drainage lines and floodplains have been modified by agricultural activities, including extensive draining of wetland areas, channelling of creeklines and the creation of dams.</p>
<p>Could regional groundwater resources be affected by the project? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p> <p>Ground water will not be utilised for the proposed wind farm facility.</p>
<p>Could environmental values (beneficial uses) of water environments be affected? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)</p> <p>A 'works on waterways' permit from the Glenelg Hopkins CMA may be required where any action impacts on waterways within the study area. However, as there are no named waterways, it may not be required for any action. Additionally, where structures are installed within or across waterways that potentially interfere with the passage of fish or the quality of aquatic habitat, these activities should be referred to DELWP with the Glenelg Hopkins CMA included for comment. The proposed development does not impact any creeks within the study area.</p> <p>There is potential for disturbance to waterways and waterbodies within the study area during the construction stage of the development. These impacts are unlikely if the following mitigation measures are undertaken:</p> <ul style="list-style-type: none"> • Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Agency guidelines (EPA 1991, EPA 1996, Victorian Urban Stormwater Committee 1999) to prevent offsite impacts to waterways and wetlands; • Any construction stockpiles should be placed away from any drainage lines or water bodies • Preparation of a Construction Environmental Management Plan (CEMP) for submission with the planning permit application. The CEMP should include specific species/vegetation conservation strategies, daily monitoring, sedimentation management, site specific rehabilitation plans, control measures to be implemented when works occur around water/aquatic environments, weed and pathogen management measures, etc.; • Where possible use existing infrastructure, such as access tracks and farm roads for internal travel and roads to turbines.
<p>Could aquatic, estuarine or marine ecosystems be affected by the project? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, describe in what way.</p> <p>There is low potential for localised impacts on some aquatic wetlands within the study area due to direct or indirect impacts. Thee impact could be avoided through appropriate control measures during construction of the wind farm as outlined above for water environments.</p>

<p>Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.</p>
<p>Is mitigation of potential effects on water environments proposed? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Yes. As above for water environments. Mitigations measures are outlined in Section 6 of the Detailed Ecological Investigations report (Ecology and Heritage Partners 2022). Effects to water environments will be examined further through a Construction Environmental Management Plan (CEMP) as outlined above, that will be submitted with the planning permit application.</p>
<p>Other information/comments? (eg. accuracy of information)</p> <p>Any limitations to the flora and fauna assessments for the study area and surrounds are outlined in Section 2.5 Assessment Qualifications and Limitations of the Detailed Ecological Investigations report (Ecology and Heritage Partners 2022).</p> <p>Effects to water environments will be examined further and mitigated through the Environmental Management Plan which will be submitted as a condition on any planning permit issued.</p>

14. Landscape and soils

Landscape

<p>Has a preliminary landscape assessment been prepared? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please attach.</p> <p>Please refer to <u>Attachment D – Preliminary Landscape and Visual Impact Assessment (PLVIA)</u> prepared by Moir Landscape Architecture and submitted alongside this referral.</p>
<p>Is the project to be located either within or near an area that is:</p> <p>Subject to a Landscape Significance Overlay or Environmental Significance Overlay? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, provide plan showing footprint relative to overlay.</p> <p>Identified as of regional or State significance in a reputable study of landscape values? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify.</p> <p>Within or adjoining land reserved under the <i>National Parks Act 1975</i> ? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify.</p> <p>Within or adjoining other public land used for conservation or recreational purposes ? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify.</p>
<p>Is any clearing vegetation or alteration of landforms likely to affect landscape values? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p>Is there a potential for effects on landscape values of regional or State importance? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Please briefly explain response.</p>
<p>Is mitigation of potential landscape effects proposed? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p> <p>The PLVIA submitted alongside this EES referral includes proposed mitigation measures which may be implemented as part of the project, subject to further detailed design. The proposed mitigation measures include screen and supplementary planting primarily focussed on residences and roadsides, to assist in significantly reduce negative impacts. A comprehensive LVIA will be produced as part of the planning permit application process and will provide further detail with respect to mitigation measures.</p>
<p>Other information/comments? (eg. accuracy of information)</p>

Please refer to Attachment D – Preliminary Landscape and Visual Impact Assessment (PLVIA) prepared by Moir Landscape Architecture and submitted alongside this referral.

