HEPBURN HYBRID FACILITY

PLANNING PERMIT APPLICATION

PREPARED BY HEPBURN WIND

OCTOBER 2021

hepburn wind

ENERGY FORMS

Prepared by

Version	Author	Date	Description of changes
1	Taryn Lane	3/3/20	
2	Fi Cotter	25/3/20	Minor additions
3	Taryn Lane	24/9/20	
4	Taryn Lane	27/10/20	Final site plan and noise assessment
5	Taryn Lane	23/04/21	Responses to request for further information from DELWP
6	Taryn Lane	2/10/21	Responses to request for further information from DELWP

Energy Forms

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1 Executive Summary

This report has been prepared to provide supporting information for a planning application by Hepburn Community Wind Park Co-operative Ltd (Hepburn Wind) for a Renewable Energy Facility (solar and battery) to be described as the 'Hepburn Energy Park' in this document. There is an existing operating wind farm onsite in Leonards Hill. The solar and battery proposal is to be co-located with that existing wind farm. Aspects of this planning permit have been extracted from the original planning permit application for the wind farm.

Hepburn Wind intends to build a hybrid wind, solar and battery park, by co-locating 5MW AC (7.44MW DC) of solar and a 10MWh battery storage facility on site at Leonards Hill in the Hepburn Shire. The co-located solar farm offers the opportunity to significantly contribute to the Hepburn Shire's greenhouse gas mitigation efforts, maximise existing infrastructure on site, improve social wellbeing, increase environmental resilience, and create real economic benefits for the region.

The overall development of the Hepburn Energy Park utilises the existing infrastructure at the site - the two turbines and balance of plant which were commissioned in 2011. This planning application only applies to the new solar, battery storage and associated balance of plant works, it does not seek to change any planning conditions for the existing permitted and operational wind farm. The solar farm has been developed under 'Sensitive Design Principles' and will be a unique development in solar farm models.

In 2018, Hepburn Wind and Hepburn Shire Council signed a Memorandum of Understanding in order to collaborate formally and:

- Declare an ambition to be the first 100% renewable Shire in Australia
- Aim to be a lighthouse community for community-owned energy facilities, demonstrating the economic and environmental benefits of locally owned and generated renewables
- Set a target of zero-net energy by 2025 for the Hepburn Shire locality, to be monitored and evaluated annually

The 2019 whole of community Z-NET Community Transition Plan, which was then also endorsed by Council highlights the importance of developing more local renewable energy facilities across the shire in order to reach the ambitious targets of zero-net energy by 2025 and zero-net emissions by 2030.

The triggers for a planning permit are:

- civil site preparation including earthworks
- construction of solar utility infrastructure including panels, inverters and fencing
- future battery storage

The following consultants and organisations have contributed to this application – in addition to the historical inputs for the Hepburn Wind original permit:

- DNV GL
- Fire Management Consultants
- Laser Electrical
- Vestas
- Coffeys
- Latitude Design
- Geordie Scott-Walker Ecological Consulting Services
- Kinelli Solar
- Meralli Solar
- Powercor
- Renew
- Fulcrum 3D
- Ecology and Heritage Partners
- Energy Forms
- Ashurst Legal
- Bleyer Lawyers
- Middleton Group
- Marshall Day
- Nielsson, Noel and Holmes Pty Ltd
- PPT Accounting
- Enhar
- SMA

The solar farm development is supported by a $500,000 grant under the State Government, DELWP, Renewable Communities Program.

2 INTRODUCTION

Hepburn Wind is a community co-operative of 2013 people who pooled almost $10m to build Australia's first community-owned wind farm, most of whom are local. Hepburn Wind is the owner and operator of the wind farm, at Leonards Hill, about 100km north-west of Melbourne. The 4.1MW wind farm hosts two turbines, (named Gale and Gusto), which produce enough clean energy to power over 2100 homes. On average, the wind farm produces more energy than the houses in nearby Daylesford and much of the surrounding area require. It is the first and still the only example of a local zero-net energy project.

The co-operative has surpassed significant challenges to be an iconic Australian wind farm. It now needs to grow its economies of scale to ensure resilience into the future and to help meet community ambitions for zero-net emissions. After deploying best practice wind farm development and community engagement, the co-operative is aiming to deliver best practice solar farm development for this project via showcasing 'Sensitive Design'. Working from the principles of sensitive design in order to deliver a net positive benefit through the development and ensure it has been designed with the qualities of the local context in mind. The co-operative has worked closely with the landowner Ron Liversidge to do this, which has resulted in an unique approach - utilising the least arable land area on the farm and proposing to deploy a mix of east-west and north-south highly condensed technology in order to utilise the existing topography. This technology selection means there will be minimal topsoil disturbance or use of concrete pylons in the construction and a footprint of at least 50% less than other technologies means a low impact as the solar farm will be built on a portion of the farm that is low quality farmland (the summit and slope of Leonards Hill) therefore reducing the impact on the surrounding high quality farmland.

The community enterprise model provides many economic benefits for the region:

- construction employment
- local purchasing policy, whereby local service providers are used wherever possible
- ongoing employment: HW currently employs three-part time local staff in the management of the co-operative
- return to investors: a large proportion of the ongoing profits of the project will remain in the region as we have an existing investment policy that over 50% of investors must be local to the project
- the Hepburn Wind Community Fund

The work to be undertaken that is relevant for this permit will be:

- civil site preparation
- construction of solar utility infrastructure including panels, inverters and fencing
- future provision for battery storage

This report has been prepared to collate and present for the consideration of the assessment manager and referral agencies.

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PROJECT TITLE: Hepburn Wind Co-located Solar Farm

ADDRESS	2040 Ballan-Daylesford Road Leonards Hill 3461
REAL PROPERTY DESCRIPTION	Please view site plan showing the existing wind farm and its allotments and the proposed works and its allotment/s.
TENURE	Wind farm, Telstra tower, cattle
REGIONAL PLAN	Grampians Regional Roadmap to Zero
LOCAL GOVERNMENT	Hepburn Shire Council
PLANNING SCHEME	Hepburn Planning Scheme
ZONING	Farming Zone
OVERLAYS	Environmental Significance Overlay Schedule 1 (ESO1) Bushfire Management Overlay Designated Bushfire prone Area

3 Background

Hepburn Wind intends to build a hybrid solar and battery park, by co-locating 5MW AC of solar on site to link in with the existing operating wind farm at Leonards Hill in the Hepburn Shire and future allowance for 10MWh of battery storage on site. The co-located solar farm offers the opportunity to significantly contribute to the Hepburn Shire's greenhouse gas mitigation efforts, maximise existing infrastructure on site, improve social wellbeing, increase environmental resilience, and create real economic benefits for the region.

The overall development of the Hepburn Wind Solar Farm utilises the existing infrastructure at the site - the two turbines and balance of plant which were commissioned in 2011 under Permit No: 2006/9231. This application only applies to the additional solar, battery storage and associated balance of plant works. The existing wind farm will continue to operate under its current planning permit.

Community need

In 2018 the Hepburn Shire community declared their aspiration to be a 'lighthouse community' for community-owned energy facilities, demonstrating the economic, social and environmental benefits of local community-owned, renewable generation infrastructure. Further, the 2019 Z-

NET Community Transition Plan (CTP), plans out a target of zero-net energy by 2025 and zero-net emissions by 2030 for the Hepburn Shire. Currently Hepburn Shire's emissions are 262,041 tonnes of carbon per year. The 2020 Audit of Progress shows that the Shire is currently at 37% renewable.

The proposed solar farm will deliver on this community need by:

- increasing the uptake of renewable energy generation in the Hepburn Shire, delivering 20% more towards the zero-net energy goal of 2025;
- enhancing the economies of scale for the community co-operative;
- utilising the existing grid connection and $1.6m of grid upgrades that Hepburn Wind made in 2011;
- delivering energy justice and social benefit;
- promoting community participation; and
- reducing greenhouse emissions by approximately 9,000 tonnes per annum.

To reach 100% renewable electricity supply in the most realistic fashion, the shire needs mid-scale grid connected generation projects to deliver:

- 40,000MWh provided through 2-4 local projects dependant on technology and scale deployed

The proposed solar farm will provide approximately one quarter of this supply.

Membership support

Hepburn Wind regularly engages with its 2013 members around growth strategies. In 2017 members were surveyed and solar and battery storage was strongly supported as can be see below in the graphic.

Figure 1 Hepburn Wind member perspectives

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In 2017 the board of Hepburn Wind established the Future Generation Working Group who have been investigating the potential for a grid-connected solar farm at Hepburn Wind. This solar farm will maximise use of the existing grid infrastructure at the site and enhance the economies of scale for the co-operative.

Hepburn Wind's 2019 Annual General Meeting was held in November at the Daylesford Town Hall. Members received a detailed presentation on the solar farm development, outlining the progress to date, conditions for proceeding and the value for the co-operative. As part of the AGM proceedings, a Special Resolution Rule Change was passed which expanded the primary activities of Hepburn Wind, enabling the development of solar, other energy forms and agribusiness. Members voted unanimously in support of this rule change, signalling the community support. Members and supporters have had numerous updates on the development through e-newsletters, website updates and media stories since 2017.

4 The Project

4.1 Development Summary

Various pro-bono and discounted services have been provided to Hepburn Wind to complete technical studies and planning permit documentation equalling over $300,000 of in-kind contribution to date. In 2019 the co-operative was awarded a $500,000 grant from the Victorian State Government's Renewable Communities Program, which will largely go towards capital costs of the solar farm development.

The project scope has been refined from 2018 and 2020 via the following key documents:

- Business case development;
- Expression of Interest submissions;
- Energy Yield and Grid Curtailment Study;
- Steady State Feeder Study;
- Sensitivity Analysis;
- Technical Optimisation and Battery Storage Study;
- Geotechnical Study.

These key documents have resulted in the scale of the project increasing from 3MW AC to 5MW AC. A Fulcrum3D purpose built solar monitoring device was installed in 2017 to ensure detailed solar radiation that was specific to Leonards Hill was used for the energy yield assessment with three years of data.

4.1.1 Solar Array

The solar farm is proposed to be 5MW (AC) and will occupy approximately 7ha. The solar farm will have a mixed configuration of East/West PEG and South/North PEG using solar PV panel technology. The East/West configuration will maximise yields in the morning and afternoon, whilst the South/North PEG will enable the usage of the Leonards Hill north facing slope and will

maximise midday generation. This configuration has been designed to match the wind generation profile.

PEG design entails 30×30m solar grids divided by narrow laneways. Solar panels will be densely clustered to capture as much sunlight as possible. The panels are elevated 90cm above the ground (that will exclude most forms of agricultural production). This concentrated design results in a footprint of around 50% less than that of other technologies such as fixed and single axis.

The following image is indicative of how the solar array will look.

Image 1 PEG technology

The following image provides the elevation view

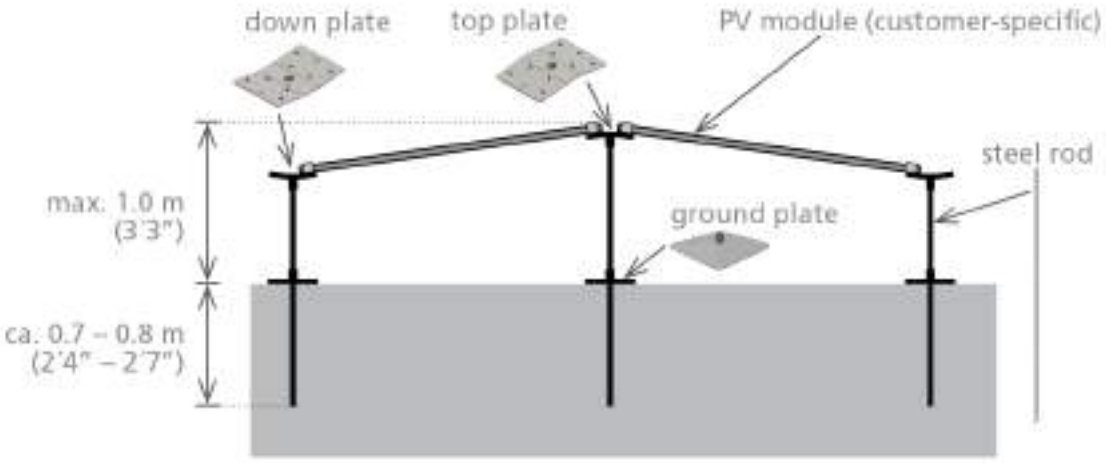

Image 2 PEG EW Elevation View

4.1.2 Inverters

The proposed inverters are to be two SMA Sunny Central 2500-EV. Image 4 Site Plan represents the inverters and their locations as does Attachment 8 Development Plans. The proposed colour to be utilised for the integrated inverter and transformer skid is Transformer Grey which is a pale green colour that blends well with the landscape and matches the existing wind farm kiosks. It should be noted that a single inverter deployed early and has been installed as part of a routine maintenance activity to meet other legislated compliance obligations (the REFCL program) and it is included it in the current application for the avoidance of doubt.

To stabilise the utility grid HW must provide reactive power to maintain a power factor of from 0.85 to 0.87 (during both feed-in and non feed-in operation). This inverter can provide the necessary reactive power in both day and night conditions.

4.1.3 Battery Energy Storage

An energy storage facility is proposed to be built in the location earmarked near the substation in Image 3 Site Plan. The capacity of the batteries will be up to 10MWh as determined by the Battery Study by DNV GL (see Attachment 3) and will be the approximate scale of two 40 foot shipping containers.

The foundations and supporting equipment will be finalised at a later date. It is anticipated that the energy storage facility will manage any excess energy that would otherwise be impacted by negative pricing events or curtailed by the grid export limit to be stored and then discharged at times of lower generation. In addition, it will be able to perform frequency control integration, energy smoothing and energy arbitrage.

4.1.4 Underground Cabling

Underground cables will connect the solar farm to the inverters and will be delivered in trenches that run parallel to the access tracks. The trenches will be 30cm wide and 60cm deep. The cable runs are indicated on the Site Plan.

4.1.5 Grid Connection

The site is located approximately 42km from Powercor's Ballarat North zone substation, and is connected via the Powercor 'BAN 011' 22 kV feeder circuit. It is represented on the following map.

