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## Planning Report



# Battery Energy Storage System

**280 Evans Road Cranbourne West  
Macquarie Corporate Holdings Pty Limited**

September 2021

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# Rangebank Battery Energy Storage System (BESS)

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### Document Control

Date Prepared	Version Number	Author	Reviewer	Distributed
<b>28 September 2021</b>	1	J. Mulligan	L. Lowe	Internal Client
<b>28 September 2021</b>	2	L. Lowe	J. Mulligan	DELWP

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## Executive Summary

Macquarie Corporate Holdings Pty Ltd proposes the development of a 200 megawatt/400 megawatt hour lithium ion battery in Cranbourne West. The facility is to be known as the Rangebank BESS (Battery Energy Storage System) and is located immediately adjacent to Ausnet's Cranbourne Terminal Station. The Rangebank BESS will stabilise the State electricity supply by providing additional storage capacity for the terminal station, discharging energy at times of peak demand, for the immediate and long term benefit of commercial and residential consumers.

The Rangebank BESS is located within the emerging Rangebank Business Park. It is a comprehensive and innovative proposal with wide ranging benefits; however, care has been taken to ensure the proposal is sited appropriately in the local area, and the application is supported by an *Acoustic Report* and *Preliminary Hazard Assessment* which outline appropriate design and management measures.

The Utility Installation proposal is generally in accordance with the Urban Growth Zone and Cranbourne West Precinct Structure Plan, and will achieve important State policy for energy and resource efficiency.

### Subject Site

The subject site is commonly known as 280 Evans Road, Cranbourne West and can be formally identified as Lot 1 on Plan of Subdivision 823198L. The Rangebank BESS is to be located in the south-east quadrant of the site.

### Proposal

This Planning Permit application seeks approval of the use and development of a large battery storage system (utility installation) generally in accordance with the submitted plans and documents.

### Planning Controls

Pursuant to the Casey Planning Scheme, the following planning controls apply to the subject land;

#### Zone

- Clause 37.07 – Urban Growth Zone (Schedule 1 – Cranbourne West Precinct Structure Plan)
- Applied Zone - Clause 34.02 – Commercial 2 Zone

#### Overlays

- Clause 45.01 – Public Acquisition Overlay 3 (not impacting proposal site)
- Clause 45.06 – Development Contributions Plan Overlay (Schedule 12)
- Clause 45.12 – Specific Controls Overlay Schedule 10 (not impacting proposal site)

### Permit Triggers

A planning permit is required under the following provisions of the Casey Planning Scheme:

- Clause 34.02-1 – a permit is required to use the land for the purpose of Utility Installation.
- Clause 34.02-4 – a permit is required to construct or carry out works.

### Exemption from Notification and Review

The application is considered to be generally in accordance with the Cranbourne West Precinct Structure Plan applying to the land and is therefore exempt from the notice requirements of section 52(1)(a), (b) and (d), the decision requirements of section 64(1), (2) and (3) and the review rights of section 82(1) of the Act, as per clause 37.07-13 of the Urban Growth Zone.

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### Other

A small portion of the land is within an area of cultural heritage sensitivity and the proposal constitutes a high impact activity. A Cultural Heritage Management Plan was prepared for the site in 2014 (amended 2019) and the required salvage has since been undertaken enabling the site to be developed for the proposed purpose in accordance with the conditions of the CHMP.

The land is within a designated Bushfire Prone Area and this is addressed comprehensively by the submitted *Preliminary Hazard Assessment* and *Bushfire Management Plan*.

### Connection Works Planning Permit Application

A separate Planning Permit application is lodged with DELWP for the installation of Connection infrastructure including:

- An underground cable from the proposed Rangebank BESS facility to Cranbourne Terminal Station in the adjacent land parcel at 1120 Thompsons Road, Cranbourne West.
- 220kV connection equipment located within the existing Cranbourne Terminal Station to be constructed by Ausnet.