Note: A preliminary landscape assessment is a specific requirement for a referral of a wind energy facility. This should provide a description of:

- The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;
- The location of nearby dwellings, townships, recreation areas, major roads, above-ground utilities, tourist routes and walking tracks;
- Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.

Soils

Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?

NYD No Yes If yes, please briefly describe.

Please refer to Attachment E – Desktop Geotechnical Study prepared by Protest Engineering in relation to the project site. The geotechnical assessment carried out identified the project site had a very low risk of land instability and erodible soils. In terms of acid sulphate soils, there is a very low to low risk of major acid sulphate soils, and a medium to high risk of localised acid sulphate soils in a small part of the site, closest to existing water bodies. The Desktop Geotechnical Study finds that as long as the development does not encroach near or across water bodies, the risk of encountering potential acid-sulphate soils remains low. The micro-siting of turbines and associated infrastructure will avoid the areas identified as having higher potential for acid sulphate soils, or will include management measures to mitigate environmental impacts during the construction phase.

Are there geotechnical hazards that may either affect the project or be affected by it?

NYD No Yes If yes, please briefly describe.

No geotechnical hazards have been identified as part of the Desktop Geotechnical Study.

Other information/comments? (eg. Accuracy of information)

Please refer to Attachment E – Desktop Geotechnical Study prepared by Protest Engineering in relation to the project site.

15. Social environments

Is the project likely to generate significant volumes of road traffic, during construction or operation?

NYD No Yes If yes, provide estimate of traffic volume(s) if practicable.

The project is expected to generate up to 268 vehicle trips per day including 51 heavy vehicles (102 heavy vehicle trips). The construction period would be around 18 months, with the construction peak lasting for approximately 1-2 months. A further 4 – 6 months of technical commissioning works would occur following the main construction period and prior to commencement of commercial operations of the facility. This effect is considered significant with respect to the number of trucks generated onto public roads and the duration of this activity. The main outcome to be considered relates to potential pavement damage. The effects may be compounded due to cumulative effects of other wind farm projects in the area that may be in construction during the same period.

Please refer to Attachment G– Traffic Impact Assessment prepared by GHD.

As a result of this project, some local roads will require upgrades to allow for construction and haulage equipment to access the site. This is detailed in the report prepared by GHD at and submitted alongside this referral.

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?

NYD No Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.

Measures have been proposed within the Traffic Impact Assessment to adequately mitigate effects due to emissions, dust or odours as well as traffic conditions. The measures outlined in the Traffic Assessment would be implemented by GPG.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

NYD No Yes If yes, briefly describe the hazards and possible implications.

The project is not anticipated to expose the community to any health or safety hazards associated with chemicals, air or water.

With respect to noise, please refer to Attachment F – Environmental Noise Assessment prepared by Marshall Day Acoustics. The results of the noise modelling demonstrate that the predicted noise levels for the proposed wind turbine layout and candidate wind turbine models achieve the base noise limits determined in accordance with NZS 6808 at all neighbouring receivers. The assessment has also considered the operational noise of infrastructure associated with the wind farm (i.e. substation). Noise levels from the substation have been assessed as being in accordance with the EP Act and *Environment Protection Regulations 2021*. This indicates noise levels associated with the project would be compliance with Victorian policy requirements and would not result in unacceptable exposure to the local community.