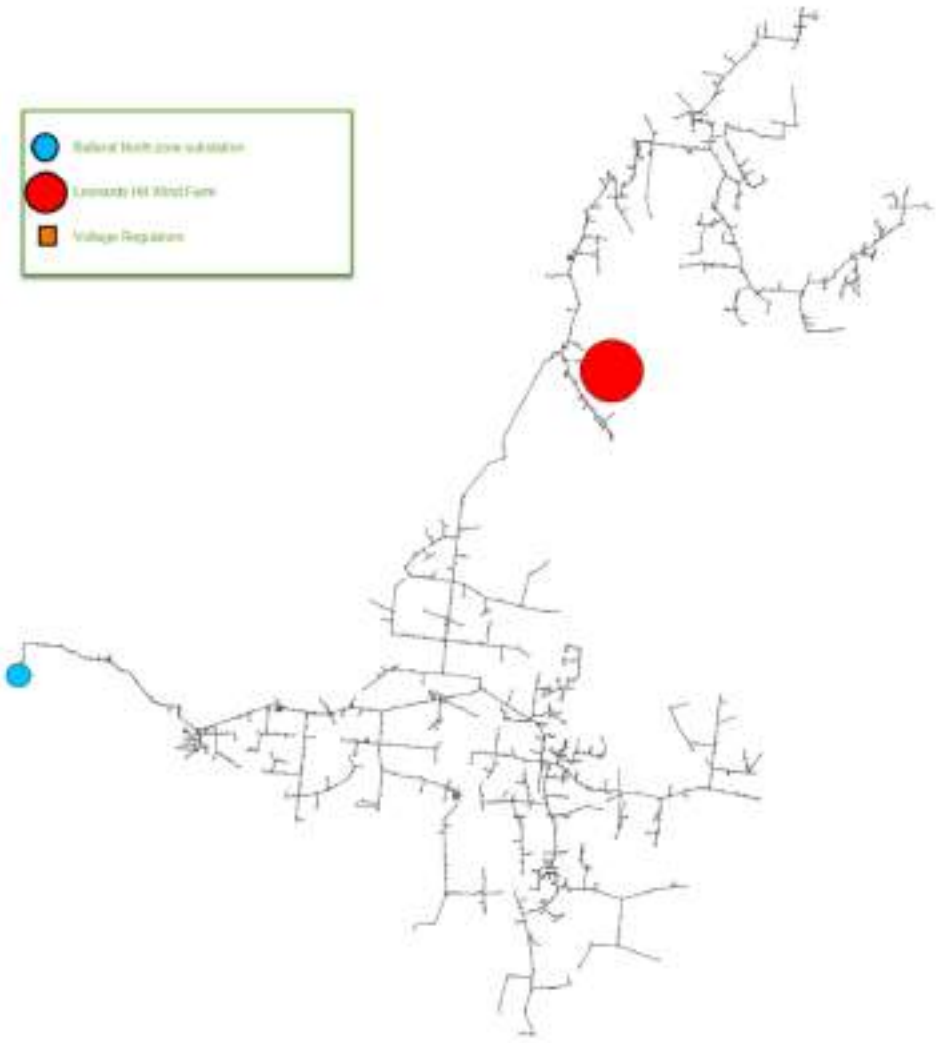

Figure 2 – BAN11 Feeder

The proposed grid connection solution is an uplift in the current export limit of 4.1MW to 6.8MW without needing any further upgrades to the 22kV distribution network.

DNV GL has carried out load flow and short circuit analysis to assess the maximum allowable additional generation and compliance of the Hepburn Wind Farm (HWF) (also known as Leonards Hill Wind Farm). Compliance was checked against the Victorian Electricity Distribution Code (EDC) and Powercor's planning limits. The cumulative output of both solar inverters was curtailed to 3.8 MVA at fixed 0.83 leading power factor, of which real power would be a maximum of approximately 3.1 MW.

The proposed total site capacity is 9.1MW where export is limited to 6.8MW in Power Factor control mode using a Power Plant Manager (PPM).

The results presented in the Power System Study by DNV GL (available at Attachment 2) show that the combined wind and solar farm installation was compliant with all criteria assessed using the control mode proposed. This study passed due diligence by Powercor in 2020.

4.1.6 Site Access

The site is very well catered for by existing transport infrastructure. The Ballan–Daylesford Road adjacent to the site is a Road Category 1 and in good repair. It feeds directly into the Western Freeway approximately 20kms from the proposal site.

An access track was constructed for the wind farm development from the site entrance on the Ballan–Daylesford Road to the turbines. This track was used during the original wind farm construction and thereafter for maintenance vehicles to access each wind turbine, this existing access track will link in with the solar array. There will not be new access track built for the solar array, but rather a boundary setback will provide car and machinery access around the periphery.

4.1.7 Site Entrance

As the construction of the wind farm in 2011 has resulted in high quality access roads, a car park area at the front entrance and hardstands for large vehicle access on site all access is existing.

The site is accessed from Ballan-Daylesford Road via existing crossover and driveway. The driveway passes through Lot 1 TP671 to the subject site. The driveway allows access to the existing turbines and proposed solar array.

4.1.8 Parking Area

The nature of the existing wind farm itself allows vehicles easy access to both turbine locations. The area is an open field. General maintenance staff in 4WD cars simply use the areas around the turbines for parking. For wind farm public tours, buses and cars use the Ballan-Daylesford Road entrance car park area (marked on site plan). There is ample existing parking on site for the solar farm construction phase and the ongoing operations.

4.1.9 Fencing

The existing wind farm has fencing and security cameras installed on site including:

- locked front access gate
- high voltage switch yard with security fencing and locked access
- fencing along the access track to the turbines
- security camera at front gate and high voltage switch yard

It is proposed that the solar farm will have an aesthetically pleasing design with no barbed wire. Key features such as height (150-170cm) to prevent easy access, lockable access gates, emergency access and animal prevention (particularly for wallabies, kangaroos and cattle) will be part of the design.

Hepburn Wind has a strong history of artistic integration with the wind farm through projects such as murals on both of the turbines, a live generation sign at front of wind farm, and regular artist residencies as part of Hepburn Wind's community benefit sharing approach. The same artists that delivered the turbine murals and live generation sign will again collaborate on the solar farm fence. As this hasn't been finalised at the time of permit submission, the basic framework of a farm fence with wire mesh and wooden posts is put forward. An amendment to this may be sought at a later date.

4.1.10 SETBACK/BUFFER AREAS

The solar array and plant infrastructure is set back from the northern boundary by a minimum of 30m, western boundary by 325m, southern boundary by 424m, and eastern boundary by 904m and can be viewed in Image 3 Site Plan. Image 5 Neighbourhood Map represents the density of population up to the 3km zone. Due to the scale of the project, there will not be staging areas, the equipment will be laid out on the wind turbine hardstands.

The following setbacks are associated with the solar farm site plan.

Renewable Energy Facility Component	Distance to Nearest Neighbour Property Boundary (m)	Distance to Nearest Road (m)
Inverters	Inverter 1: 309m to fence/ 597m to house Inverter 2: 165m to fence/ 448m to house	Inverter 1: 400m Inverter 2: 575m
Solar arrays	30m to fence, 309m to house	335m to northern road boundary. 426m to western road boundary.
Battery Bank	341m	262m
Fencing	20m	346m

Neighbours have been updated about the the proposed development in 2020, prior to submitting the permit with an offer to run virtual information sessions for those that were interested. The co-operative has worked hard to consider neighbourhood impact in the design and were hoping to run drop in sessions at the Leonards Hill Hall in order to present the photomontages and other information. However, due to lockdowns only mail, media and online information was possible in the timeframe and some primary addresses are known to have changed for weekender properties.

In order to ensure a minimal impact, Hepburn Wind engaged Marshall Day to undertake a noise assessment of the two SMA2500 inverters to ensure they would be compliant under the wind farm planning permit and of low impact to neighbouring properties. The noise assessment is available at Attachment 4.

The nearest residential receiver is the landowners property located approximately 450m north northwest from the nearest proposed inverter/transformer at 2040 Ballan Daylesford Road. Noise-sensitive receivers located further afield will experience lower noise levels than the nearest receiver due to attenuation provided by additional distance from the source, therefore this preliminary analysis is limited to the dwelling at 2040 Ballan Daylesford Road. A preliminary desktop assessment of the inverter/transformer units associated with the proposed solar farm at the Hepburn Community Wind Farm has been undertaken in accordance with NIRV.

Noise levels from the proposed equipment were predicted below the most stringent night-time recommended level of 36 dB Leff by up to 12 dB. The noise assessment therefore demonstrates that the inverter/transformer units associated with the proposed solar farm at the Hepburn Community Wind Farm can be designed and developed to achieve Victorian policy requirements for operational noise.

4.1.11 Lighting

Additional motion sensor lighting may be installed onsite, however, it is anticipated that the current lighting at the turbines and balance of plant area are sufficient for the proposed solar array and the co-operative wishes to reduce any light pollution impact to neighbours.

4.1.12 Signage

Hepburn Wind has a live generation sign at the front of the wind farm. This will showcase the combined total of generation from the wind and solar farm. Additional interactive signage points may be added close to the solar farm array for site use. They will not be visible from the road or other public areas.

No further signage at the road is proposed.

4.2 Construction Process

4.2.1 Construction timeline and Staging

The final completion date of the solar farm will largely depend upon equipment availability; however, it is intended to be completed within the permit deadline.

Notwithstanding this, it is planned that the solar farm will be completed within 12 months of securing the Planning Permit. The period of construction activity will be approximately two months.

As per all of Hepburn Wind's activities there will be a focus on local employment for the installation. Local workers will be supported by team leaders who have managed PEG installations on other sites. The teams involved will be made up of:

- assemble team (unskilled labour)
- electrical team (qualified electricians as well as unskilled labour)
- civil team for balance of plant foundations and construction of cable trenches
- high voltage team for connection of plant

The workforce will be made up of around 12-25 workers.

The construction stages are:

1. Mobilisation
2. Site establishment
3. Construction
4. Pre-commissioning
5. Commissioning/grid connection
6. Demobilisation

4.2.2 Temporary access

There is existing permanent access via the existing roads and access tracks for the wind farm.

4.2.3 Parking and loading

The Site Plan on the following page shows the parking and loading area out the front of the wind farm site on Ballan-Daylesford Road.

4.2.4 Temporary Signage

Temporary signage will be installed at the front entrance of the site to notify people of the construction.

Image 3 Site Plan at a distance with titles

Image 4 Site Plan with titles

Legend

------ cable

------ fence

inverter

battery storage

water tank

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4.3 Commissioning

4.3.1 Process and timing

Due to the existing infrastructure on site, the commissioning process is minimal. A single SMA2500 inverter has been installed in order to meet REFCL compliance. The second will be deployed when the solar farm is built. This will greatly reduce the complexity of the connection. The existing connection agreement is proposed to be increased from 4.1MW to 6.8MW in order to facilitate the solar farm generation. This will be a contractual change and no upgrades will be performed on site.

4.3.2 Number of staff

Hepburn Wind currently employs three part time staff to manage the co-operative under 1FTE. The same operating model is expected to continue with the addition of the solar farm. Service providers are contracted for operations and maintenance of the energy facility.

4.3.3 Operation and Maintenance

The solar farm will be monitored remotely 24 hours per day under an agreement with an Operation and Maintenance service provider. Hepburn Wind will offer a long term maintenance agreement that schedules routine maintenance to be undertaken every six months.

The condition of the grassland underneath the solar panels will change in response to high and low rainfall years, drought and other climate drivers. Keeping grass and vegetation low around panels (10cm) is a necessity as the smallest overshading can cause significant reductions in efficiency and create a potential bushfire risk. Sheep accompanied by seasonal mowing will be an appropriate way to control the biomass.

Mowers are widely used at solar farms to reduce weeds and manage overgrown vegetation. Mowing beneath solar panels can be difficult due to the height and placement of panels but new models have been introduced that enable solar sites to run mowers beneath panels using remote controlled units. The remote control enables quick and safe operation of the mower at a distance. Site managers can also lay cut grass down (in moist conditions) to decompose.

4.4 Decommissioning

The Lease Agreement in place with the landowner requires the owner of the wind farm to remove the wind turbines and solar PV array from the land at the end of the 25 year and 40 year leasing periods.

However, depending upon the landowner's acceptance or otherwise of a new agreement, the following options may also be available:

- Continue maintaining and operating the turbines and solar PV to produce renewable energy.
- Upgrade the turbines and solar PV to more current technology and generate higher levels of renewable energy into the future.
- Remove the solar PV in accordance with the Landowner Lease Agreement.

Any continuation or upgrade of the solar farm will be assessed for required permits at the time.

Should the solar farm be decommissioned then land remediation measures would also apply – however these would be very minimal given the sensitive design of the project there would not be any need to recontour the land to its preconstruction condition and there would be minimal revegetation. The works would include disconnecting the project from the grid, removing the installed features such as modules, PEG frame, electrical wire, inverters, transformers, fencing, etc.

In regards to the disposal and recycling of panels that are decommissioned, recycling technology can be categorised as either bulk recycling (recovery of high-mass fraction materials such as glass, aluminium and copper) or high value recycling (recovery of both bulk materials and semiconductor and trace metals). Currently Reclaim PV in Adelaide is the only recycling plant in Australia, however this important market will continue to grow to meet the market need, At the time of decommissioning, but also with any early failing PV modules that are not covered by manufacturer warranty, Hepburn Wind will ensure that recycling of as many parts as possible occurs.

5 Subject Site and Surrounds

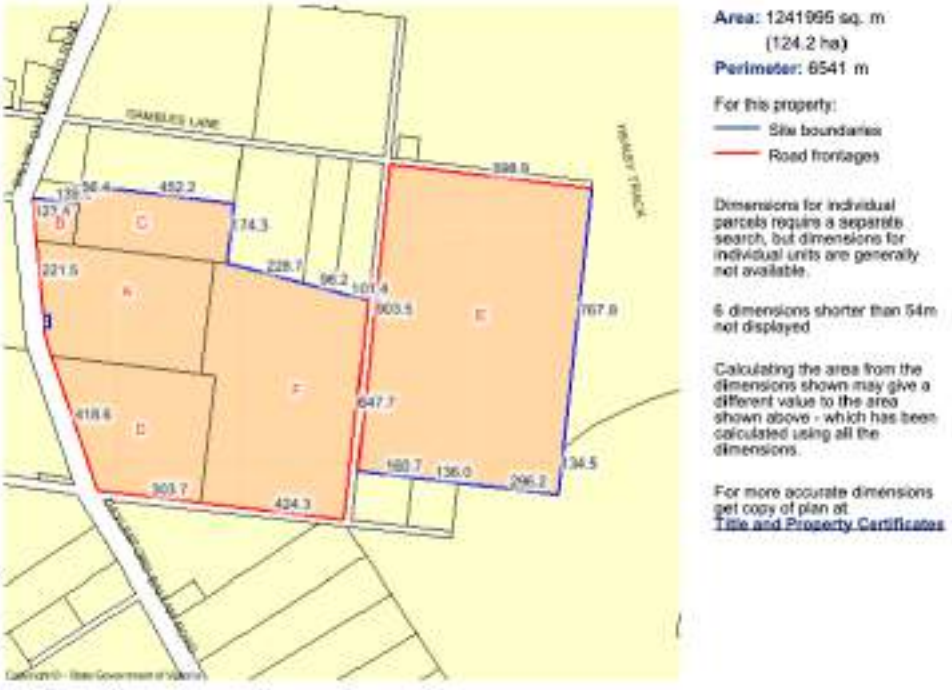
5.1 Site Selection

The solar farm site is approximately 10 kilometres south of Daylesford at Leonards Hill. It is located on the eastern side of the Ballan–Daylesford Road. The site is cleared farming land used predominantly for cattle grazing.

