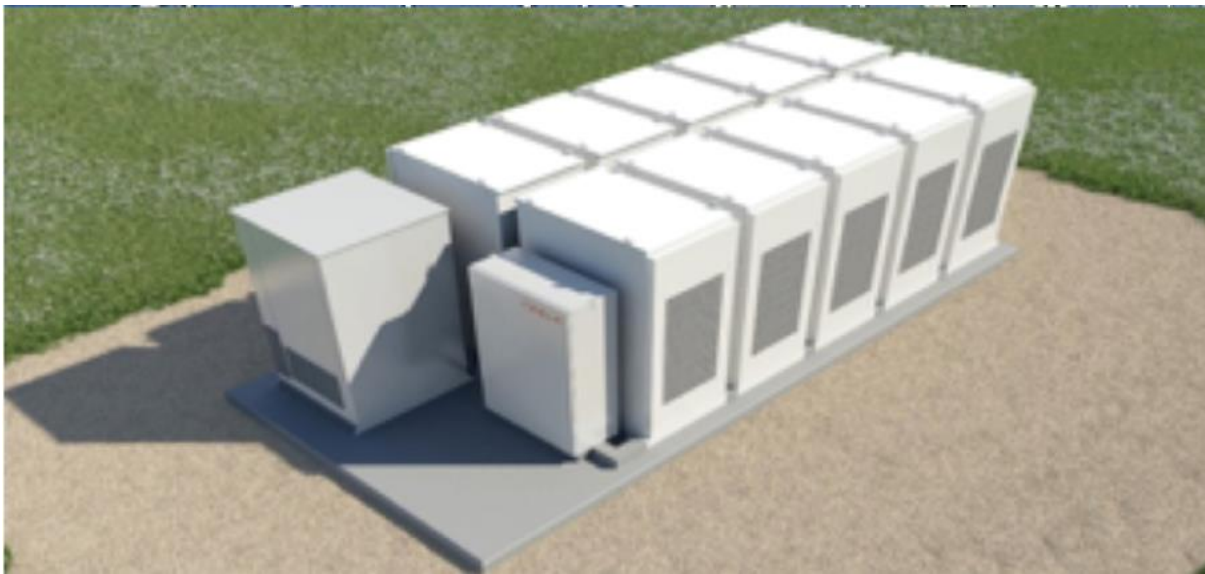


**Bushfire Risk Assessment
Phillip Island Community Energy Storage System
380 Back Beach Road Cowes**

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**August 2021
Revised November 2021**

xwb consulting
Town Planning and Bushfire Consultants



1. Introduction

XWB Consulting has been engaged by TEC-C to prepare a bushfire risk assessment for a planning permit application for a battery energy storage system (BESS) known as the Phillip Island Community Energy Storage System (PICESS) at 380 Back Beach Road Cowes.

The land is not within a Bushfire Management Overlay under the Bass Coast Planning Scheme, however is within in a Designated Bushfire Prone Area under the Building Regulations 2018.

The bushfire risk assessment has been prepared by:

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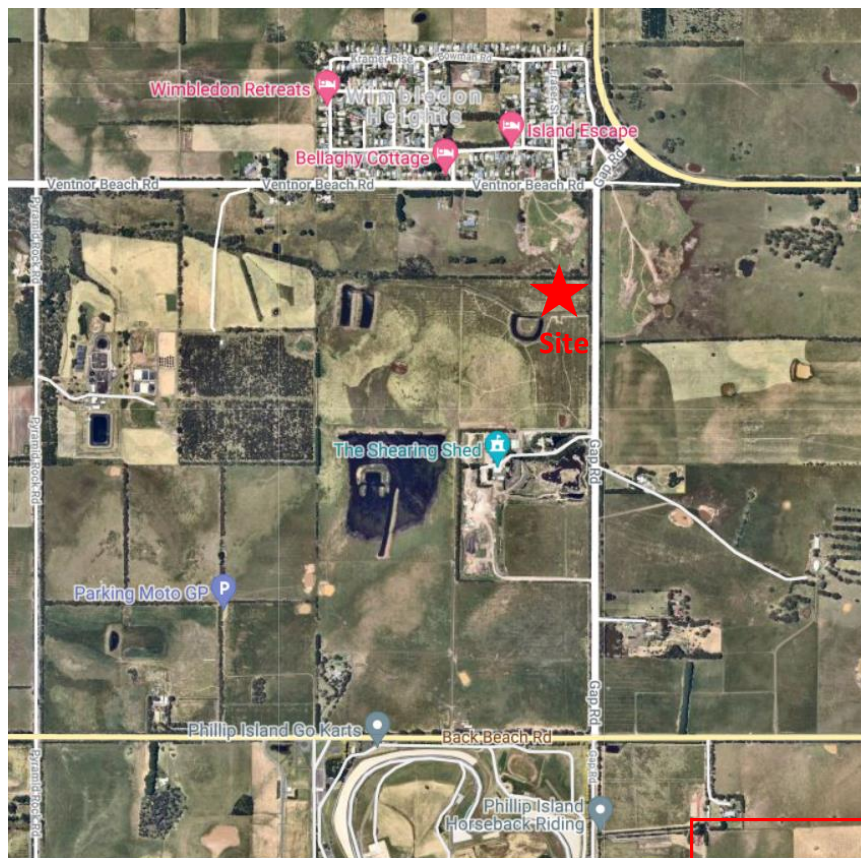
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2. Land Description

The proposed site of the PICES is located on the west side of Gap Road approximately 250m south of Ventnor Beach Road. The site is shown on the plan and aerial photograph below:



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The land owned by the Bass Coast Shire Council (Council) and the PICESS site (55m x 55m) is proposed to be leased from Council. The site is flat and largely clear of vegetation other than grass. There is a strip of vegetation along the northern boundary. Access is provided from Gap Road to the east which is a sealed rural standard road with a pavement of approximately 6.2m. There is significant roadside vegetation either side of Gap Road.

The land to the north comprises a small rural property with open paddocks on the south side of Ventnor Beach Road. To the north of Ventnor Beach Road is a small residential pocket known as Wimbledon Heights.

To the west and east are rural properties comprising open paddocks.

To the south is the balance of the land which comprises open paddocks and wraps around a site containing a depot and transfer station operated by Council.