With respect to transport, it is acknowledged that increased truck activity on Hamilton Highway as well as local roads (including Six Mile Lane, Woorndoo-Darlington Road and Darlington-Terang Road) has the potential to result in safety risk. The Traffic Impact Assessment submitted alongside this EES Referral has recommended the provision of road and intersection upgrades where appropriate in order to mitigate potential safety hazards associated with the project. These measures will be refined and confirmed as part of the next stage of approvals.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

NYD No Yes If yes, briefly describe potential effects.

The project is located within a rural farming zone and area of relatively low population density. Wind turbines have been located a minimum of 1 km from non-involved dwellings. The design and siting of the project will not affect residential access to community facilities and services. As such, the likelihood of resident displacement is limited.

During the construction phase, GPG would engage with Moyne Shire Council and school bus operators during the Project development to determine any routes which interface the over-dimension vehicle routes and the times at which these roads should not be used. It is expected that permits for over-dimension vehicles will have exclusion periods to ensure there is no interaction between over-dimension vehicles and school buses/school children.

Are non-residential land use activities likely to be displaced as a result of the project?

NYD No Yes If yes, briefly describe the likely effects.

Wind energy facilities are considered to be highly compatible land with agricultural uses and are therefore suitably located within the Farming Zone. On average, agricultural operations will lose around 1-3% of land due to displacement from the footprint of wind turbines and associated infrastructure.

The remaining land can continue to operate for agricultural purposes, both during the construction and operation phase of the wind farm. In fact, wind farm operations and infrastructure can provide some benefits to farming operations. In particular, income from wind farm lease payments offers an additional, stable income for farmers. In addition, hard standing associated with the wind farm can provide accessible, flat and dry spaces for farming equipment to be stored during seasonal agricultural activities, including field bins or machinery.

<p>Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the potential effects.</p>
<p>Is mitigation of potential social effects proposed? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p> <p>The proposed wind farm will offer the following key social and economic benefits to the region and to Victoria:</p> <ul style="list-style-type: none"> • Contribute to Victoria's Renewable Energy Targets of 40% by 2025 and 50% by 2030. • Significant investment in the regional and state economy. • The average annual construction impacts of the project on the regional economy are anticipated to create circa 120 direct and indirect regional jobs, and \$22M of annual direct and indirect value added. • The project is estimated to contribute approximately 84 direct and indirect regional jobs annually and roughly \$50M in annual direct and indirect value-added to the regional economy. • Fund a neighbourhood benefits scheme, which will consist of an annual payment to neighbours, dependent on their proximity to turbines. • Establish a community benefits scheme, which will be calculated on a per turbine basis and will be funded annually.
<p>Other information/comments? (eg. Accuracy of information)</p> <p>Traffic Impact Based on the findings of Traffic and Transport Assessment, while there is the potential for significant impacts, it is considered that these can be appropriately mitigated using standard construction traffic management measures and procedures.</p> <p>Mitigation measures include:</p> <ul style="list-style-type: none"> • road pavement upgrades, • Adherence of construction and supply vehicles to nominated truck routes, • reconstruction of local roads to ensure appropriate pavement widths are available, • involvement of an independent road quality auditor for the duration of the project, • dust suppression measures (water spray) • vehicle inspections for mud and debris, • road inspections for mud and debris, • provision of vehicle washdown areas, • car parking management, • provision of hardstand for vehicle parking, • traffic management to avoid conflict with school bus routes (if relevant). <p>The wind farm is expected to generate significantly less traffic during operation than during construction. It is anticipated that there will be no more than one staff member on-site on a day-to-day basis, generating no more than four light vehicle trips per day (assuming the staff member makes two return trips per day). Routine maintenance and inspections may draw up to 10 staff members to the site in a day, generating a maximum of 40 trips in a day (conservatively assuming each staff member drives in a private vehicle and makes two return trips to the site). These occurrences would be relatively infrequent. It is considered that the existing local road network will be more than adequate to accommodate the expected traffic volumes of the operational wind farm.</p> <p>Shadow Flicker and Blade Glint Reflection from the sun on blades will be minimised by the use of non-reflective finishes on turbine blades. Further detailed analysis of blade glint and shadow flicker will be undertaken as part of the planning permit application stage of the project. The micro-siting of turbines will be informed by the outcome of this analysis.</p> <p>Electromagnetic fields (EMF)</p>

The installation of wind turbines and associated infrastructure has the potential to cause small levels of EMF interference. An analysis of EMF will be undertaken in the next phase of investigation once turbine siting has been completed.