Site selection for the proposed facility was driven by utilisation of the existing electrical infrastructure on site at Hepburn Wind, in particular the grid connection and necessary upgrades that were performed in 2010 to enable the 4.1MW of wind energy capacity on site. Further utilisation of the existing infrastructure will enhance the economies of scale for the co-operative.

The proposed site is on privately owned farmland within the same title as the existing wind farm and the topography and geology is appropriate for the low impact solar design that is proposed. Within the 121 hectare (300 acre) farm parcel, the co-operative worked closely with the land owner Ron Liversidge, to identify the least arable parcel and a technical solution that will not need earthworks nor topsoil disturbance.

The subject land is owned by one landowner, R&N Liversidge Pty Ltd, as trustee for the R&N Liversidge Family Trust of RMB 1207, Leonards Hill, Victoria. The land comprises of six parcels which are listed in the map below.



Parcel Details

Letter in first column identifies parcel in diagram above

	Lot/Plan or Crown Description	SPI
A	Lot 1 TP671	1\TP671
	PARISH OF WOMBAT	
B	Allot. A1	A1\PP3857
C	Allot. A2	A2\PP3857

	Lot/Plan or Crown Description	SPI
	PARISH OF WOMBAT	
D	Allot. B2	B2\PP3857
E	Allot. 13 Sec. 3B	13~3B\PP3857
F	Allot. B4 Sec. Y	B4~Y\PP3857

Figure 3 Title Plan

An existing lease covers the current infrastructure on site and will be amended and extended in order to cover the footprint of the proposed solar farm.

In regards to all permit triggers, and all land impacted including covenants and caveats listed on the register search statement are provided in the table below. The application does not breach these conditions. Please see Attachment 7 for the full copy of all certificates of title. The following table describes in detail the relevant titles, overlays and covenants and caveats applicable to each, the blue highlighted areas relate to the proposed solar and battery storage.

Title Reference		Lot Plan or Crown Description	SPI	Zoning / Overlays	Covenant/Caveat
Crown Allotment B2 Parish of Wombat. PARENT TITLE Volume 01330 Folio 997	A	Lot 1 TP671 TP671N	1\TP671	Zoning: Farming Zone Overlays: Bushfire management Overlay Environmental Significance Overlay ES01 Designated Bushfire prone Area	Caveat AK400851K 14/06/2013 LEONARDS HILL WIND OPERATIONS PTY LTD Grounds of Claim: LEASE Caveat AK532893E 19/08/2013 BENDIGO AND ADELAIDE BANK LTD Grounds of Claim: MORTGAGE OF LEASE Caveat AN806467W 08/05/2017 TELSTRA CORPORATION LTD Grounds of Claim: LEASE
	B	Parish of Wombat Allot A1	A1\PP3857		
VOLUME 10172 FOLIO 202 Crown Allotment B2 Parish of Wombat. PARENT TITLE Volume 01330 Folio 997	C	Allot A2 TP670Q	A2\PP3857		
VOLUME 10172 FOLIO 202 Crown Allotment B2 Parish of Wombat. PARENT TITLE Volume 01330 Folio 997	D	Parish of Wombat Allot. B2 TP670Q	B2\PP3857		
	E	Allot. 13 sec 3B	13~3B\PP3857		
VOL 9845 FOL 484 Parent Title 01454 Fol 637 Crown Allotment B4 Section Y Parish of Wombat. PARENT TITLE	F	Allot B4 Sec Y TP710955N	B4~Y\PP3857		Covenant as to part S154260D 06/10/92 Easement to gas and fuel created by C/E s154260D Caveat AK400851K 14/06/2013 LEONARDS HILL WIND OPERATIONS PTY LTD Grounds of Claim: LEASE Caveat AK532893E 19/08/2013 BENDIGO AND ADELAIDE BANK LTD Grounds of Claim: MORTGAGE OF LEASE

5.2 Existing Conditions

Leonards Hill is a grass-fed beef cattle producing property in south central Victoria located on the southern boundary of Hepburn Shire approximately 100 km northwest of Melbourne and Tullamarine airport, and 40km northeast of Ballarat at 2040 on the Ballan--Daylesford Road, about 10 km south of Daylesford. The proposal site is across three of the six parcels: A,C and F as marked in blue in the previous table. The property has an area of 124.2ha overall.

The landscape is a plateau-like top and rolling side slopes of Leonards Hill, the dominant feature in the landscape. Historically the farm focused on potato and oats production and beef cattle grazing on introduced pastures supplemented with regular production of pasture hay and some fodder cropping. Cropping ceased in 2011 with the wind farm development resulting in a diversification of income for the property and a focus on beef cattle grazing by the landowner.

The elevated western lots include Lot 1 TP671; Allotment A1; Allotment A2; Allotment B2 and Allotment B4 (Parish of Wombat) is 70.7 ha. It encompasses Leonards Hill (height of 740m). The site comprises 5 paddocks, a dwelling, cottage and adjacent hay, machinery and shearing sheds located midway on its western boundary with the Ballan-Daylesford Road. It includes approximately one hectare leased to Hepburn Wind for its two wind turbines, substation and access road which were constructed in 2012. An additional separate small portion has been leased more recently to Telstra for a mobile tower.

This portion of the site is mainly cleared of native vegetation with some scattered trees throughout and more dense vegetation at the southern boundary. The eastern parcel, Allotment 13, Section 3B is separated from the subject parcel by a stand of established trees along the whole of the boundary. This lot borders with the Wombat State Forest and the eastern portion of the lot is densely vegetated.

The road reserve at the front boundary of the property features established vegetation of mature trees (some native) that serve to screen the subject site. Leonards Hill forms part of the Great Dividing Range. It lies within a generally cleared corridor which follows the Ballan–Daylesford Road. The Wombat State Forest is beyond this corridor to the east and west.

5.3 Agricultural Values

The broader farm site is of high agricultural value and this has greatly influenced the technology choice, location and footprint of the proposed solar farm.

The current owner acquired both lots in 1983 and recalls they had been used to graze sheep for wool production. Seed potatoes were later produced for sale to South Australia, though inability to attract labour for 'rogueing' (removing off-types so remainder of the crop could be inspected and certified) put an end to this activity. Cultivation and production of potato ceased in 2011.

From 2012 the farm has been used solely for cattle production and carries up to 300 head of Angus cows and calves, turning off steers, cull cows and heifers. With minimal disturbance and adequate ground cover these soils are stable and not prone to erosion.

In regards to the Agricultural Land in the Hepburn Shire, the following map outlines the agricultural quality (source, EnPlan 2007) and the highlighted red circle outlines the area of Leonards Hill. The hill apex and slopes of Leonards Hill which are the location for the proposed solar farm is rated Low Quality compared to the surrounding farmland which is rated Very High.

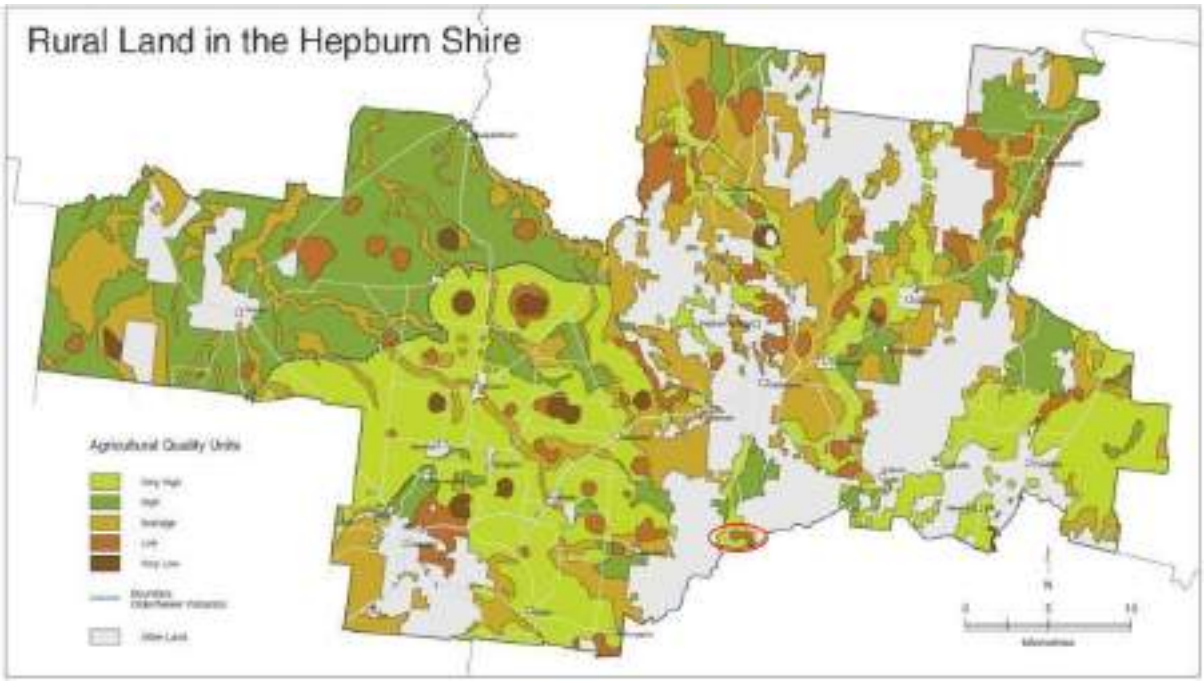


Figure 3 Agricultural land quality in the Hepburn Shire, expressed in a five class rating system, according to EnPlan (2007)

The available existing grid connection also makes it an ideal site for renewable energy.

5.4 Biodiversity

Prior to European settlement the entire district was most likely a mosaic of large forests dominated by stately manna gum and messmate together with blackwood and whitewood on the higher portions and side slopes and also swamp gum in the woodlands, shrub lands and heathlands on the lower and wetter valley floors.

These forests once supported an extensive timber industry with four now-closed mills operating in the district. The property adjoins extensive areas of public lands on its southern and eastern boundaries that remain forested and protected. The majority (80%) of the property has long been logged and cleared for farming and grazing. The solar farm construction process does not require the pulling down of any trees. Additionally, the solar farm will not cause any erosion issues.

The site is considered to have little or no native vegetation. The Review of Ecological Assessments (see Attachment 1) shows the site provides no significant habitat location for any species. Accordingly, it assessed that the development of the solar farm will have a low impact on the biodiversity of the bio-region.

Animals, birds and plants that currently use the site (such as common farmland birds, and insects) will continue to utilise the area during construction and operation of the solar farm.

Construction of the solar farm will disrupt the soil in select areas and the noise of construction may cause some birds to fly away from the site. The overall impact upon biodiversity is considered minimal and is comparable to any other construction activity or other human activities, such as vehicle use on roads, within the area.

5.5 Cultural heritage and heritage

The Leonards Hill location does not include areas of cultural heritage sensitivity. Consequently, a CHMP is not triggered by a high impact activity, including land used to generate electricity. This was confirmed in 2018 by Dan Cummings, Senior Heritage Officer, Aboriginal Victoria.

Hepburn Wind undertook an investigation in 2010 which further confirms this. According to the Terra Culture Report on Archaeological Monitoring for the Hepburn Wind farm Project, November 2010:

“No new Aboriginal cultural heritage sites or areas of potential were identified within the Activity Area. The completion of the monitoring program fulfils the cultural heritage requirements for the project, and construction works can proceed with no further cultural heritage constraints.”

5.6 Topography

Situated in the Central Victorian Uplands the property lies to the east of the Ballan-Daylesford road. The elongated flat hill top and side slopes of Leonards Hill dominate the property and the surrounding countryside and determine the topography of the immediate area. The site also features the twin wind turbines constructed by Hepburn Wind. The majority of the property exceeds 700m in elevation, rising to 746 at the trig station atop Leonards Hill. Only a small portion in the forested northeast corner of the property is below 680m. Both the western and northern side slopes of Leonards Hill rise increasingly steeply from the Ballan-Daylesford Road and Gambles Lane, respectively.

5.7 Geotechnical Conditions

The proposed solar farm site is located on the southern slopes of Leonards Hill, consisting of open farm land with undulating topography.

The general region is comprised of ‘newer volcanics’ and ‘basalt,’ and an eruption point at the apex of Leonards Hill indicates that it is an ancient volcano. The subsurface profile of the area generally comprises shallow surface residual silts, underlain by highly reactive silty clays which grade to variably weathered basalt rock with depth. Basalt floaters and closely packed boulders may be present above the basalt rock interface.

The Geological Survey of Victoria 1: 50,000 scale, Daylesford map sheet indicates the proposed site is underlain by ‘quaternary aged newer volcanics’ which is likely to comprise weathered

basalt overlain by associated residual clayey soils of varying depth. The subsurface profiles encountered in the completed boreholes (see attached Geotechnical Reports) are considered to be generally consistent with the geological map indications.

5.8 Existing Electrical infrastructure

The existing Hepburn Wind Farm project consists of two REpower MM82 2.05 MW wind turbines with a maximum power output capacity of 4.1MW with a dedicated transformer.

The existing electrical infrastructure is represented in the following diagram.

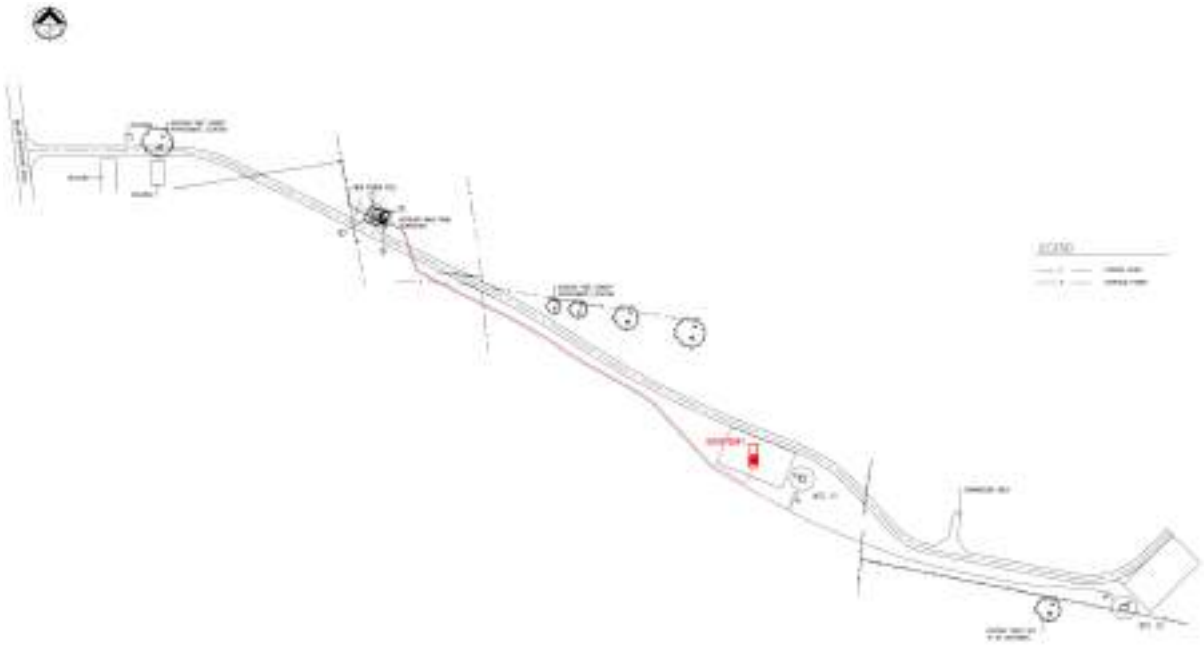


Figure 4 Existing site plan post REFCL upgrade

5.9 Road Network

At the entry to site, road works were required in 2010 to upgrade the existing crossover and driveway to provide sufficient width at the entry point for oversize vehicles to enter for the wind farm construction. Due to these existing upgrades the delivery of the solar farm components to site will be sufficiently catered for.