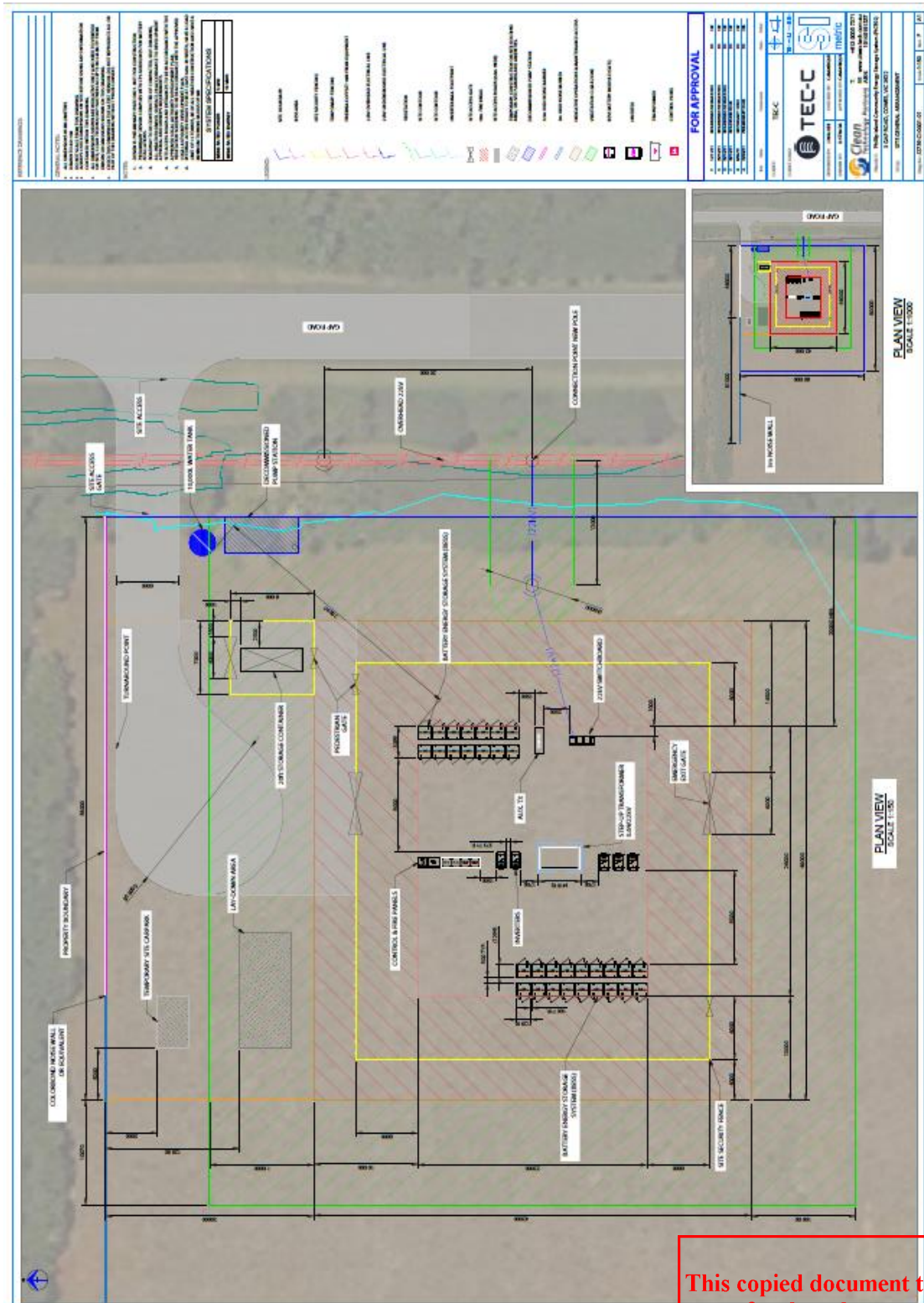
The land is in a Farming Zone under the Bass Coast Planning Scheme. The land is not within a Bushfire Management Overlay under the Bass Coast Planning Scheme, however the land is within a designated Bushfire Prone Area under the Building Regulations 2018.

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3. Proposal

It is proposed to provide a 5 megawatt BESS which would comprise a series of modular units contained within a 38m x 34m fenced compound which is setback 20m from Gap Road. No buildings are proposed on site with control units and other equipment contained in kiosks/cabinets and a storage container. Access to the site is provided via a driveway to the north of the compound. The proposed site plan is shown below:



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4. Planning Policy Framework

4.1 State Planning Policy

State Planning Policy in relation to bushfire planning is set out in Clause 13.02-1S of the planning scheme. The objective of the state policy is to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life. Strategies to meet this objective are set out below:

Protection of human life

Give priority to the protection of human life by:

- Prioritising the protection of human life over all other policy considerations.
- Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.
- Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision-making at all stages of the planning process.

Bushfire hazard identification and assessment

Identify bushfire hazard and undertake appropriate risk assessment by:

- Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.
- Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the *Building Act 1993* or regulations made under that Act.
- Applying the Bushfire Management Overlay in planning schemes to areas where the extent of vegetation can create an extreme bushfire hazard.
- Considering and assessing the bushfire hazard on the basis of:
 - Landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site;
 - Local conditions - meaning conditions in the area within approximately 1 kilometre from a site;
 - Neighbourhood conditions - meaning conditions in the area within 400 metres of the site;
 - The site for the development.
- Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.
- Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.
- Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have been addressed, performance measures satisfied or bushfire protection measures can be adequately implemented.

Settlement planning

Plan to strengthen the resilience of settlements and communities and prioritise protection of human life by:

- Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre

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under *AS 3959-2009 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2009).

- Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under *AS 3959-2009 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2009) where human life can be better protected from the effects of bushfire.
- Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.
- Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.
- Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.
- Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.
- Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS 3959-2009.