Cultural heritage

Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?

- No If no, list any organisations that it is proposed to consult.
 Yes If yes, list the organisations so far consulted.

Eastern Maar Registered Aboriginal Party (RAP)

What investigations of cultural heritage in the project area have been done?
 (attach details of method and results of any surveys for the project & describe their accuracy)

To date, the following cultural heritage investigations have been undertaken:

- Preparation of PACHO
- Desktop assessments and database searches
- Initial fieldwork – February 2022
- Standard Assessment Fieldwork – scheduled for August 2022

Please refer to Attachment A – Desktop Cultural Heritage Assessment report prepared by EHP

Is any Aboriginal cultural heritage known from the project area?

- NYD No Yes If yes, briefly describe:

- Any sites listed on the AAV Site Register
- Sites or areas of sensitivity recorded in recent surveys from the project site or nearby
- Sites or areas of sensitivity identified by representatives of Indigenous organisations

Two previously identified places have been located within 1km of the study area, both of which are “low density artefact distributions”

The ‘Puuroyuup Gully Massacre’ is located 3km to the east of the Study Area and is a highly sensitive Aboriginal place within the landscape. Also known as ‘Murdering Gully’ along Mount Emu Creek, it was the site of an Aboriginal massacre in 1839 led by local pastoralist Frederick Taylor. The project team will work closely with the RAP to ensure these areas are treated with appropriate respect and sensitivity.

Please refer to Section 2.5.1 and 2.6 of Attachment A – Desktop Cultural Heritage Assessment for further detail.

Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* within the project area?

- NYD No Yes If yes, please list.

No cultural heritage places listed on the Heritage Register, or the Archaeological Inventory under the Heritage Act 1995 have been found within the project area as part of the desktop level assessments.

Is mitigation of potential cultural heritage effects proposed?

- NYD No Yes If yes, please briefly describe.

At this stage, it is unknown whether there would be any cultural heritage effects. As such, mitigation is not yet determined.

Other information/comments? (eg. accuracy of information)

In accordance with legislative requirements, the CHMP currently being prepared, will identify the Aboriginal cultural heritage values of the project site. It will also assess the potential impact of the project on these values to ensure appropriate management.

Given that the turbines and associated infrastructure will have relatively small footprints, and in combination with the ongoing micro-siting works being undertaken with an emphasis on avoidance, it is anticipated that any harm to Aboriginal cultural heritage can be avoided or mitigated.

The process associated with CHMPs allows for a contingency plan framework in the event that Aboriginal cultural heritage is discovered during construction. This enables the swift, targeted response and management of any Aboriginal cultural heritage.

16. Energy, wastes & greenhouse gas emissions

What are the main sources of energy that the project facility would consume/generate?

- Electricity network. If possible, estimate power requirement/output
- Natural gas network. If possible, estimate gas requirement/output
- Generated on-site. If possible, estimate power capacity/output
- Other. Please describe.

Please add any relevant additional information.

The proposed wind farm will have up to 61 turbines. As the candidate turbine model has not yet been selected, the exact generation per turbine is unknown. It is anticipated each turbine would generate around 6MW – 7.2MW, and that overall, the project would have around 400MW installed capacity – around 1,400,000MWh per annum of energy generated

What are the main forms of waste that would be generated by the project facility?

- Wastewater. Describe briefly.
- Solid chemical wastes. Describe briefly.
- Excavated material. Describe briefly.
- Other. Describe briefly.