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### Supporting Documentation

1. Planning Permit Application Form.
2. Metropolitan Planning Levy Certificate Ref: 19289.
3. Copy of Title, Volume 12141 Folio 517, 280S Evans Road Cranbourne West.
4. Plans of Subdivision 806750M (unregistered).
5. Plan of Survey, 280 Evans Road, Cranbourne West, KLM Spatial, Ref 5959 DE1 V3, 25/8/21.
6. Rangebank BESS Site Plan, Plan, Elevations 5959.08 PE01\_V2, Sheets 1-4, KLM Spatial, 27/09/21.
7. Site Structures – Fluence plans and elevations various – Relay Room layout 24/5/21, Relay Room Elevations 12/5/21, proposed Store Room 12/2/21, Kiosk Concept Layout 11/5/21, Power Transformer 12/5/21.
8. Modular Walls Standard Details, Guardian Wall Typical Details, Modular Walls, Dwg MW00000-TD-01, and extracts from Acoustic Walls Specialised Panel Solutions, Modular Walls, Publication 810260.
9. Landscape Concept Design Package Rangebank BESS, Pollen Studio, Issue 6, 22/9/21
10. Cranbourne BESS Acoustic Report, Marshall Day Acoustics, Rp 001 R01 20210002, 16 August 2021.
11. Cranbourne West: Battery Energy Storage System (BESS) Preliminary Hazard Assessment (PHA) Macquarie Group Ltd, Aurecon, Reference: 512169 Revision: 1 19/9/21.
12. Cranbourne West Battery Energy Storage System (BESS), Evans Road, Cranbourne West, Fire Management Plan (FMP), Aurecon, Version 3, 20/9/2021.
13. Stormwater Strategy Rangebank BESS, KLM Spatial, Version 1, September 2021.
14. Cultural Heritage Management Plan 12874, 280 Evans Road Cranbourne West, Industrial Subdivision, Archaeology at Tardis, October 2014.

15. Salvage Report of VAHR 7921-1521, Archaeology at Tardis, June 2019.

### Background Planning Documentation

- A. Planning Permit PA20-0465 (Two lot subdivision) and endorsed plan
- B. Endorsed Streetscape Master Plan (PA20-0465)
- C. Endorsed Public Open Space Concept Plan (PA20-0465)
- D. Endorsed Public Infrastructure Plan (PA20-0465), Ref PIP01 V2 dated 2/7/21, KLM Spatial
- E. City of Casey letter dated 26/7/21, providing consent under Conditions 3 and 6f (PA20-0465)
- F. Planning Permit PA20-0983 (Earthworks) and endorsed plans
- G. Planning Permit application PA21-0542 – Development Plans Warehouses
- H. A Flora and Fauna Assessment, 280 Evans Road, Cranbourne West, Practical Ecology, May 2013
- I. Environmental Report – Limited Environmental Site Investigation, 280 Evans Road Cranbourne West, LR Pardo & Associates, October 2013
- J. Environmental Report – Limited Environmental Site Investigation, 280 Evans Road Cranbourne West, LR Pardo & Associates, October 2013
- K. Traffic Engineering Assessment, 280 Evans Road, Cranbourne West, letter prepared by Traffix Group, 11/9/19
- L. Stormwater Management Strategy Industrial Development, 280 Evans Road Cranbourne West, KLM Spatial, April 2021, Version 1.

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## 1.0 Rangebank BESS Project Benefits

The Victorian State Government recently amended the *National Electricity (Victoria) Act 2005* to facilitate critical network upgrades and infrastructure connections needed to ensure power reliability in Victoria. The Rangebank BESS seeks to support these outcomes by providing increased network stability and lower electricity prices for Victoria.

The Rangebank BESS will have a 200 megawatt/400 megawatt hour capacity to assist with stabilisation of the electricity supply during high demand periods, including the smoothing of renewable energy input to the electricity grid. This will ensure stability of supply for businesses across Melbourne including the important south-east employment precincts, as well as households, particularly during peak summer demand periods.

The Rangebank BESS Project will provide a range of valuable functions to the electricity market and network as well as providing an energy reserve to augment power supplies in Victoria. Specifically, it will provide for:

- Energy 'time shifting' from times of high supply, e.g., during peak renewable production to periods of high demand, and
- Network support via a range of services including Fast Frequency Response, Reactive Power Support and Voltage Stability.