Areas of high biodiversity conservation value

Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are of high biodiversity conservation value.

Use and development control in a Bushfire Prone Area

In a bushfire prone area designated in accordance with regulations made under the *Building Act 1993*, bushfire risk should be considered when assessing planning applications for the following uses and development:

- Subdivisions of more than 10 lots
- Accommodation
- Childcare centre
- Education centre
- Emergency services facility
- Hospital
- Indoor recreation facility
- Major sports and recreation facility
- Place of assembly
- Any application for development that will result in people congregating in large numbers.

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When assessing a planning permit application for the above uses and development:

- Consider the risk of bushfire to people, property and community infrastructure.
- Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.
- Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.

Policy guidelines

The policy guidelines under the State Planning Policy specify that planning must consider as relevant:

- Any relevant approved State, regional and municipal fire prevention plan.
- AS 3959-2009 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2009).
- Building in bushfire-prone areas - CSIRO & Standards Australia (SAA HB36-1993)

4.2 Local Planning Policy

Local planning policy in relation to bushfire planning is set out in Clause 13.02-1L of the Bass Coast Planning Scheme. Local planning policy sets out that development should:

- Site, design and construct development to mitigate bushfire risk.
- Provide necessary bushfire protection measures, including:
 - Defendable space.
 - A dedicated fire-fighting water supply.
 - Fire authority access to and within the land.

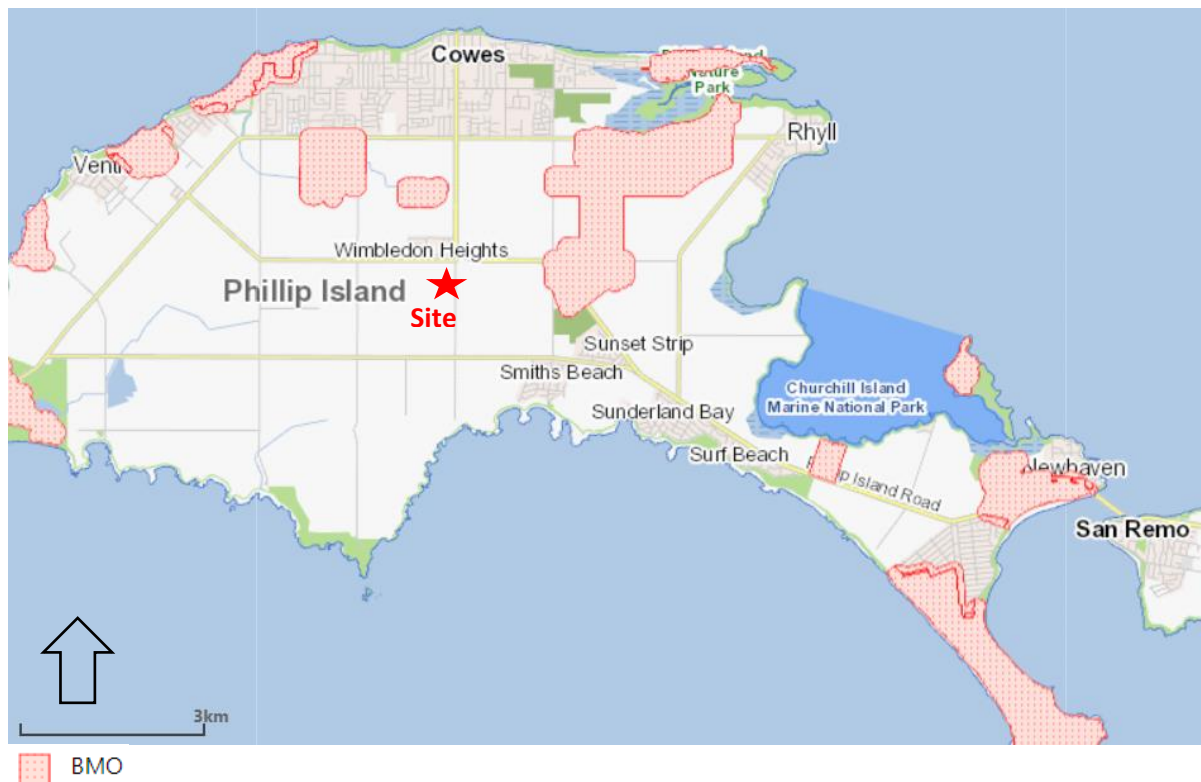
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5 Bushfire Risk Assessment