Please provide relevant further information, including proposed management of wastes.

Waste generation on site is likely to be negligible but small amounts may be generated by construction of infrastructure and installation of turbines. Every effort would be made to re-use and recycle project associated materials.

What level of greenhouse gas emissions is expected to result directly from operation of the project facility?

- Less than 50,000 tonnes of CO₂ equivalent per annum
- Between 50,000 and 100,000 tonnes of CO₂ equivalent per annum
- Between 100,000 and 200,000 tonnes of CO₂ equivalent per annum
- More than 200,000 tonnes of CO₂ equivalent per annum

Please add any relevant additional information, including any identified mitigation options.

The operation of the proposed wind farm will not generate any greenhouse gas emissions. Conversely, the wind farm will generate electricity which will displace greenhouse emissions from other sources of power. The project will deliver a net benefit in greenhouse gas emissions by reducing reliance on fossil fuels for electricity. Sustainability Victoria published a *guide to calculating greenhouse benefits of wind energy facility proposals* in April 2015, which provides a method for calculating the level of greenhouse gas abatement that can be expected to arise out of a wind facility. This involves multiplying the generation capacity by 8760 hours (24 hours by 365 days per year) by a capacity factor. The capacity factor for this project is anticipated to be circa 40%. Therefore, the expected outcome of the proposed Darlington Wind Farm will be the following:

- Generates approximately **1,400,000 MWh** of electricity each year.
- Displaces **1,400,000 tonnes of CO₂** of carbon dioxide
- Generates electricity equivalent to the average usage of approximately **240,000 households or 365,000 people**

17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

No Yes If yes, briefly describe.

Aviation

Please refer to Attachment H – Preliminary Aviation Assessment prepared by Aviation Projects. In summary, Aviation Projects finds that:

- Warrnambool aerodrome is the only certified aerodromes within 30 nm of the Project. It is not impacted by the proposed project
- There are two uncertified aerodromes (aircraft landing areas) located within 3.0nm (5.5 km) east from the eastern edge of the Project area to the published aerodrome coordinates.
- The Project is unlikely to create downwind turbulence from the wind turbines
- The Project would not infringe the PANS-OPS surfaces associated with Warrnambool aerodrome
- The Project would not impact the LSALT of any low-level air route or the Grid LSALT overlying the Project area
- The Project site is located outside of controlled airspace (wholly within Class G airspace) and will not impact any controlled airspace
- The Project site is outside aviation facilities of nearby certified aerodromes
- The Project is not anticipated to affect the Mt William radar facilities. A simple assessment may be required by Airservices Australia
- Some low-level operations, including aerial application and/or aerial firefighting and low-level Defence aircraft are possible within the vicinity of the Project area. Consultation with local and regional aircraft operators would be undertaken during an aviation impact assessment to document potential impacts and identify required mitigation, as applicable.
- Due to exceeding 100 m AGL, details of the Project must be reported to CASA as soon as practicable after forming the intention to construct or erect the proposed object or structure, in accordance with CASR Part 139.165(1)(2). This is likely to be a condition on the Planning Approval and can be reported after Planning Approval is received.
- It is anticipated that the Project would not require obstacle lighting.

With respect to aviation impacts, further development of the Project remains feasible. Current aircraft operations are not anticipated to be affected.

18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)

- Siting: Please describe briefly
- Design: Please describe briefly
- Environmental management: Please describe briefly.
- Other: Please describe briefly

Add any relevant additional information.

Turbines will be sited to minimise disruption to the natural environment. The siting of turbines and supporting infrastructure will avoid the loss of native vegetation, native habitats and avoid areas of high cultural sensitivity. In addition to this, GPG is committed to minimising the impacts on existing residents of the area.

An Environmental Management Plan will be required for the project and will be prepared as part of the next stage of approvals. This Plan will address the construction, installation and operational phases of the project, and will be submitted to the responsible authority prior to construction. It will detail appropriate mitigation measures that have been highlighted in investigations in addition to best practice measures.