It is understood that before the development starts, a Traffic Management Plan must be prepared to the satisfaction of the Responsible Authority and VicRoads. When approved, the plan will be endorsed by the Responsible Authority.

5.10 Dwellings

The two closest houses to the existing wind farm, proposed solar farm and balance of plant infrastructure are owned by the landowner Ron Liversidge. The site will minimise visual amenity impacts through the design of the solar array. The PEG system being deployed has a low height (being 70-100cms across the site) and is set back 30 metres from neighbouring boundaries. We anticipate that three neighbours will be able to see it from the fence line of their property that borders the farm – with two of those properties having existing dwellings on them. The location of the majority of the array on the hill plateau and the slope from the neighbouring properties, makes it difficult to view from other areas. Existing vegetation boundaries will minimise visual impact to neighbours. The site infrastructure will be gathered with existing infrastructure at the front of the site, such as car parking and other balance of plant infrastructure.

The following Neighbourhood Map shows dwellings out to 3km – including rings showing 1km and 2km from solar farm. In addition, to better provide a sense of the visibility of the proposed solar farm, there is a series of photomontages that show that the solar farm will not be visible from most vantage points, unless you are right in the wind farm site or close to the boundary of a neighbours fence. Viewpoint 3 shows the view of the solar farm from the water tank at the edge of boundary with a neighbour. From the neighbours dwelling however, the solar will not be visible. The solar farm will not be visible from the roads that surround the wind farm or the closest village of Daylesford.

Image 5 Neighbourhood Map

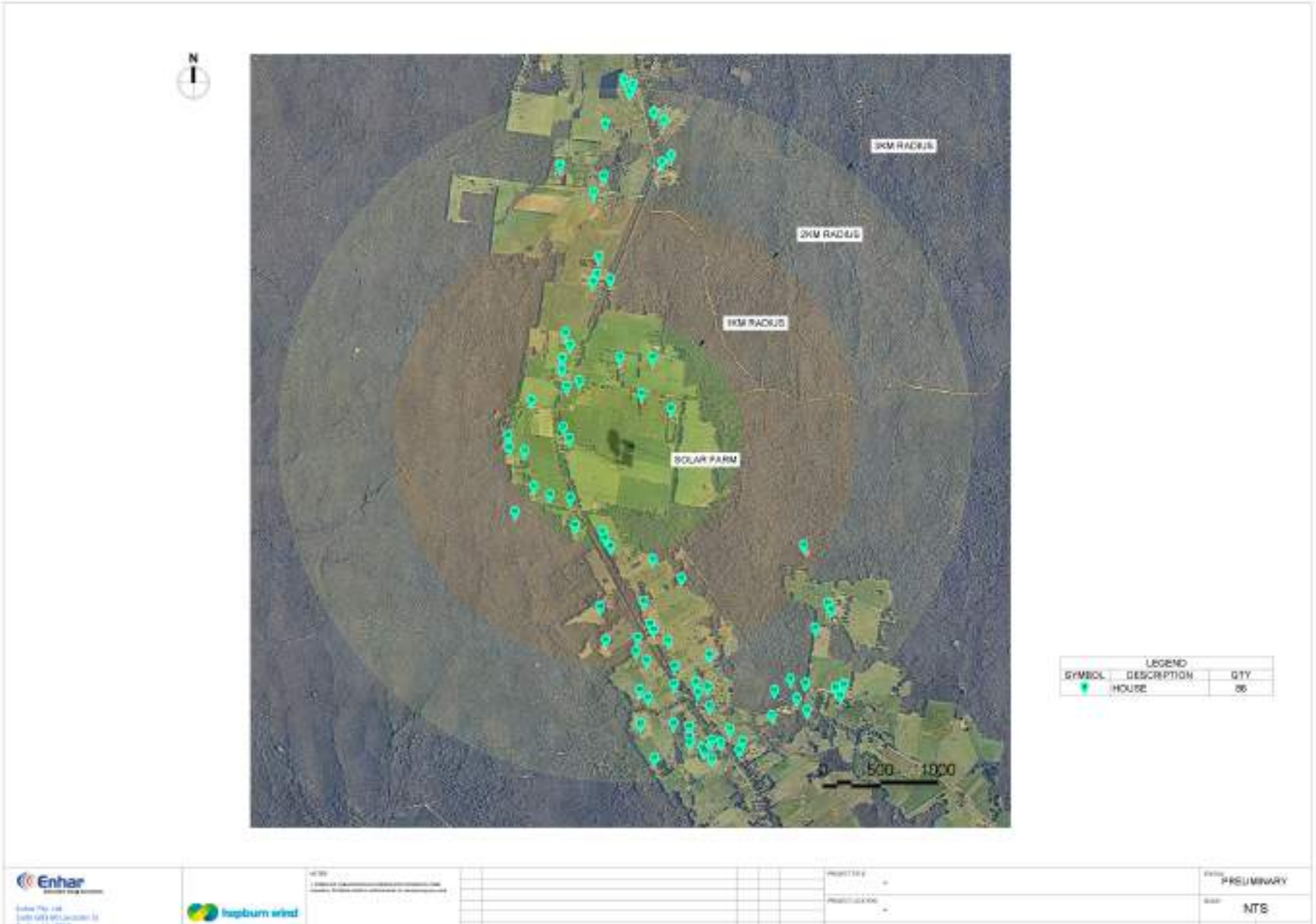


Image 6 Photomontage

Enhar

Hepburn Community Solar Farm – Visualisation Viewpoints

ENERGY FORMS

Enhar

hepburn wind

Image 7 Photomontage

Viewpoint 1 – Ballan Daylesford Road entrance

ENERGY FORMS

Image 8 Photomontage

Viewpoint 2 – Gambles Lane

VP-02: View from Gambles Lane
a) Photograph of existing view

VP-02: Photomontage
There is no visibility of the solar farm from this location

Location:
Elevation:
Distance to solar farm:
Camera:
Date & Time:
Height above elev:
Project No.:
Date:
Drawn By:
Produced by:
Enhar Pty Ltd
Produced for:

ENERGY FORMS

Image 9 Photomontage

Viewpoint 3 – From near water tank

ENERGY FORMS

Image 10 Photomontage

Viewpoint 4 – From gateway on Ballan Daylesford Road

There is no visibility of the solar farm from this location
The view from this location will be unchanged

ENERGY FORMS

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hepburn wind

Image 11 Photomontage

Viewpoint 5 – From Gale

ENERGY FORMS

Image 12 Photomontage

Viewpoint 7 – From Vincent St, Daylesford

The visibility of the solar farm from this location is anticipated to be negligible to zero, due to obstruction by terrain and trees
The existing view from this location will therefore be unaffected

ENERGY FORMS

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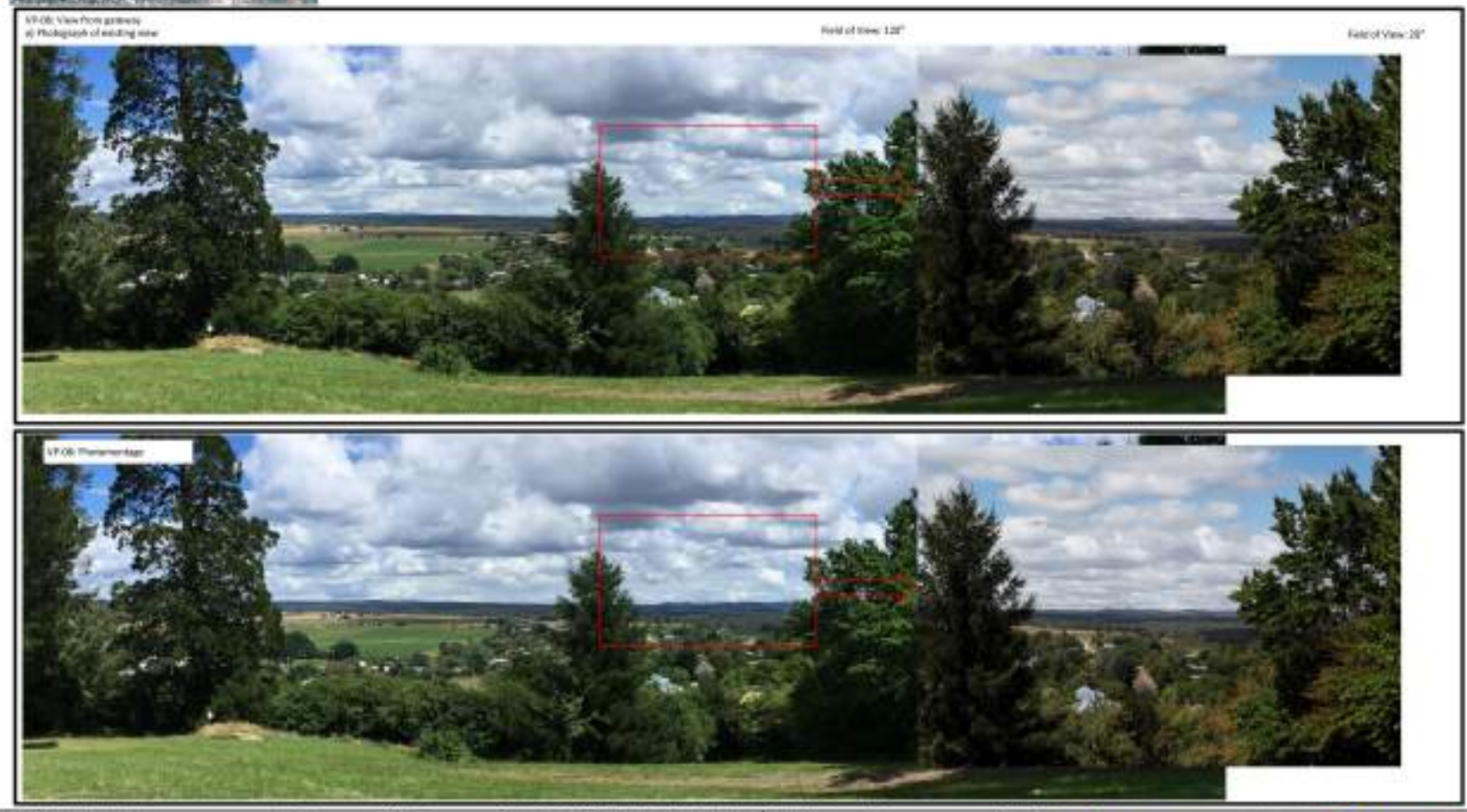
hepburn wind

Image 13 Photomontage

Viewpoint 8 – From Wombat Hill, Daylesford



ENERGY FORMS

5.11 LANDSCAPE VALUES

The site is situated at Leonards Hill, in the Shire of Hepburn, approximately 10 kilometres south of Daylesford on a private landholding. The existing turbines are approximately 250m apart and are located on high ground to the east of the Ballan Daylesford Road. The following information is extracted from the 2006 Landscape and Visual Assessment Study by John Cleary.

Leonards Hill sits forms part of the Great Dividing Range, separating the catchments that flow to the north from those that flow to the south. Leonards Hill is a high point (approximately 741m AHD) on the Great Dividing Range, a broad east-west ridge, and rises approximately 50m above the surrounding country. There are other high points to the east, including Coghlands Hill, Mt Wilson, and a high ridge in Wombat State Forest north of Blakeville, which are all higher than Leonards Hill. The landform falls away to the Moorabool River in the south and more steeply into Sailors Creek in the north. Daylesford and Wombat Hill (approximately 662m AHD) are visible in the north. The landform is generally rounded ridges and rolling slopes dissected by valleys that vary from broad and flat to deep and distinct (eg. Sailors Creek valley).

Leonards Hill is cleared and lies within a largely cleared corridor that follows the north-south alignment of Ballan Daylesford Road. Beyond this cleared corridor to the east and west lies Wombat State Forest with tall messmate forest. The cleared areas are used for agriculture and rural 'lifestyle' properties. The rural area is generally moderately populated with greater densities of residences occurring close to the roads and in the localities of Leonards Hill, Spargo Creek and Sailors Falls. The town of Daylesford is the main population centre.

There is a public hall to the north-west of Leonards Hill and a reserve at Sailors Falls 4km to the north of the site. The Ballan Daylesford Road runs north-south to the west of the site, connecting Daylesford with Ballan (and the freeway). There are a number of other minor link and local access roads in the area, including the Leonards Hill South Bullarto Road to the north, Barkstead Road to the west, and Liversidge Lane and Telegraph Road off Ballan Daylesford Road to the north.

The site lies within the Foothills Landscape Character Type (Leonard &Hammond 1983). This includes the higher land that flanks the Eastern Highlands. It includes the lower parts of the Great Dividing Range in the west of the State and has taller forests than the West Central Hills that stem from the better soils and higher rainfall of the area.

Eight character units were identified in 2006 that are still consistent today. These units are:

- Rural Hills Unit includes the Leonards Hill high point.
- Rural Slopes includes the remaining undulating, rural land. This unit contains scattered residences and patches of trees. Open views are available from many locations.
- Forested Hills Unit includes the high ridges and points with forest cover.
- Forested Slopes Unit includes the undulating land with forest cover.
- Forested Valleys Unit includes the distinct valleys with forest cover.
- Rural Living Unit includes the main clusters of houses.

- Lakes Unit includes lakes or large dams.
- Settlement Unit includes Daylesford.

The existing wind farm and proposed solar farm site lies within Rural Hills Unit and abuts the Rural Slopes Unit. The closest part of the Settlement Unit is at Daylesford, approximately 10 km to the north. This is represented in the following map. Surrounding the farm are patches of small farm lots and rural residential lots.