5.1 Bushfire Designation

The land is not included within a Bushfire Management Overlay under the Bass Coast Planning Scheme as shown on the plan below:

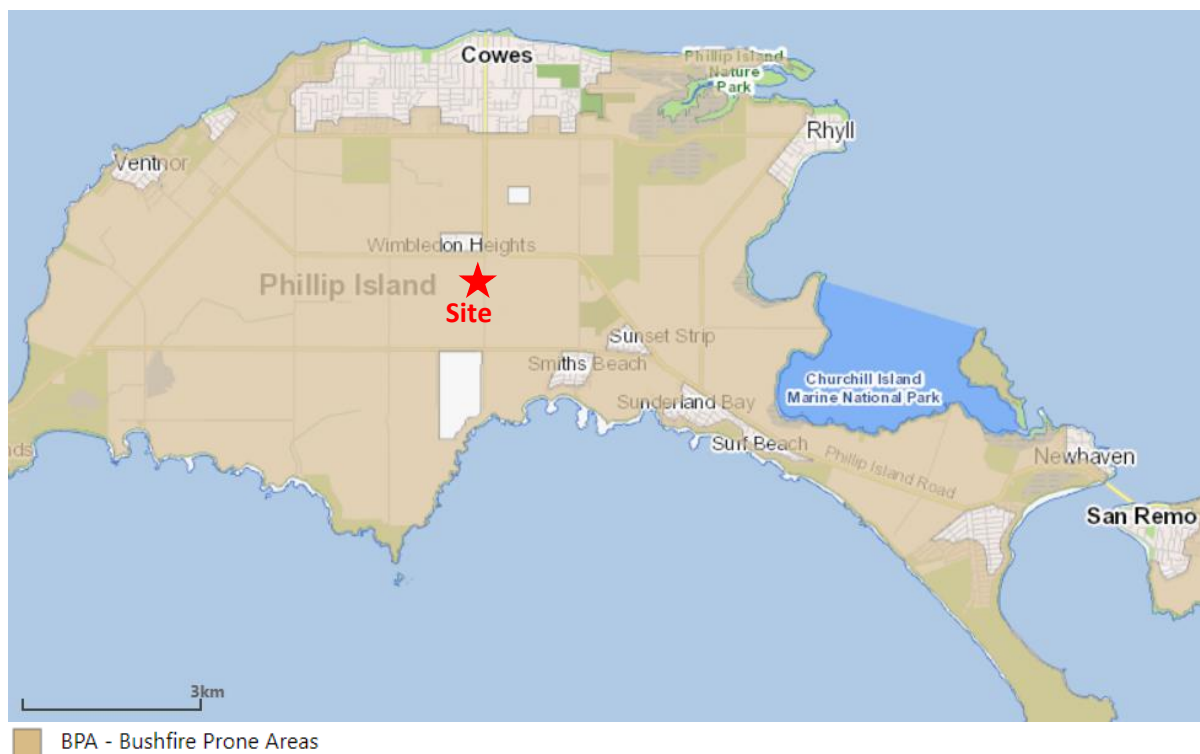


The closest area within a Bushfire Management Overlay is located approximately 1.2km to the north of the site. The Bushfire Management Overlay is applied in planning schemes to areas where the extent of vegetation can create an extreme bushfire hazard.

The land is included with a Bushfire Prone Area under the Building Regulations 2018 as shown on the plan below:

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Most of Phillip Island other than within urban areas is designated as a bushfire prone area. State planning policy requires the consideration of bushfire risk where land is included within a designated bushfire prone area, however the specific policy in relation to use and development control in a bushfire prone area does not apply to energy activities.