The proposal is larger than the established 150 MW / 194 MWh Hornsdale Power Reserve in South Australia. The Hornsdale Power Reserve is credited with reducing power supply costs in South Australia including providing increased competition. It is proposed that this project will provide the same benefit to Victorian energy users.

In order to achieve State Government objectives and funding requirements, the Rangebank BESS is currently proposed for construction commencement in early 2022 with operational commencement in late 2022.

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## 2.0 Planning Summary

The Rangebank BESS builds upon the locational advantage presented by the neighbouring Ausnet electricity terminal station to propose an energy storage facility which will have significant benefits for the State electricity grid, in particular, stabilising supply for industry in the south-east.

The proposal is suitably located having regard to the site, surrounding land use and the vision proposed for the area by the Cranbourne West Precinct Structure Plan, as follows:

- The use is appropriate within a designated Business Park precinct, will not detract from future employment related development in the vicinity, and will potentially enhance the reputation of Rangebank Business Park in Cranbourne West as a leading edge high technology precinct. The thorough assessment provided demonstrates the proposal is generally in accordance with the Cranbourne West Precinct Structure Plan.
- An *Acoustic Report* prepared by Marshall Day Acoustics accompanies this application, and outlines the design measures that will be implemented to ensure that any noise generated by the facility does not exceed Noise Protocol noise levels in nearby residential areas; measures include equipment attenuation and construction of a 4.5 metre tall acoustic wall around the southern boundaries of the BESS.
- A *Preliminary Hazard Assessment* and *Fire Management Plan (Aurecon June 2021)* have been prepared identifying various hazards associated with the BESS operations such as potential short circuits and battery cell fires, which can be addressed through appropriate technical and management safeguards. The report addresses the relevant requirements of the *Guidelines for Renewable Energy installations (CFA 2021)*. Fluence, the manufacturer and supplier of the BESS battery system, places high priority on safety management with fire detection mechanisms incorporated throughout the various levels of operating systems.
- The landscape design for the BESS and the adjoining public open space reserve has been undertaken concurrently by Pollen Studio for the applicant and land owner, ensuring a co-ordinated and quality landscape outcome. Indigenous landscaping is proposed along the Battery Court frontage and adjacent to the proposed acoustic wall to enhance the presentation to the nearest residential properties on Breens Road.
- The BESS site is located in the south-east quadrant of a large 20 hectare property for which a two lot subdivision has been approved. The subdivision will result in the construction of Rangebank Drive and Battery Court providing direct access to the proposal from a signalised intersection on Thompsons Road. It is anticipated that the road, associated parkland and subdivision will be completed by mid-2022.
- This planning assessment outlines the status of current planning approvals relevant to the larger site and provides the comprehensive background reports previously submitted to Casey Council as required under the Urban Growth Zone – Schedule 1.
- The Rangebank BESS proposal achieves a particularly high level having of compliance with the resource and energy objectives of State and Local Planning Policy Framework and the Cranbourne West Precinct Structure Plan, employing new technology to achieve significant environmental benefits related to energy storage. The use and development of the land for a utility installation is otherwise consistent with the requirements of the Casey Planning Scheme and the Precinct Structure Plan, and comprehensively considers the amenity of neighbouring residential areas as addressed in detailed specialist reporting.

## 3.0 Background Information

### 3.1. Pre-Application Meeting

A pre-application meeting was held on 16<sup>th</sup> December 2020. The meeting was attended by Michael Juttner, Sam Mason, Mitchell Connolly, and Nihal Altuntas (Department of Environment, Land, Water and Planning), Tom Best (Macquarie Holdings Pty Ltd), Steven Murphy (land owner) and Louise Lowe (KLM Spatial). An overview of the proposal was provided and application requirements were discussed. More recently, a pre-application was held with Sam Mason and other DELWP officers on 2<sup>nd</sup> September 2021 prior to the lodgement of the application.

The proposal has been discussed on an ongoing basis with Peter Hobbs, Principal Planner at the City of Casey over the last year, and an information session was held with senior Council management (including Kathryn Seirlis, Manager Growth and Investment) on 19<sup>th</sup> August 2021. The City of Casey has taken a keen interest in the proposal and has facilitated other development approvals at the site in recent months.