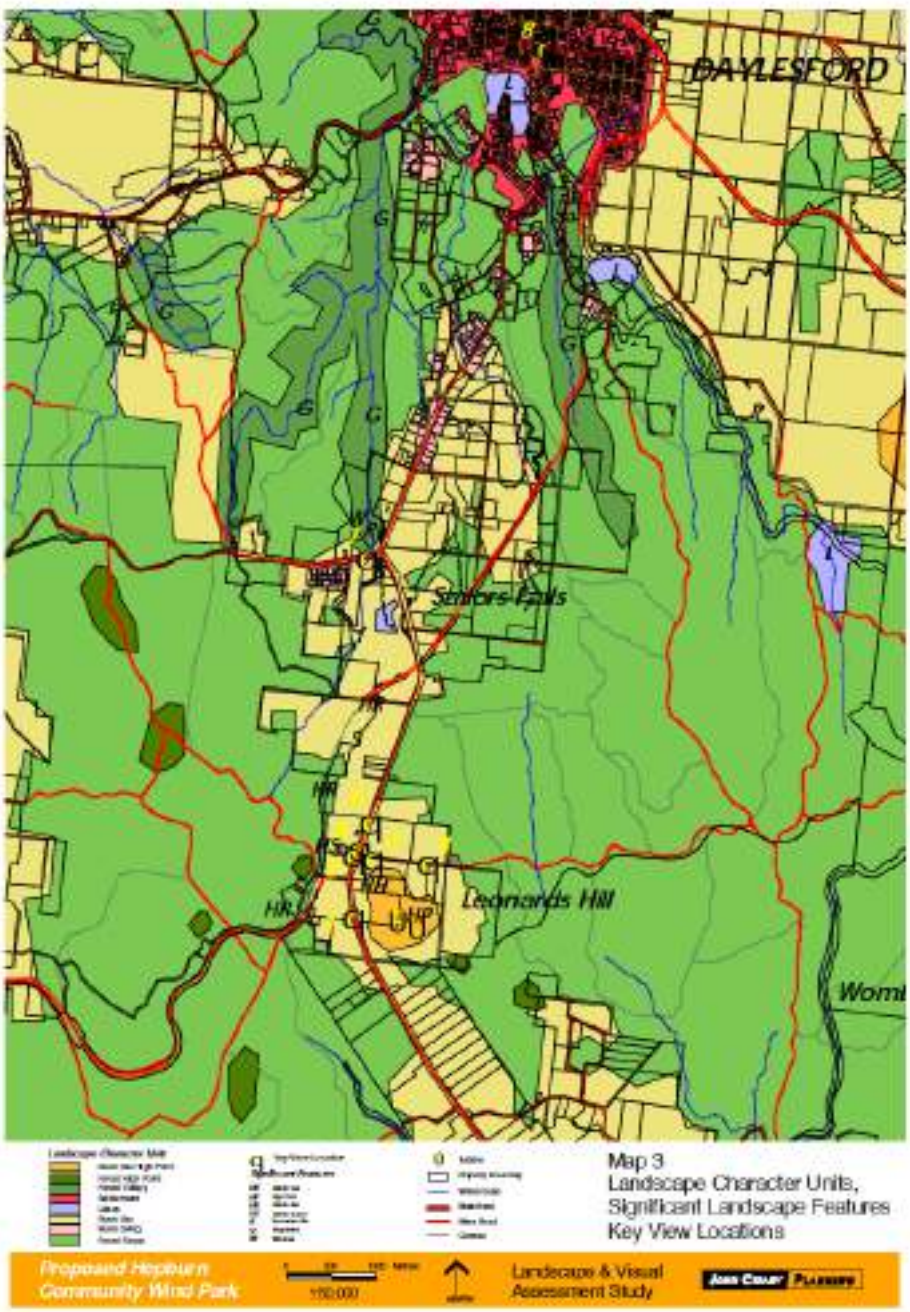


Figure 6 Significant landscape aspects

6 Planning Provisions

6.1 Definition

Clause 73.03 Land Use Terms

Renewable energy facility

Land used to generate energy using resources that can be rapidly replaced by an ongoing natural process. Renewable energy resources include the sun, wind, the ocean, water flows, organic matter and the earth's heat. It includes any building or other structure or thing used in or in connection with the generation of energy by a renewable resource. It does not include a renewable energy facility principally used to supply energy for an existing use of the land.

6.2 Zone

35.07 FARMING ZONE

Purpose

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To encourage the retention of productive agricultural land.*
- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
- *To encourage the retention of employment and population to support rural communities.*
- *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*
- *To provide for the use and development of land for the specific purposes identified in a schedule to this zone*

The land has an existing permit for use of the land for a renewable energy facility. A permit is required for buildings and works.

A Renewable Energy Facility is a Section 2 permit required use.

A permit is triggered for buildings and works associated with a Section 2 use.

The responsible authority must consider the follow relevant decision guidelines, as appropriate:

General issues

- *The Municipal Planning Strategy and the Planning Policy Framework.*

- *Any Regional Catchment Strategy and associated plan applying to the land.*
- *The capability of the land to accommodate the proposed use or development, including the disposal of*
- *effluent.*
- *How the use or development relates to sustainable land management.*
- *Whether the site is suitable for the use or development and whether the proposal is compatible with*
- *adjoining and nearby land uses.*
- *How the use and development makes use of existing infrastructure and services.*

Agricultural issues and the impacts from non-agricultural uses

- *Whether the use or development will support and enhance agricultural production.*
- *Whether the use or development will adversely affect soil quality or permanently remove land from*
- *agricultural production.*
- *The potential for the use or development to limit the operation and expansion of adjoining and nearby*
- *agricultural uses.*
- *The capacity of the site to sustain the agricultural use.*
- *The agricultural qualities of the land, such as soil quality, access to water and access to rural*
- *infrastructure.*
- *Any integrated land management plan prepared for the site.*

Environmental issues

- *The impact of the proposal on the natural physical features and resources of the area, particularly soil*
- *and water quality.*
- *The impact of the use or development on the flora and fauna on the site and its surrounds.*
- *The need to protect and enhance the biodiversity of the area, including the retention of vegetation and*
- *faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies,*
- *ridgelines, property boundaries and saline discharge and recharge area.*
- *The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways*
- *and native vegetation.*

Design and siting issues

- *The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses*
- *and to minimise the loss of productive agricultural land.*
- *The impact of the siting, design, height, bulk, colours and materials to be used, on the natural*
- *environment, major roads, vistas and water features and the measures to be undertaken to minimise*
- *any adverse impacts.*
- *The impact on the character and appearance of the area or features of architectural, historic or*
- *scientific significance or of natural scenic beauty or importance.*
- *The location and design of existing and proposed infrastructure including roads, gas, water, drainage,*
- *telecommunications and sewerage facilities.*
- *Whether the use and development will require traffic management measures.*

6.3 Overlays

The site is affected by the following overlays:

- Bushfire Management Overlay (BMO)
- Environmental Significance Overlay (ESO) - Environmental Significance Overlay – Schedule 1 (ESO1)
- Designated Bushfire Prone Area (BPA)

The Bushfire Prone Area (BPA) maps bushfire hazard, including grassland, for Victoria's building system. It includes all levels of bushfire hazard and covers most of Victoria. The other permit triggers and considerations are outlined in the following sections.

6.3.1 Bushfire Management Overlay

Purpose

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

The subject land is affected by the Bushfire Management Overlay. Clause 44.06-2 of the BMO states that a permit is required for buildings and works associated with particular uses. These uses do not include a renewable energy facility. Whilst a permit is not triggered, consideration of

bushfire risk is important for any renewable energy facility and has been considered in Attachment 6 the Hepburn Solar Farm Bushfire Risk Assessment Report & Mitigation Plan.

6.3.2 Environmental Significance Overlay

42.01 ENVIRONMENTAL SIGNIFICANCE OVERLAY

Purpose

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify areas where the development of land maybe affected by environmental constraints.*
- *To ensure that development is compatible with identified environmental values.*

SCHEDULE 1 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY

PROCLAIMED CATCHMENT PROTECTION

Statement of environmental significance

Hepburn Shire is situated in the Central Highlands at the source of a number of catchments linked to Port Phillip Bay or the Murray River. Protection of the quality of this water has significant local and regional implications, especially where these catchments provide domestic water supply.

The site and broader area is within the ESO Schedule 1 which relates to proclaimed catchment protection. A permit is triggered for buildings and works. The intent of the provisions is to protect the water quality and domestic water supply.

Vegetation

A permit is not required to remove, destroy, or lop vegetation, including dead vegetation unless the removal, destruction or lopping involves:

Any vegetation on site area greater than 1 ha. Vegetation within 30 metres of a waterway.

Application Requirement

An application for a permit must be accompanied by the following information, where appropriate:

A scaled site context plan showing the subject site and surrounding land including location of all water ways, drainage lines, water bodies, water supply channels or springs.

The location and use of existing and proposed buildings and works, including proposed or existing waste water disposal areas and vehicle access.

Details of degree and direction of slope, soil type, vegetation and drainage systems.

A geotechnical report prepared by a suitably qualified persons which demonstrates that the land is capable of absorbing effluent generated on the lot and the likely impact of any on-site wastewater treatment system on surface and ground water resource and how such impact is to be mitigated.

Any environmental management plan to be implemented as part of the proposal.

6.4 Particular Provisions

6.4.1 Clause 52.06 Car Parking

A permit is required to reduce or waive the car parking requirement before a new use commences. Table 1 outlines the car parking requirements associated with various uses. A renewable energy facility is not in Table 1. Clause 52.06-6 states that *"Where a use of land is not specified in Table 1 or where a car parking requirement is not specified for the use in another provision of the planning scheme or in a schedule to the Parking Overlay, before a new use commences or the floor area or site area of an existing use is increased, car parking spaces must be provided to the satisfaction of the responsible authority. "*

6.5 Clause 53.13 (Renewable Energy Facility)

The responsible authority must consider the following collective decisions guidelines, as appropriate:

Clause 53.13 seeks to "facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area."

The following matters outlined in the decision guidelines to Clause 53.13 'Renewable energy facilities' must be considered by a responsible authority before deciding on an application.

The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.

- *whether the impact is acceptable of can be managed in accordance with relevant Australian and New Zealand standards or other regulatory requirements.*
- *if the assessment was undertaken by a suitably qualified person*
- *the spatial extent, length and duration of the impact and whether it is for a limited or extended period*
- *whether the impact can be mitigated via an appropriate built form, landscaping or other management response.*

The impact of the proposal on significant views including visual corridors and sightlines

- *the amount of change proposed by works including earthworks, and the sensitivity of the landscape features to that change*
- *the visibility of the solar energy facility from vantage points accessible to the public and the ability to screen areas of development from view*

- *the locations and distances from which a solar energy facility can be viewed from a sensitive land use*
- *the significance of the landscape as described in the planning scheme including in an overlay, a relevant strategic study or by landscape features referenced in the planning scheme*
- *landscape values associated with nearby land such as specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres.*

The impact of the proposal on strategically important agricultural land, particularly within a declared irrigation district

- *the impact on (including numbers of) irrigators downstream of the proposed site that depend on the ongoing operation of irrigation assets traversing the site*
- *the usage level of water compared to the actual capacity of the irrigation infrastructure servicing the site, based on rural water corporation mapping*
- *whether or not the irrigation infrastructure servicing the site has benefitted from Commonwealth or state government investment in infrastructure modernisation*
- *whether the proposed site is connected to the modernised irrigation infrastructure and is integral to the rural water corporation's current and/or future planning for the viability of the irrigation district*
- *whether or not the overall change in land use at the site aligns with a rural water corporation's asset management planning strategy for the viability of the irrigation district*
- *whether the change in land use closes off any future opportunities for a rural water corporation to make irrigation footprint adjustments identified under a plan or strategy.*

The impact of the proposal on the natural environment and natural systems

- *how any onsite earthworks, buildings or other works will alter the natural processes occurring on land*
- *whether the removal, lopping or destroying of any vegetation can be avoided or minimised through alternative design arrangements*
- *proximity to natural and man-made water courses and the establishment of appropriate setbacks from these to maintain habitat and natural processes*
- *impacts on landscape values associated with nearby public land described in a schedule to the National Parks Act 1975 or with Ramsar wetlands*
- *how bushfire and flood management measures will be dealt with to the satisfaction of the relevant referral authorities.*

The impact of a proposal on the local road network.

- *whether access to and from the site meets requirements established by the relevant road management authority*
- *the impact of traffic movements to and from the site with the road network operating normally*
- *the impact of traffic movements causing wear and tear on the road network.*

6.5.1 Clause 52.17 Native Vegetation

No native vegetation will be disturbed or removed in the construction of the proposed solar farm.

6.6 General Provisions

The responsible authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines outlined under VPP Clause 65.01 Approval of an application or plan. This includes:

- the matters set out in section 60 of the P&E Act
- the Municipal Planning Strategy and the Planning Policy Framework
- the purpose of the zone, overlay or other provision and any matter required to be considered in the zone, overlay or other provision
- the orderly planning of the area
- the effect on the amenity of the area
- the proximity of the land to any public land
- factors likely to cause or contribute to land degradation or salinity or to reduce water quality
- whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site
- the extent and character of native vegetation and the likelihood of its destruction; and whether native vegetation is to be or can be protected, planted or allowed to regenerate
- the degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land to minimise any such hazard
- the adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

6.7 Planning Policy Framework

Planning policy seeks to protect rural landscapes and identified values alongside the protection of farmland. Retention of vegetation and protection of water quality is also an important consideration. This is balanced with the need to allow a diversified economy and job creation for regional communities. Renewable energy facilities are supported when designed and sited appropriately with respect to the values of the farming zone and surrounding landscape. The development of renewable energy generation is further supported by the *Climate Change Act 2017* by contributing to emissions reduction targets.

Local planning policies also seek to protect agricultural land, particularly that of identified high agricultural value. The sustainable management of environmental resources such as soil and water are supported.

6.7.1 Clause 12 Environmental and Landscape Values

According to the Victorian Department of Environment, Land, Water and Planning (DELWP) NatureKit Map (DELWP 2018a), the study area occurs within the Central Victorian Uplands bioregion. It is located within the jurisdiction of the North Central Catchment Management Authority (CMA) and the Hepburn Shire Council municipality.

Biodiversity

Clause 12.01-S relates to biodiversity, which has the following objective: "To assist the protection and conservation of Victoria's biodiversity."

The strategies of the Clause are as follows:

- *Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.*
- *Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.*
- *Ensure that decision-making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*
  - *Cumulative impacts.*
  - *Fragmentation of habitat.*
  - *The spread of pest plants, animals and pathogens into natural ecosystems.*
  - *Avoid impacts of land use and development on important areas of biodiversity.*
  - *Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).*
  - *Assist in the identification, protection and management of important areas of biodiversity.*
  - *Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.*

NATIVE VEGETATION MANAGEMENT

Clause 12.01-2S relates to Native Vegetation Management. The objective of this Clause is "To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation."