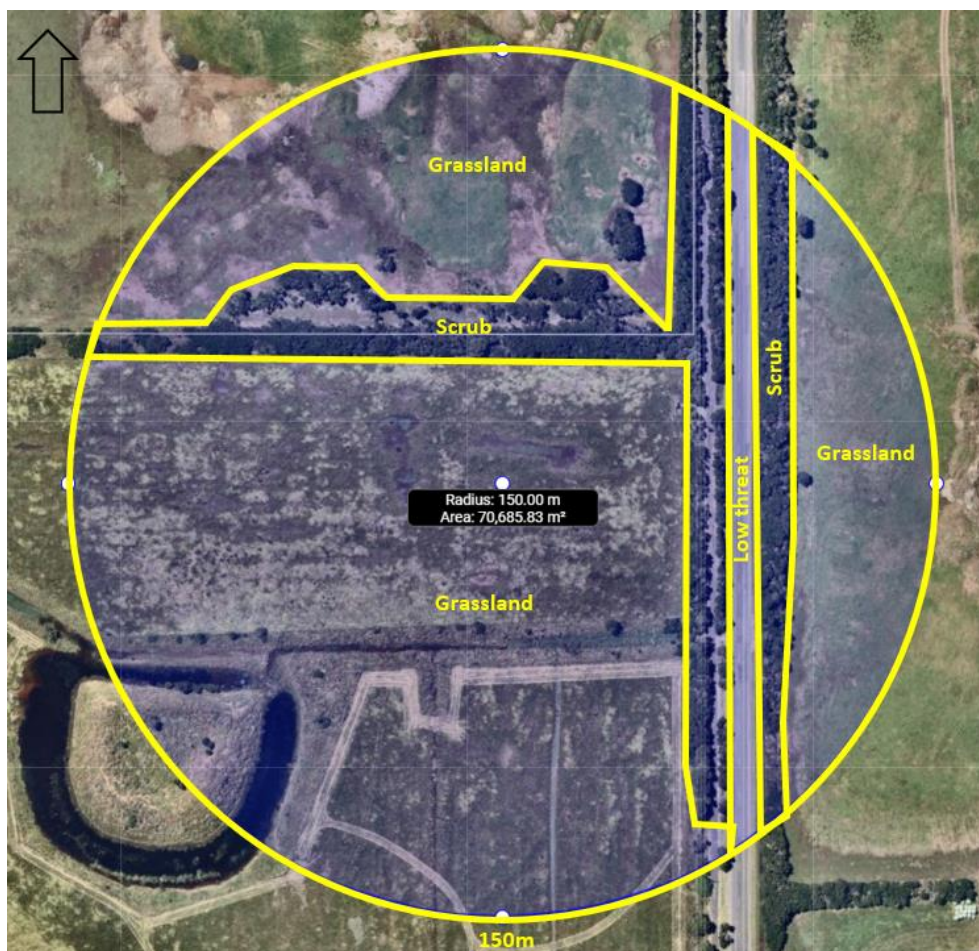
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5.2 Bushfire Site Hazard Assessment

A bushfire site hazard site assessment describes the bushfire hazard within 150 metres of the land. The description of the hazard is prepared in accordance with AS3959:2018 Construction of buildings in bushfire prone areas (Standards Australia).

The plan below shows the bushfire hazard within 150m of the proposed BESS:



The majority of the land within 150m of the proposed BESS comprises flat open paddocks which would be classified as grassland under AS3959.

Along the northern boundary of the land and along either side of Gap Road is an area of scrub as defined under AS3959. There areas of scrub are long narrow strips which along Gap Road are separated by the road pavement that would be classified as low threat / non vegetated under AS3959.

The vegetation is shown in the photographs below:

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Looking south west across the site.



Looking east towards Gap Road showing the scrub along Gap Road.