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

NYD No Yes If yes, briefly describe.

The project is located within Victoria's South West Renewable Energy Zone (REZ). The REZ is expected to play a key role in delivering clean energy throughout Victoria. As such, there are several other wind farm projects within the vicinity of the site. Please refer to [Figure 11 – Nearby Wind Farm Projects](#), which identifies other projects proposed, under assessment or operating in the vicinity of the Darlington Wind Farm site.

In terms of the combined impact of various wind farms in the vicinity of the site, the PLVIA, Noise Assessment and Transport Assessment all consider the potential for cumulative impacts to arise as a result of the proposal.

Landscape and Visual Impact

The region provides optimum conditions for the harvesting of wind energy due to the flat, planar topography and minimal obstructions in the landscape. These characteristics are beneficial to the output of wind energy, and it is logical that over time the area has been identified for the development of wind farm projects.

The occurrence of multiple wind farms within a region has the potential to alter the perception of the overall landscape character irrespective of being viewed in a single viewshed. The PLVIA has considered whether the effect of multiple wind farms and other major infrastructure within the region have potential to become the dominant visual element, altering the perception of the general landscape character.

This analysis has extended to the consideration of the potential visual impact of wind farms when viewed sequentially. For example, if a number of wind farms are viewed in succession as a traveller moves through the landscape (eg. motorist travel routes or walking tracks) this may result in a change in the overall perception of the landscape character. The viewer may only see one wind farm at a time, but if each successive stretch of the road is dominated by views of a wind farm, then that can be argued to be a cumulative visual impact (EPHC, 2010).

The project is located on a generally flat terrain that is surrounded by scattered dwellings. Most dwellings near the project are surrounded by moderate to dense vegetation which will help limit views of the wind farm. It is, therefore, highly likely that the impact on private viewing locations will be limited. Considering the likely impact on public viewing locations and important travel corridors such as the Hamilton Highway, it is likely that the turbines will be visible as a key feature in the landscape. However, the position of these turbines is setback significantly from the travel corridor.

Due to the close proximity of Mt Fyans (future) and Dundonnell Wind Farms, it is likely that the Project will be viewed as an extension of the existing and operating wind farm projects in the region. The height of the proposed turbines (tip height 240 m) is generally consistent with the proposed height of the turbines associated with Mt Fyans (200m tip height). Therefore, the regions broader character is likely to be perceived as a landscape that is characterised by wind energy operations.

Noise

The Noise Assessment considers the cumulative impact of those wind farms located within 10km of the Project Site, being Dundonnell, Mt Fyans and Mortlake. Wind farms located further than 10km from the proposed Project Site, (i.e. Salt Creek Wind Farm), would not have cumulative effects likely to affect the assessment outcome.

The assessment found that the noise contribution of the Dundonnell and Mortlake South wind farms is sufficiently low to be inconsequential to the noise assessment for the Darlington Wind Farm. Furthermore, the predicted noise contribution of the Darlington Wind Farm at the receivers in the vicinity of the Dundonnell and Mortlake South wind farms would not affect the compliance outcomes for these developments.

With respect to Mt Fyans Wind Farm, the assessment considered noise levels at the wind speeds which give rise to the highest noise emissions from each site respectively. The noise level contours are predicted on the basis of downwind propagation from each turbine. In most instances where cumulative noise is considered, a noise sensitive receiver cannot be simultaneously downwind of all wind turbines of adjoining projects. As such, the predictions are conservative for the purpose of considering cumulative noise levels. The assessment concluded that the compliance outcome for both the Darlington Wind Farm and the proposed Mt Fyans Wind Farm would not be affected by the noise contribution from the other project.

Transport / Traffic

With consideration of the wind farms in the surrounding area, Dundonnell and Mortlake are now complete and therefore will not contribute to any significant traffic.