LANDSCAPES AND LAND USE

12.05-2S Landscapes

Objective

- *To protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments.*

12.05-2R Landscapes - Central Highlands

Strategy

- *Provide clear urban boundaries and maintain distinctive breaks and open rural landscapes between settlements.*

13.07-1S Land use compatibility

Objective

- *To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.*

6.7.2 Clause 13 Environmental Risks and Amenity

Clause 13 of the Hepburn Planning Scheme addresses environmental risks and amenity. The Clause states:

- *Planning should strengthen the resilience and safety of communities by adopting a best practice environmental management and risk management approach.*
- *Planning should aim to avoid or minimise natural and human-made environmental hazards, environmental degradation and amenity conflicts.*
- *Planning should identify and manage the potential for the environment and environmental changes to impact on the economic, environmental or social wellbeing of society.*
- *Planning should ensure development and risk mitigation does not detrimentally interfere with important natural processes.*
- *Planning should prepare for and respond to the impacts of climate change.*

Clause 13.01-1S has the objective to minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.

The relevant strategies include:

- *Consider the risks associated with climate change in planning and management decision making processes.*
- *Identify at risk areas using the best available data and climate change science.*
- *Integrate strategic land use planning with emergency management decision making.*
- *Direct population growth and development to low risk locations.*
- *Develop adaptation response strategies for existing settlements in risk areas to accommodate change over time.*
- *Ensure planning controls allow for risk mitigation or risk adaptation strategies to be implemented.*
- *Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.*

Clause 13.02-1S relates to Bushfire Planning as the land is impacted by the Bushfire Management Overlay. Bushfire risk is a consideration for any solar project. The objective of the Clause is "to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life".

Clause 13.07-1S relates to the safeguarding of community amenity while facilitating appropriate uses with potential off-site amenity effects. Strategies to achieve this include ensuring that the compatibility of a use or development as appropriate to the land use functions and character of the area by:

- *Directing land uses to appropriate locations.*
- *Using a range of building design, urban design, operational and land use separation measures.*

6.7.3 Clause 14 Agriculture

14.01-1S Protection of agricultural land

Objective

- *To protect the state's agricultural base by preserving productive farmland.*

Clause 14.01-1S seeks to protect the state's agricultural bases by preserving productive farmland. The relevant strategies to achieve this include:

- *Identify areas of productive agricultural land, including land for primary production and intensive agriculture.*
- *Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.*
- *Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.*
- *Protect productive farmland that is of strategic significance in the local or regional context. Protect productive agricultural land from unplanned loss due to permanent changes in land use.*

In considering a proposal to use, subdivide or develop agricultural land, consider the:

- *Desirability and impacts of removing the land from primary production, given its agricultural productivity.*
- *Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.*
- *Compatibility between the proposed or likely development and the existing use of the surrounding land.*
- *The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.*

- *Land capability.*

14.01-2S Sustainable agricultural land use

Objective

- *To encourage sustainable agricultural land use.*

Clause 14.01-2S addresses sustainable agricultural use and has the following objective:

• To encourage sustainable agricultural land use.

The strategies of this Clause are:

- *Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources.*
- *Support the development of innovative and sustainable approaches to agricultural and associated rural land use practices.*
- *Support adaptation of the agricultural sector to respond to the potential risks arising from climate change.*
- *Encourage diversification and value-adding of agriculture through effective agricultural production and processing, rural industry and farm-related retailing.*
- *Assist genuine farming enterprises to embrace opportunities and adjust flexibly to market changes.*
- *Support agricultural investment through the protection and enhancement of appropriate infrastructure.*
- *Facilitate ongoing productivity and investment in high value agriculture.*
- *Facilitate the establishment and expansion of cattle feedlots, pig farms, poultry farms and other intensive animal industries in a manner consistent with orderly and proper planning and protection of the environment.*
- *Ensure that the use and development of land for animal keeping or training is appropriately located and does not detrimentally impact the environment, the operation of surrounding land uses and the amenity of the surrounding area.*

The use of the PEG technology will result in the area below the installation to be permanently shade which will decrease plant growth under the array. This will also reduce daytime temperatures which will retain the soil moisture and not detrimentally impact the soil quality. The overall impact has been considered by the co-operative and the landowner who considers the small footprint of the installation, the use of the least arable land on the hill and the lack of earthworks and ground disturbance to be a significantly better long term outcome for the farmland than other technology options.

WATER

14.02-1S Catchment planning and management

Objective

- *To assist the protection and restoration of catchments, water bodies, groundwater, and the marine environment.*

The southern slopes of Leonards Hill area drain to the Werribee River basin, with northern slopes draining to the Loddon River of the Murray River basin. The majority of the farm is within the jurisdiction of the North Central Catchment Management Authority (NCCMA); a minor area (outside the solar design proposal areas) falls within the Port Phillip and Westernport Catchment Management Authority (PPWCMA) region. The Rural Water Corporation is Goulburn-Murray Water and Urban Water Corporation is Central Highlands Water.

WATER QUALITY

14.02-2S Water quality

Objective

- *To protect water quality.*

The small footprint of the solar array of around 7 hectare (18 acres) that is sited on the existing topography will not impact the storm water runoff on site. The rows of solar panels may change the water pattern slightly. No water will be extracted for construction purposed, and there will not be ongoing impacts on site.

6.7.4 CLAUSE 19 ECONOMY

17.01-1S Diversified economy

Objective

- *To strengthen and diversify the economy.*

Strategies

- *Facilitate growth in a range of employment sectors, including health, education, retail, tourism, knowledge industries and professional and technical services based on the emerging and existing strengths of each region.*
- *Improve access to jobs closer to where people live.*
- *Support rural economies to grow and diversify.*

6.7.5 CLAUSE 19 INFRASTRUCTURE

ENERGY

Clause 19.01-1S relates to energy supply and includes the objective:

- *To facilitate appropriate development of energy supply infrastructure.*

Strategies of the Clause are as follows:

- *Support the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to industry and the community.*
- *Support transition to a low-carbon economy with renewable energy and greenhouse emission reductions including geothermal, clean coal processing and carbon capture and storage.*
- *Facilitate local energy generation to help diversify the local economy and improve sustainability outcomes.*

The proposed solar farm development is an appropriate development in the local context.

In 2018, Hepburn Wind and Hepburn Shire Council signed a Memorandum of Understanding in order to collaborate formally and:

- Declare an ambition to be the first 100% renewable Shire in Australia
- Aim to be a lighthouse community for community-owned energy facilities, demonstrating the economic and environmental benefits of locally owned and generated renewables
- Set a target of zero-net energy by 2025 for the Hepburn Shire locality, to be monitored and evaluated annually

The 2019 whole of community Z-NET Community Transition Plan, which was also endorsed by Council highlights the importance of developing more local renewable energy facilities across the shire in order to reach the ambitious targets of zero-net energy by 2025 and zero-net emissions by 2030.

RENEWABLE ENERGY

Clause 19.01-2S relates to Renewable Energy with the objective;

To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.

The strategies of this Clause are:

- *Facilitate renewable energy development in appropriate locations.*

  Protect energy infrastructure against competing and incompatible uses.

  Develop appropriate infrastructure to meet community demand for energy services.

- *Set aside suitable land for future energy infrastructure.*
- *Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.*
- *Recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year*.

6.8 Clause 21.02 Key Influences

Clause 21.02 outlines the key influences for the future of the Shire. In relation to ***Rural land use and agriculture (21.08) it states:***

Potential exists to provide for diversification in agricultural production as the value of traditional agriculture declines. There are also concerns regarding the limited potential to earn enough income to sustain traditional agricultural farm without using off-farm income.

6.8.1 Clause 21.08 – Rural land use and agriculture

This clause goes on to outline the various objectives and strategies for rural land. The identified key issues of most relevance to this application:

Rural land provides an attractive landscape and environmental setting in many parts of the Shire.

Protection of high quality agricultural land from encroachment of urban land uses.

Maintenance of rural land holdings with a potential for productive agricultural uses, including new and emerging rural enterprises.

Most relevant strategies to achieve these objectives include:

Maintain areas of high and very high agricultural land quality for agricultural production.

Promote the potential for new and innovative rural enterprises, including appropriate local value-adding activities

Protect clusters of agricultural activity and other rural related enterprises. Protect resource and environmental values that support rural enterprise.

Encourage innovative forms of agricultural diversification, focussed on high value activities in areas with existing or planned capacity.

6.8.2 Clause 22.01 Water and Catchment Protection

This Clause seeks to ensure the sustainable use of natural resources including soil and water in water catchment areas. Where a permit is required for use and development, it is policy to:

Require all proposals for use and development to incorporate measures to protect and enhance the quality of natural resources and environmental systems in proclaimed water catchments.

In relation to biodiversity and habitat the clauses states that where a permit is required for uses and development, it is policy to:

Ensure proposals minimise the removal, destruction and lopping of native vegetation and the inclusion of a schedule of replanting local indigenous species at a ratio to be determined by the responsible authority.

6.8.3 Clause 22.04 Rural Land

This Clause builds on Clause 21.08 relating to rural land. Agricultural land in Hepburn is under pressure for conversion to non-soil-based use and development. Land is a resource that needs to be sustainably managed. Land that is capable of producing a range of agricultural outputs needs to be protected. The responsible authority supports the maintenance and development of the agricultural industry and seeks to minimise the use of high and very high quality productive agricultural land for non-soil-based uses and developments.

In the exercising of discretion the clause states:

"Where a permit is required for uses and development in indicative areas of high and very high quality agricultural land identified in the Environment Framework Plan in the MSS, it is policy to:

Ensure that agricultural land will be protected as an economic and environmentally valuable resource. Conversion of land to non-soil based use will be strongly discouraged unless there are no alternative sites for the proposed use and overwhelming public benefit is demonstrated.

Ensure that intensive agricultural activities will be located and managed having regard to soil and water quality, the adequacy of infrastructure services and the location of sensitive uses.

The relevant Decision Guidelines include that is policy that the responsible authority consider as appropriate:

The impact of any new land use and development against the potential for continued agricultural activity and production on the subject land or adjoining or adjacent surrounding land.

6.9 Legislation

The following legislation affects the proposed solar farm development and has been considered in this application,

6.9.1 Planning and Environment Act 1987 (Vic)

The purpose of the Planning and Environment Act is to establish a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians.

The Planning and Environment Act 1987 objectives are:

a. to provide for the fair, orderly, economic and sustainable use, and development of land

b. to provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity

c. to secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria

d. to conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value

e. to protect public utilities and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community

f. to facilitate development in accordance with the objectives set out in paragraphs (a), (b), (c), (d) and (e)

g. to balance the present and future interests of all Victorians.

6.9.2 Environment Protection Act 2018 (Vic)

The Environment Protection Act establishes the legislative framework for protecting the environment in Victoria. It regulates certain activities with the potential to impact on the environment and prohibits the occupier of 'scheduled premises' from doing any act or thing (installing any plant, equipment or process) that is likely to cause the discharge or emission of waste to the environment unless authorized to do so.

Under the Environment Protection (Scheduled Premises and Exemptions) Regulations 2017, 'a quarry' are scheduled premises. Accordingly, a works approval would be required for development of the quarry. The works approval application shall be assessed by EPA Victoria.

A number of State Environment Protection Policies (SEPPs) have been prepared under this Act, which typically set standards, guidelines and environmental quality objectives and indicators to protect beneficial uses of the environment, including noise surface and groundwater, land contamination and air quality. SEPPs express in law the community's expectations, needs and priorities for using and protecting the environment.

The design and delivery of the project must otherwise comply with appropriate regulations, SEPPs and guidelines under the Environment Protection Act where they apply to works and other project activities. These compliance requirements, as well as the need to meet the requirements of the works approval from EPA Victoria are outlined in Chapter X- Environmental Management Framework.

The EPA and the legislation it administers is currently undergoing a transformation:

The EP Act 1970 is in force and contains all currently operational substantive provisions and some currently operational procedural provisions.

The Environmental Protection Act 2017 (2017 Act) is in force and contains currently operational procedural and administrative provisions. The 2017 Act establishes the EPA and sets out its objectives.

The Environment Protection (Amendment) Act 2018 (2018 Act) received assent on 28 August 2018 but most provisions will commence on the earlier of a day to be declared or 1 December 2020. The Victorian Government's intention is that the Act will commence on 1 July 2020. The

2018 Act introduces substantive provisions into the 2017 Act and repeals the EP Act 2017. Many aspects of the 2018 Act require regulations to activate the substantive provisions.

The 2017 Act as it will be amended by the 2018 Act (New EP Act) takes a fundamentally different approach to environmental regulation from the approach taken in the former Act.

The focus moves from protecting the environment per se, to preventing pollution and waste. At the highest level, prescriptive offences will be replaced by duties, most prominently the general environmental duty.

The general environmental duty applies to any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste, and requires such a person to minimise those risks, so far as reasonably practicable (New EP Act, s 25(1)). 'Reasonably practicable" places a limit on what needs to be done, balancing risk and cost. A failure to comply with the general environmental duty is an indictable offence (proof beyond reasonable doubt- a higher standard), and civil penalties (proof on the balance of probabilities – a lower standard) are also available for breach.

This Project, if approved will be developed under the provisions of the new Act.

6.9.3 Aboriginal Heritage Amendment Act 2016

In Victoria, Aboriginal cultural heritage is protected by the Aboriginal Heritage Amendment Act 2016 (Heritage Act) and the Aboriginal Heritage Regulations 2007 (Heritage Regulations). Under this legislation Aboriginal cultural heritage is protected by requiring planning permit applicants to prepare Cultural Heritage Management Plans (CHMP) if and when their proposed actions pose a risk to Aboriginal cultural heritage. Under the Heritage Act actions are considered to pose a risk to Aboriginal cultural heritage, and therefore require the preparation of a CHMP, when they are both a "high impact activity" and occur in an "area of cultural heritage sensitivity".

Approval of a Cultural Heritage Management Plan (CHMP) is required pursuant to the Aboriginal Heritage Act 2006 and its associated regulations. Pursuant to regulation 43(1)(a) and (b) of the AH Regulations, construction of a wind energy facility is a high impact and as such a mandatory CHMP is required.

The Leonards Hill location does not include areas of cultural heritage sensitivity. Consequently, a CHMP is not triggered by a high impact activity, including land used to generate electricity. This was confirmed in 2018 by Dan Cummings, Senior Heritage Officer, Aboriginal Victoria. Hepburn Wind is committed to listening to our Aboriginal elders in the region and have pathways to do that through the Reconciliation Committee formed by Council.

6.9.4 Environment Protection and Biodiversity Conservation Act, 2000

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) came into force on 16 July 2000. The EPBC Act protects matters of National Environmental Significance. The objectives of the EPBC Act are as follows:

- *To provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;*
- *To promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;*
- *To promote the conservation of biodiversity;*
- *To provide for the protection and conservation of heritage;*
- *To promote a cooperative approach to the protection and management of the environment involving governments, the community, landholders and Indigenous peoples;*
- *To assist in the cooperative implementation of Australia's international environmental responsibilities;*
- *To recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
- *To promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.*

The proposal has been referred under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and a decision made that it is or is not a 'controlled action'.