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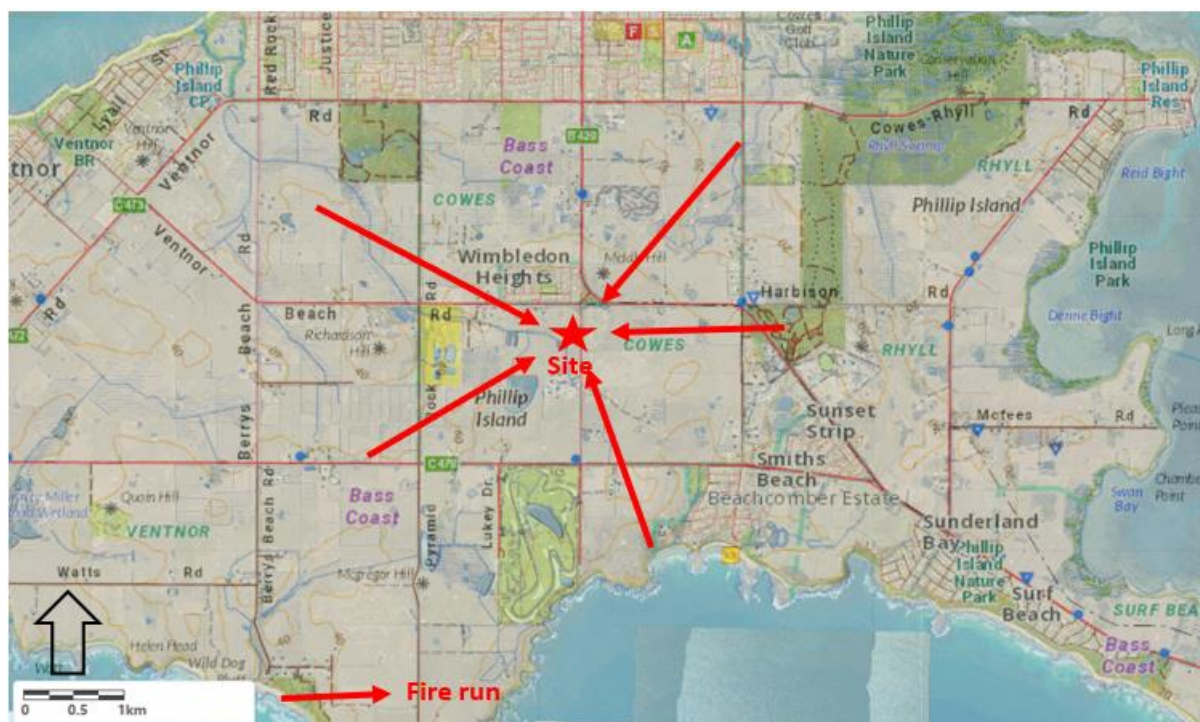
Entrance to the site from Gap Road

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5.3 Landscape Risk

The site and surrounding landscape context is shown on the plan below:



The surrounding landscape is predominantly open paddocks with gentle slopes. A grassfire in the surrounding landscape will have a limited fire run due to the geography of Phillip Island including urban areas and other facilities such as the Phillip Island Grand Prix Track. A limited fire run means fires will be more localised fires of a lesser intensity, although given the exposed nature of the island, stronger winds will be experienced from most directions. There is a strip of scrub along the northern boundary of the land and Gap Road that would result in a flare up in the intensity of a grassfire for a short duration.

In south eastern Australia, the greatest bushfire threat occurs when there is a strong dry north westerly wind followed by a south westerly wind change. Under these conditions there is the potential for short run grassfires from the north west and south west. The run of any fire from the north will be moderated by the Wimbledon Heights urban area.

There is no history of significant bushfires / grassfires on Phillip Island on the mapping available from DELWP.

Overall the landscape bushfire risk to the site is considered to be low given the absence of significant bushland areas on Phillip Island and likelihood of grassfires being more localised fires of limited intensity.

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5.4 Bushfire Mitigation Measures

This report specifically deals with fire in the context of bushfire risk. There is also the risk of fire directly associated with the BESS facility in addition to bushfire risk. This should be addressed separately from bushfire risk, although it is noted that the proposed BESS includes a fire detection and suppression system.