While construction of the Golden Plains wind farm is yet to be completed, due to the location of the project, to the northeast of the Darlington site near Rokewood, there is not expected to be significant overlap in traffic impacts. The quarry vehicles to the Golden Plains site currently travel on Rokewood-Skipton Road (C143) from just south of Skipton. This section of road is unlikely to be used for the Darlington Wind Farm Project.

The Mount Fyans Wind Farm is located at the immediate west of the Darlington site with construction expected to commence around 2024 (subject to planning). Due to the timing and proximity of this site to the Darlington site, construction traffic management measures should be considered to implement the coordination of proposed haulage routes. This would ensure that any significant cumulative impacts to the surrounding road network are appropriately identified and mitigated as required in consultation with the relevant authorities.

The Hexham Wind Farm is proposed to be located approximately 25 km west of the Darlington site, via the Hamilton Highway. The Hexham Wind Farm is in a similar stage of planning as the Darlington Wind Farm and may also elect to use similar haulage routes. As such, equivalent coordination measures will be required with the operators of the Hexham Wind Farm during construction traffic management planning to assess and mitigate any cumulative impacts.

20. Investigation program

Study program

Have any environmental studies not referred to above been conducted for the project?

No Yes If yes, please list here and attach if relevant.

Cultural Heritage

Following the completion of the PACHO and the desktop review phase of the CHMP, EHP are now progressing to the next stages of the process to produce a CHMP. This includes working with the RAP (Eastern Maar) to conduct the two phases of fieldwork:

1. Standard Assessment: where we conduct walkover surveys of the activity area where we can, targeting areas that will be impacted most by the wind farm and in co-ordination with the land-owners. This fieldwork is scheduled for August – September 2022.
2. Complex Assessment: based on the results of the standard assessment, EHP would undertake testing to determine where, if any, subsurface cultural material will be impacted by the development.

A meeting will be undertaken with the RAP (Eastern Maar) after each phase of the assessment to discuss results, implications and management conditions as required. This fieldwork and these meetings will inform the preparation of a CHMP.

Other investigations

A number of further investigations are planned which will be necessary at the detail design stage of the project. These include:

1. Social and Economic Assessment
2. Shadow Flicker, Blade Glint and Electro Magnetic Field Assessments
3. Landscape and Visual Impact Assessment (advancement of PLVIA)

These further studies are dependent on the siting of individual turbines. In many cases the principles of siting of turbines that TME Australia employs are informed by these factors in order to mitigate any potential negative impacts from the proposed development.

Has a program for future environmental studies been developed?

No Yes If yes, briefly describe.

Consultation program

Has a consultation program conducted to date for the project?

No Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

Refer to Section 5.1 of Attachment I – Engagement Plan. Table 6 outlines the engagement activities that have occurred in the lead up to lodging the EES Referral. In particular, initial engagement has occurred with:

- Local Landowners
- Local Community
- DELWP
- Moyne Shire Council
- Eastern Maar RAP

Has a program for future consultation been developed?

NYD No Yes If yes, briefly describe.

Please refer to Section 5.2 and 5.3 of Attachment I – Engagement Plan. Section 5.2 outlines the proposed engagement phases should an EES be required, whilst Section 5.3 outlines the process should an EES not be required.

In summary, it is intended to continue engaging with and/or commence engagement with:

- Local Landowners
- DELWP
- Moyne Shire Council
- Eastern Maar RAP
- Corangamite Shire Council
- Community interest groups
- Special interest groups
- Broader community members
- Media
- Industry Bodies/ Associations

Authorised person for proponent:

I, **Guillermo Alonso Castro** (full name), **Director, Projects Development** at **Global Power Generation Australia Pty Ltd** (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature _____ Date 19/09/2022

Person who prepared this referral:

I, **Heidi Duncan** (full name), **Associate Town Planner** at **Tract Consultants** (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature _____ Date 19/09/2022