6.9.5 Flora and Fauna Guarantee Act 1988 (Vic)

Victoria's Flora and Fauna Guarantee Act 1988 provides a framework for biodiversity conservation in Victoria. The Act provides for the listing of threatened species, communities of flora and fauna and potentially threatening processes. A number of non-threatened flora species are also protected under the Act.

A permit is required to remove species protected under the Act from public land and may also be required to remove protected species from private land in certain circumstances.

6.9.6 Climate Change Act 2017 (Vic)

The Climate Change Act 2017 commenced operation on 1 November 2017 and seeks, among other purposes, to set a long-term greenhouse gas emissions reduction target and to provide the setting for five-yearly interim reduction targets to reach the long-term target. Section 6 states that for the purposes of the Act, "the long term emissions reduction target for the State is an amount of net zero greenhouse gas emissions by the year 2050".

Section 20 states:

The Government of Victoria will endeavour to ensure that any decision made by the Government and any policy, program or process developed or implemented by the Government appropriately takes account of climate change if it is relevant by having regard to the policy objectives and the guiding principles.

6.10 Other Policies and Guidelines

These guidelines have been examined and considered in the design of the proposed solar farm and this application.

6.10.1 Solar Energy Facilities – Design and Development Guidelines – DELWP

The Victorian Government has developed the Solar Energy Facilities - Design and Development Guideline (August 2019) aim to help outline the assessment and development process for large-scale solar energy facilities in Victoria.

This guideline provides:

- *information for solar farm developers (proponents), the community, regulators and decision-makers (responsible authorities) relating to the Planning and Environment Act 1987 (the P&E Act) and the Victoria Planning Provisions (VPPs)*
- *information and direction about the policy, legislative and statutory planning requirements*
- *relating to the siting and design of solar energy facilities*
- *an overview of best-practice advice relating to each stage of the site selection, design, construction, operation and decommissioning continuum.*

The document outlines what solar facilities are, how to identify suitable locations, best practice for proponents, and information and considerations for applying for a planning permit.

The Guidelines require a site analysis and design response to be prepared. There are detailed matters that are required as part of the design response as follows:

- *detailed plans and elevations of the proposed development including the layout and height of the facility and associated building and works, and their materials, reflectivity, colour, lighting and landscaping*
- *detailed plans and elevations of the proposed transmission infrastructure and electricity utility works required to connect the facility to the electricity network, access roads and parking areas*
- *accurate visual simulations illustrating the development in the context of the surrounding*
- *area and from key public viewpoints*
- *the extent and assessment of any vegetation removal*
- *a rehabilitation plan for the site.*

The design response should also include one or more written reports and assessments including:

- *a description of the proposal including the types of process to be utilised, materials to be stored and the treatment of waste*

- *an explanation of how the proposed design derives from and responds to the site analysis including cumulative impacts with any other existing and proposed renewable energy facilities in the surrounding area*
- *an explanation of agricultural values and production including irrigation infrastructure impacts and whether any land is productive farmland of strategic significance*
- *whether a works approval or licence is required from EPA Victoria or another authority administering the regulatory requirements of the Dangerous Goods Act 1985*
- *a description of how the proposal responds to any significant landscape features for the area identified in the planning scheme.*
- *An assessment of:*
  - *the potential amenity impacts (such as noise; glint or glare; light spill; emissions to air, land or water; vibration; smell and electromagnetic interference): an assessment of potential noise impacts should have regard to EPA Victoria's Noise from industry in regional Victoria guidelines*
  - *the effects of traffic to be generated on roads*
  - *the visual impact of the proposal on the surrounding landscape*
  - *the visual impact on abutting land that is described in a schedule to the National Parks Act 1975 and Ramsar wetlands and coastal areas*
  - *the impact of the proposal on any species (including birds and bats) listed under the Flora and Fauna Guarantee Act 1988 or the Environment Protection and Biodiversity Conservation Act 1999*
  - *the impacts on Aboriginal or non-Aboriginal cultural heritage*

They also require the assessment of:

- *The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.*
- *The impact on significant views including visual corridors and sightlines*
- *The impact of the proposal on strategically important agricultural land, particularly within a declared irrigation district*
- *The impact of the proposal on the natural environment and natural systems*
- *The impact of a proposed on the local road network.*

6.10.2 CFA -Planning for emergencies in facilities.

These Guidelines have been prepared by the CFA in relation to renewable energy facilities.

In the planning context, CFA's involvement may be via referral from a municipal council (responsible authority) for CFA's consideration and comment. If this occurs, this document is a guide as to the conditions CFA is likely to include in response to council's referral. The conditions prescribed in this guideline should be incorporated by the applicant in the planning permit application.

The CFA requires a solar energy facility to have an emergency management plan, incorporating a fire management plan, consistent with the requirements of AS 3745-2010 Planning for emergencies in facilities.

The construction and commissioning phases of facility development pose challenges for effective risk management. During construction of any renewable energy installation, site occupiers must:

- *Develop an Emergency Management Plan for the construction and commissioning phases*
- *Ensure that appropriate permits have been issued for work during the Fire Danger Period, and that any conditions on permits are adhered to*
- *Adhere to restrictions on Total Fire Ban or days of high fire danger (refer to www.cfa.vic.gov.au)*
- *Carry fire extinguishers or firefighting equipment in vehicles*
- *Carry emergency communications equipment*
- *Ensure vehicles keep to tracks whenever possible*
- *Restrict smoking to prescribed areas, and provide suitable ash and butt disposal facilities.*

7 Planning Assessment

This section outlines how the proposal meets or responds to the various provisions and guidelines. In particular, it addresses the requirements and considerations of the Solar Guidelines as well as the relevant provisions of the Hepburn Planning Scheme. Matters are addressed thematically.

7.1 Site Analysis

The key strengths of the proposed site are:

- Proximity to the electricity grid and existing grid connections
- Land use is existing, the solar array is complimentary in nature to the existing wind farm
- The development has no impact on the surrounding use of the land, being mainly agricultural but also having scattered dwellings. The development is passive and contained to the site.
- The site has been chosen based on lowest agricultural value to the property.
- Access is existing and suitable for purpose for development on ongoing activities
- Access to the electricity grid is suitable for purpose.

7.2 Design Response

'Sensitive Design Principles' have been applied for the project. The technology selection of deploying the PEG system is considered the best solution for the Leonards Hill site due to the:

- ability to use the low quality agricultural area on site
- small footprint around 1/2 of other technologies
- low visibility due to the low height of the installation
- no earthworks required and no impact to hydrology

With sensitive design principals, solar farms can offer a good opportunity to 'rest' agricultural land. Providing the soil with time to recover nutrients, improve permeability and increase its carbon store.

The proposed solar farm on the agricultural land will implement a range of techniques to reduce soil degradation by:

- avoiding disturbances to topsoil from grading or excavation
- maintaining soil permeability
- avoiding fertilisers or herbicides
- avoid bringing 'alien' soil to the site
- monitoring activities across the year and checking soil nutrients.

7.3 Siting Facility Components

The solar array area is located over 30m away from boundaries as recommended by the guidelines. Homes are set back over 300m, with no visibility from any dwellings. 2m separation between each pod. Grouping car parking at the front of the site and other balance of plant infrastructure together .

7.4 Protecting environmental values

7.4.1 Flora and Fauna

The site covers approximately five hectares and is surrounded by agricultural land. The Wombat State Forest is 600 metres to the east and 300 metres to the south, and the Ballan Daylesford Road is to the west of the study area.

According to the Victorian Department of Environment, Land, Water and Planning (DELWP) Nature Kit Map (DELWP 2018a), the study area occurs within the Central Victorian Uplands bioregion. It is located within the jurisdiction of the North Central Catchment Management Authority (CMA) and the Hepburn Shire Council municipality.

In 2018, Ecology and Heritage Partners Pty Ltd was commissioned by Hepburn Wind to undertake a review of the previous ecological assessments completed for the Hepburn Community Wind Farm, Leonards Hill, Victoria. Accordingly, the aim of the assessment available at Attachment 1 was to:

- Peer review the previous ecological assessment completed for the proposed development.
- Provide a letter to Hepburn Community Wind Farm that verifies the reports and confirms that the siting of the solar panels is in an existing area that has been previously cleared for agriculture.
- Provide advice with respect to the Environmental Management Plan that is specific to the proposed solar farm development.
- To identify the ecological values known to, or likely to occur within the study area, and determine the potential regulatory and legislative implications associated with the proposed action.

Based on the review by Ecology and Heritage Partners, the previous reports used to support the planning approvals and construction of the wind farm are suitable. It is considered that given the highly modified nature of the study area, no significant impacts to ecological values will occur as a result of the construction of an additional solar farm. The proposed solar farm is proposed to be located in areas that have previously been cleared for agriculture, and no remnant native vegetation or significant flora, fauna and ecological communities are proposed to be impacted by the development. A planning permit to remove native vegetation and an EPBC Act referral for the proposed solar plant is not required.

The proposal is consistent with the objectives of Clause 12 Environmental Landscapes as the project will not impact on native vegetation or flora or fauna.

7.4.2 Protecting cultural heritage

There are no areas of cultural heritage sensitivity on the site.

7.5 Avoiding Loss of Agricultural Land

The location of Hepburn Wind's turbines and proposed solar systems are confined to the upper slopes of Leonard's Hill, restricted to areas that support volcanic-derived soils.

As per the map provided in section 5.3, from an agricultural perspective, the summit of Leonards Hill and surrounding slopes are considered the least productive land and is rated Low Quality within the western block, due to a relatively shallow soil-profile in comparison to the lower slopes. The surrounding land on the same property is rated Very High due to being highly productive for agriculture due to high rainfall and presence of deep fertile clay soil.

The technology selected for this project has been chosen because it has a smaller footprint than alternatives totalling 7 hectare (18 acres) as compared to at least 18 hectare (45 acres) for other technologies and the ability to fit it onto the area of the property that is Low Quality. The overall size of the farm is 300 acres so the usage of 18 acres for the solar farm minimal, even if this land were to be used as farmland it would not support one income. Although cattle will be fenced off from the solar farm, sheep will be allowed to graze in between the arrays, and the addition of the solar farm will not impact the current cattle farming practice.

In addition, the mix of east-west and north-south facing arrays means that the natural topography can be utilised without earthworks and importantly without topsoil removal. The PEG technology utilises a peg frame to stabilise the solar modules and therefore does not need concrete to stabilise pylons. This reduces the long-term impact on the site and increases the prospect of returning the land to agricultural use if required.

The minimal disturbance to the soil and the modest size of the project will limit the impact on agricultural land and is in accordance with State policy and the Solar Guidelines.

The development is contained to the lot and has sufficient boundary setbacks. There is no impact to adjoining uses and there is no conflict raised such as dust creation or noise.

7.6 Geotechnical and hydrology

The solar farm has been designed to minimise disturbance to the earth and changes to the current run-off pattern. The small footprint of 18 acres being located on the hill summit and downward slope (contour viewable in Attachment 8 Development Plans) means that the installation will be highly localised and distributed and will not create change. The development will pose minimal effect on the catchment of the area and will not impact on water quality.

The PEG design has been chosen (in part) to avoid landscape terracing and earthworks. Without the selected design, a cut-terrace across the lower slope could have been required for engineering purposes, resulting in risks to the broader water catchment (catchment degradation and water quality issues). The design avoids the possible requirement to construct new dams or the expansion of existing dams to control erosion and regulate surface-flows.

In 2020 Coffey undertook an investigation to assess the subsurface conditions on the northern part of the subject site (location of the proposed solar array) to confirm the recommendations of the previous Coffey report for the wind farm development (GEOTABTF08188AA-AC dated 27 September 2010) conducted on the southern portion of the site.

The fieldwork was undertaken on 5 February 2020 and comprised the completion of 5 test pits, designated TP01 to TP05, to 2m depth and Dynamic Cone Penetrometer (DCP) test adjacent to each test pit at various locations around the area of the proposed solar farm. Based on the results of the geotechnical investigation, the recommendations provided the previous Coffey report are suitable for the subject site where the new solar farm is proposed. Deviations and additional recommendations from those previously provided were in regards to spread footings and the seismic site subsoil class. The findings can be viewed in Attachment 6.

In 2020, Meralli Solar also performed a PEG Pull Test to determine soil suitability for installation of the Belectric PEG system. PEG system rods are driven into the proposed site and the amount of resistance (kg) required to extract the rod is measured. It is also an appropriate time to inspect the site for anything that may be relevant to site preparation or installation, including rock that may cause refusal.

Gamcorp then performed a Structural assessment and Foundation design and recommendations for the Belectric PEG System in accordance with wind loads derived from AS/NZS1170.2:2011 (R2016) and with other current Australian Standards and Design Compliance Certification for the Site-Specific Wind and Foundation conditions.

No disposal of effluent is required for the development. The design considerations respond to the ongoing sustainable management of the land but retaining vegetation (grass) to hold soil in place and avoid silt/runoff and erosion of the land. The runoff will follow existing patterns and slopes of the hill plateau, causing no requirement for adaptation in response to the proposal.

The PEG technology can fit to the existing topography of the site which is on the hill plateau and slope through a blend of east-west and north-south arrays, resulting in no impact to the site hydrology. The fact that there is no terracing or earthworks means the water flow will remain the same as it currently it. It is important to note, the PEGs being 16mm is diameter and as they are spaced 1 to 2 metres apart they will not disturb the natural surface which will continue to be grassed and mown or grazed by sheep where accessible – therefore erosion will not be an issue.

The spacing between the panels will ensure an even disbursement of rainfall – rather than a collection of rainfall as can be seen via other solar technologies. It is not considered by the consultants undertaking the engineering and civil works designs that any drainage trenches will

need to be created. The addition of the solar will not have any effect at all on likely water flows. There is no viable obstruction that would change the direction of the water.

7.7 Minimising Visual Impacts

Dwellings and viewpoints are able to be reviewed in the Neighbourhood Map and Photomontages in section 5 as well as the Development Plans in Attachment 8. The Development Plans provide a contour map to also provide guidance on how the topography further minimises the visual impact for all neighbours. The following table outlines the level of visibility for neighbours within 1km.

Existing residence within 1km	Visibility from residence	Visibility from living areas	Visibility from rear of property
18	No	No	No
19	No	No	No
20	No	No	No
21	No	No	No
22	No	No	No
23	No	No	No
24	No	No	Yes
25	No	No	No
26	No	No	Yes
27 landowners house	No	No	No
28 landowners house	No	No	No
29	No	No	No
30	No	No	No
31	No	No	No
32	No	No	No
33	No	No	No
34	No	No	No
35	No	No	No
36	No	No	No
37	No	No	No
38	No	No	No
39	No	No	No

It should be noted that in between houses 27 and 28 there is an additional property without any structures built on it. The location of the summit of Leonards Hill as has been outlined in previous sections, was chosen for a multitude of reasons including the ability to not be visible for any residences in the neighbourhood and for no roads to have visibility. Any other location on the farm would have resulted in more visibility for neighbours and road users.