The bushfire risk from the wider landscape and the immediate environs to the PICESS is considered to be low.

The CFA Guidelines for Renewable Energy Installations (March 2021) provide guidance in relation fire directly associated with the BESS facility as well as bushfire. Having regard to these guidelines and the bushfire risk within the wider landscape and immediate environs, the following bushfire mitigation measures are recommended to be put in place:

5.4.1 Access

Fire truck access to the site is critical both in terms of protecting the PICESS from a fire in the surrounding landscape and in the event of a fire involving the BESS facility. Access is proposed to the north of the BESS compound with a two way access and a turning area. This primary access should be constructed to meet the following requirements:

- All-weather construction.
- A load limit of at least 15 tonnes.
- Provide a minimum trafficable width of 6 metres.
- Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically.
- The turning area must have a minimum radius of eight metres, or other turning head provided which meet the specification of Austroad Design for an 8.8 metre Service Vehicle

5.4.2 Water supply

There is no detail shown on the site plan in relation to the provision of an on site water hydrant. A water supply is required to protect the PICESS in the event of a bushfire/grassfire in the surrounding landscape, or in the event of a fire involving the BESS facility.

Where a fire hydrant is provided on site, a static water supply with a minimum capacity of 10,000 litres should be provided on site for bushfire/grassfire protection purposes. This water supply would be used to supplement the reticulated fire hydrant in the event of a loss of capacity. A 10,000 litre tank is shown at the entrance to the facility.

If no fire hydrant is provided on site, a static water supply should be provided on site for fire fighting purposes the capacity of which should be to the satisfaction of the CFA.

If a static water supply is provided, it must meet the following requirements:

- Water access points (hydrant and/or tank outlet) must be clearly identifiable and unobstructed to ensure efficient access.
- The static water storage tank(s) must be an above ground water tank constructed of concrete or steel.

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- The static water storage tank(s) must be capable of being completely refilled automatically or manually within 24 hours.
- The static water storage tank/s must be located at vehicle entrances to the facility and must be positioned at least 10m from the BESS facility.
- Outlets with CFA compatible fittings must be provided and must be positioned within four (4) metres to a hardstand area and provide a clear access for emergency services vehicles.
- Signage indicating 'FIRE WATER' and the tank capacity must be fixed to the tank.

5.4.3 Vegetation management

Vegetation management is required to prevent the spread of fire towards the PICES, prevent spot fires around the battery units and to reduce the impact from radiant heat.

A 10m non combustible fire break is recommended to be provided around the BESS facility from the outer edge of the battery units. The fire break should be free from any vegetation.

Grass areas for a minimum distance of 20m or to the property boundary (which ever is the lesser) from the BESS facility should be regularly mown with grass generally not exceeding 100mm in height. Intensive landscaping within this area should be avoided.

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Response to State Planning Policy

The following response is provided to state planning policy in relation to bushfire:

State policy	Response
Objective	A risk based assessment has been undertaken in relation to the land. The risk at a landscape and site scale is considered to be low.
Protection of human life	The bushfire risk at a landscape and site scale is low. The PICESS does not require people on site to operate the facility minimising the risk to human life.
Bushfire hazard identification and assessment	The bushfire risk at a landscape and site scale has been identified within this report, and it has been assessed as low.
Settlement planning	These strategies are largely directed towards development such as the expansion of a township or larger subdivision at the strategic planning stage and are not relevant to the current proposal.
Area of biodiversity	There are no known areas of biodiversity impacted by the PICESS or recommended bushfire mitigation measures.
Use and development controls in a bushfire prone area	This strategy is not relevant to the proposal as energy type activities are not included in the applicable use and development activities. A BESS is not an activity that results in the congregation of large numbers of people on site.

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7 Conclusion

The proposal involves a 5 megawatt BESS known as the PICESS. Based on the assessment undertaken, the bushfire risk is low.

Bushfire protection measures should be provided for the PICESS including access for fire trucks, a water supply for firefighting purposes, a 10m fire break and vegetation management within 20m of the BESS facility.

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