In regards to screen planting, alongside the limited visibility, it is less likely to be required under the peg-design as the existing vegetation along the northern property boundary already buffers views from the neighbouring property. Construction of the PEG design is expected to take four to six weeks.

Under the ESO1 the following landscape character objectives are to be achieved:

- To maintain the visual significance of the woodlands and grasslands of the peaks and hilltop features of these areas.
- To maintain the visual significance of the ridges and escarpments.
- To protect these areas from intrusive and dominant development.
- To protect significant geological sites from development.

As demonstrated, the view of the hilltop is only interrupted from a close standpoint. From the road level, the solar array is not visible. The overall character provided by the surrounding woodland is not interrupted. The development will not dominate the landscape. The site is not listed under the table at Clause 1.0 of the schedule.

7.8 Natural Hazard Management

7.8.1 Bushfire

Whilst the site is within a Bushfire Management Overlay, this particular use does not trigger a permit or the requirements. Considerations have been given to fire management for the proposed facility. A Solar Farm Bushfire Risk Assessment Report & Mitigation Plan is available at Attachment 6. The existing wind farm complies with the relevant Australian Standards and Building Code of Australia, which determine requirements for the structures on the site and fire protection measures for plant and machinery operating on the site.

Existing fire mitigation measures on site include:

- lightning protection devices installed on each wind turbine
- under-grounding of electrical and communications cables
- monitoring systems that detect temperature increases in the turbines and shuts them down when a threshold temperature is reached
- hazard reduction on site
- regular maintenance and inspections
- firefighting equipment
- additional 22,500 litre tank for CFA water supply on site

The Leonards Hill Wind Operations Emergency and Evacuation Procedures document outlines the process to be implemented in case of a fire.

The 2009 Victorian Bushfires Royal Commission, which was established after the Black Saturday bushfires, made several recommendations to make powerlines safer in bushfire risk areas (including the network the wind farm feeds into). These recommendations have seen Powercor commence the installation of Rapid Earth Fault Current Limiter (REFCL) devices, the operation of which could result in damage to high voltage assets connected to these networks. The wind farm is located in Tranche 2 of the REFCL program and is currently undergoing required modifications to the current apparatus to prevent any resultant damage to the plant.

The Solar Farm Bushfire Risk Assessment Report & Mitigation Plan at Attachment 6 provides the analysis of bushfire risk and has identified that the key risk to the proposed Hepburn Solar Farm site and surrounding area is from bushfires burning in the adjoining Public Land areas. Whilst there are large areas of grassland surrounding the Solar Farm, the ember attack from the bushfires and subsequent grassfires in and around the Solar Farm facility will have the potential to be destructive. The Plan proposes new measures once the solar farm is constructed including:

- fire detection systems
- remote shut down possibilities of Solar Farm operations during high bushfire risk
- undertake regular inspections
- develop a Bushfire Mitigation Operational Schedule
- ensure staff and contractors are trained in firefighting
- ensure the maintenance of grassland within the Solar Farm area is kept at a nominal height of <100mm during the Fire Danger Period
- ensure all access roads and tracks are maintained to meet CFA standards for emergency vehicle access
- ensure landscaping on site is undertaken with bushfire risk considered
- install an additional static water supply of 50,000 litres
- provide defendable space of 10 metres surrounding the Solar Farm.

The potential bushfire risks posed by the construction and operation of the Hepburn Solar Farm development can be effectively managed by the implementation of the recommended fuel reduced areas inside and around the perimeter of the solar farm in conjunction with the other detailed recommendations. The potential environmental risk of fire will be appropriately managed and the Fire and Emergency Management Plan is consistent with the CFA's Guidelines for Renewable Energy Regulations.

7.8.2 Flood

The overall farm properties land is not flood prone and the area of the proposed solar farm is the plateau of Leonards Hill which is 740m above sea level and cannot be flooded.

7.9 Aviation

The existing wind and proposed solar farm does not impact nearby airfields. The existing wind turbines have a maximum height less than 110m above ground level therefore obstacle lighting was not required.

7.10 Glint and Glare and Electromagnetic

Impact from glint or glare associated with the solar farm is expected to be very limited. As the panels are made of tempered glass with an anti-reflective coating and non-reflective frames it is

not considered a risk for glint and glare. In addition, the low placement of the panels at 80-100cms above ground height further limits the ability to view the solar array from surrounding locations.

The lack of views to the solar array therefore limits the potential glint and glare. The nature of the sloping topography and established vegetation removes the ability for glare and glint for neighbouring properties. There are 22 dwellings located within 1km of the solar farm, however none of these will bear any relationship or have any views to the facility due to the significant topography and vegetation on and around the site. The dwelling locations are shown in Figure 5 Neighbourhood Map. Only 6 dwellings are within 400m of the site. The 6 houses are 22,23,24,26,27,28 as per the Neighbourhood Map. The image below shows the houses that are relevant to this assessment.

Houses 27,28 are the landowners and cannot see the array a per photomontage Viewpoint 1 due to the solar farm being over the crest of the hill. As shown in Viewpoints 1, 2 the solar array is not visible as the land rises up to obscure the turbines or their base, and therefore the solar array which sits below.

For houses 24 and 26, they are also on the downwards slope of the hill and won't have sight. In addition the houses are totally enclosed in trees, therefore there is no chance of view. The photo below shows a close up of the enclosed residences.

From Viewpoint 3, taken from the water tanks on property 26 , the solar array will be just visible on the horizon. Given the viewpoint is to the east of the proposal, the potential for glint and glare may only occur in the early morning and given the location of the view only occur from the field where away from the dwelling. The same outcome is true for the property of residence 24. The impact is not significant.

For houses 22,23 they also cannot see the solar farm due to the slope of the hill as per the image below (this is taken from the street corner).

Due to the angle of reflection of sunlight the only time of day that potential glint and glare could occur is when the sun is low to the horizon. To the east of the proposed array is forested area and no sensitive receivers and no major roads. Accordingly, there is no impact from glint and glare. The same forested area will prevent views to the solar array from Leonards Hill South Bullarto Road which runs east west further north of the proposed array. From the west the landscape is more open, however the topography and vegetation limit views to the proposed array (see photomontages). When the sun sets low on the horizon, theoretically there could be some glint and glare when viewed from the west, however due to the hill rising up from the viewing point, no view and therefore no glint and glare is possible.

The array is a minimum distance of 400m from Ballan Daylesford Road which runs in a north south direction. There is substantial established roadside vegetation along the road which further limits views to the site and accordingly limits any potential for glint and glare. In regards to oncoming traffic coming down the Ballan-Daylesford Road, the solar farm will be sited on Leonards Hill, the placement of the solar farm is on the forest facing side and slope of the hilltop, not on the south sloping road facing side. Therefore, it will not be visible and cannot create any glare and glint issues for road users.

Once the final solar site plan is determined, there will be the ongoing opportunity to locate landscape screening of a sufficient height, width and foliage density at maturity to further minimise any possible glint and glare impacts from properties.

The plan below shows the location of the aerodromes/airfields in relation to the subject site. There are no airfields near the subject site. Accordingly, even if there are planes which will fly

over the site at some time, they will be high enough and the proposal small enough that there will be no glint and glare.

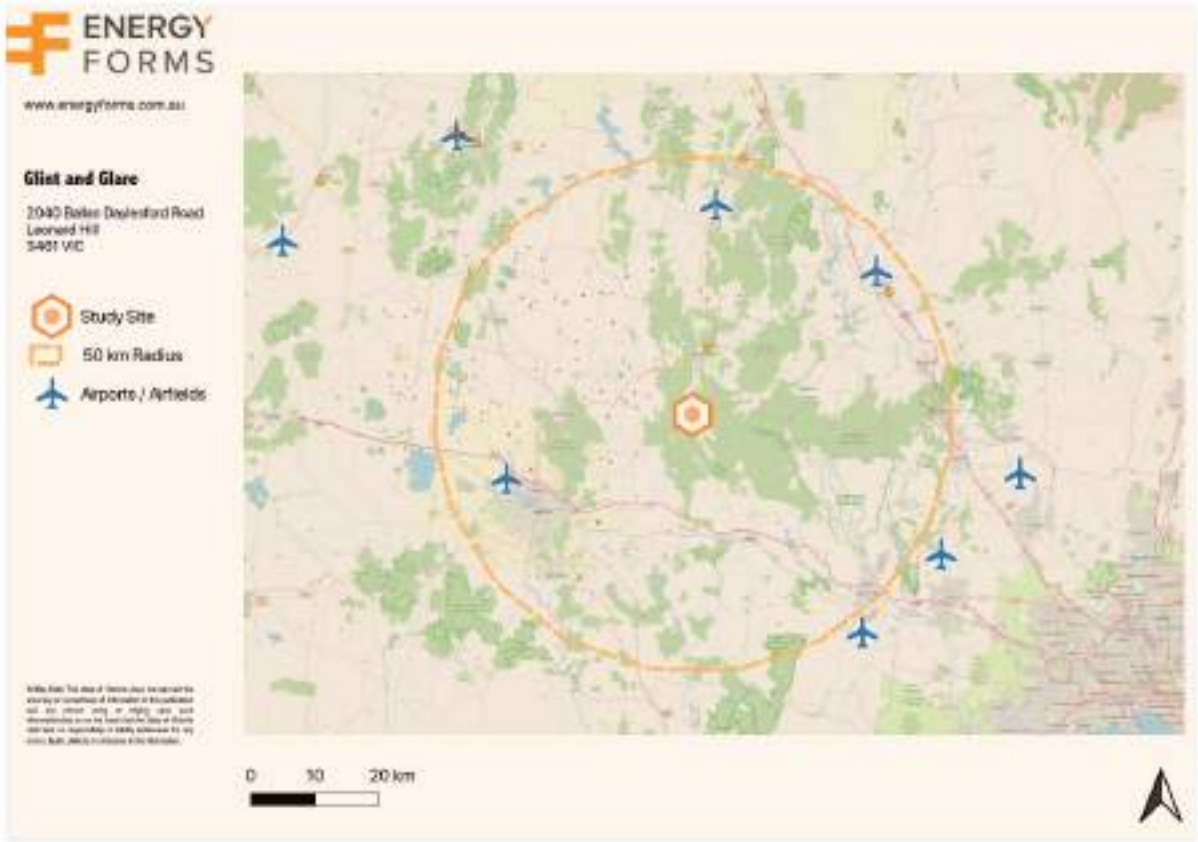


Figure 7 Glint and glare impacts to airports and airfields

For electromagnetic radiation there is considered to be no impact due to the existing balance of plant being the location for the solar inverters. As stated in the DELWP Solar Energy Facilities Design and Development Guidelines:

"The Australian Radiation Protection and Nuclear Safety Agency advises that the strength of this radiation will decrease with distance from the source, and it will become indistinguishable from background radiation within 50m of a high voltage power line and within 5 to 10m of a substation. The design and layout of the facility should account for this information."

The layout and design considers these factors and is consistent with the requirements of the Solar Design Guidelines.

7.11 Amenity Impacts

The site is an operational farm with large machinery that creates the historical acoustic amenity. Although there will be additional large machinery on site throughout the construction period, these will be removed for operations. Due to the PEG technology being selected, the noise profile

of construction will be low and it will be deployed in a short time period, construction staff will work during standard hours only. During operations, the inverters will emit noise emissions and in response to this a Noise Assessment Study is available at Attachment 4 in regards to the solar inverters. The surrounding farm will continue to be farmed and therefore there will continue to be seasonal machinery noises.

There is unlikely to be localised dust issues during construction due to the high rainfall on site and the low use of any earthworks on site. Existing access tracks will be used that are sealed and will not create dust issues.

7.12 Cumulative Impacts

There is currently no other wind farm in the immediate area. However, there is significant development to the south of the project with Moorabool and Lal Lal Wind Farms under construction and Yaloak South already operating. None of these developments are visible from the neighbouring area. Given the small scale of the wind farm and proposed solar farm, immediate low density of development, the large extent of remaining, unaffected, similar values, and the generally low-moderate impact (for most of the landscape values) of the cumulative effect is low in this case.

7.13 Traffic and Transport

The traffic and transport impact during construction will have a low impact due to the PEG technology being deployed in a short construction window of around two months and the small pool of construction workers of around 20 people will average around 12 persons on site at any time. Further there will not be the need for any over-dimensional delivery vehicles. Light vehicles and standard heavy articulated vehicles will be the only necessary vehicles throughout construction. The existing roads and access are sufficient already, the works will not cause any upgrades to be needed on roads – the existing wind farm was built there in 2011, which is of magnitude of much higher traffic and transport impact.

The intended site construction hours are between 7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm Saturday, with no works on Sundays or public holidays. The site team will not need to leave during the days as there will be mobile facilities on site. There will average around 4-10 light vehicle movement each morning and afternoon for the site team. There will be around 50 heavy-vehicle movements to deliver the components and associated materials over the construction period. Which averages around one movement per day.

8 Conclusion

The proposed solar array and battery will have minimal impact on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference. It will be co-located

with an existing two turbine wind farm that has been operational for nine years. A noise assessment (available at Attachment 4) has been undertaken in order to ensure the inverters are compliant to the noise standards.

Significant views including visual corridors and sightlines will not be impacted by the proposed solar farm. Photomontages represent the visibility of the solar energy facility from vantage points accessible to the public. The low design of the PEG technology further mitigates any visual impacts. The technology choice will enable the installation to be built atop the existing topography and the landscape will not be impacted by earthworks.

Community engagement, undertaken by Hepburn Wind, show that there is general acceptance for the development in the immediate area. The Hepburn Shire overall has demonstrated ambition to reaching zero-net emissions shire wide and are generally supportive of initiatives that enable this.

The site is not located in a declared irrigation district. Earthworks will not occur and therefore there will not be a change the rate of flow or the discharge point of water across a property boundary or the discharge of saline groundwater. No vegetation will be removed on site and the hill plateau and surrounding slopes are of low agricultural quality in comparison to the surrounding farm land which is of high quality.

The impact to local roads will be minimal due to the short construction period and limited construction workers on site. A traffic plan will be prepared according to permit conditions if granted.

The existing Leonards Hill Wind Operations Bushfire Management Plan (2012) will work alongside the new Solar Farm Bushfire Risk Assessment Report & Mitigation Plan (2020) which can be viewed at Attachment 5. The key identified risks are:

- Overhead lines
- Lighting strike
- Turbine fire
- Switchyard, inverter or transformer fire
- Bushfire, grass or hay fire

The development design has taken into consideration the safety of the surrounding area and the existing amenity. Landscape values have been considered and the least impact possible has been the goal. Engagement levels have traditionally been very strong with Hepburn Wind and the community, these have continued to be strong with the co-operative members of 2,009 and supporters, but generally have been less than hoped for with the onset of COVID-19, however, key stakeholders views have been considered and weighed up with the site constraints.