A similar pre-application meeting was held with Fire Rescue Victoria on 24<sup>th</sup> August 2021 and was attended by officers, Colin Rose, Kevin Beardmore and Angus Mair.

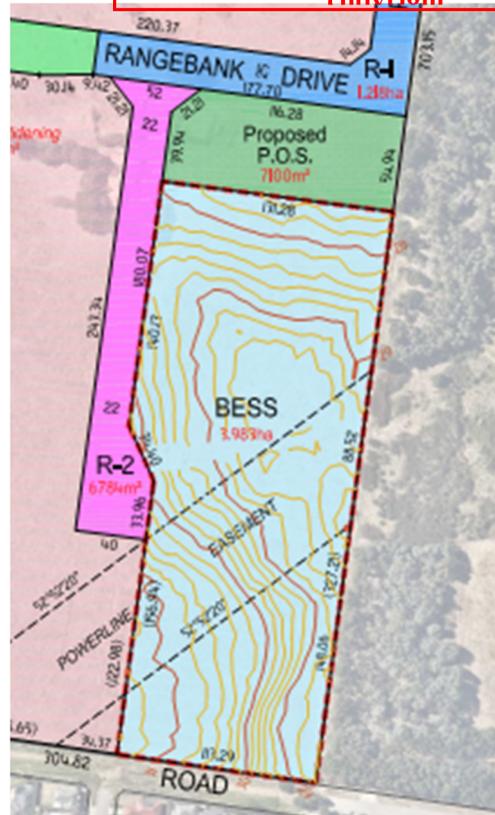
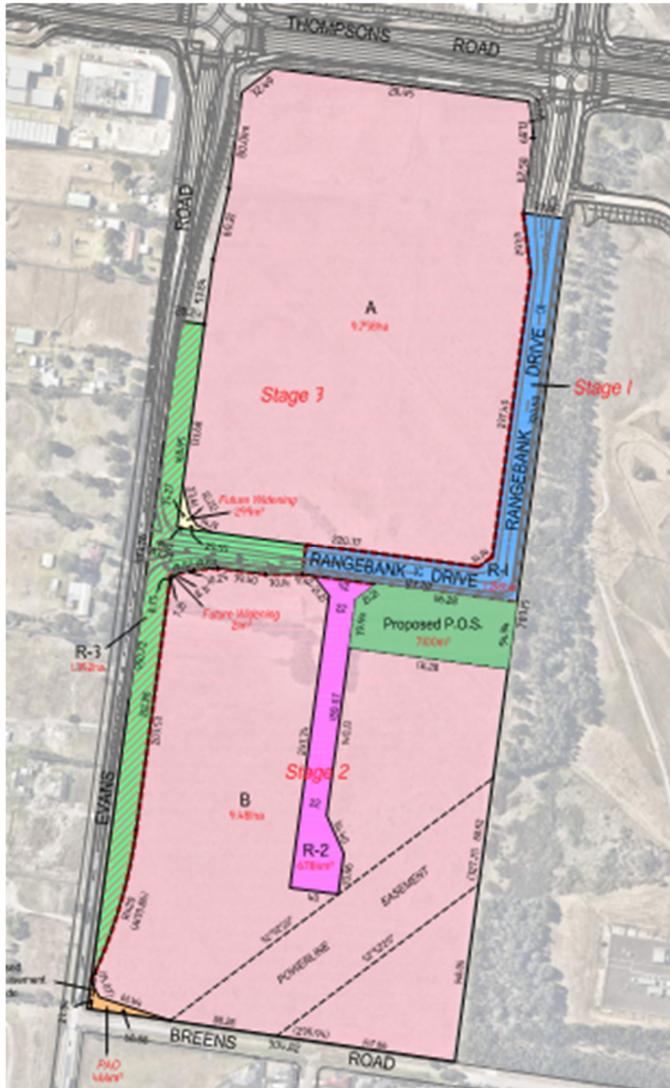
### 3.2. Previous Planning Permits

A Planning Permit (PA20-0465) for a two lot subdivision and construction of Rangebank Drive was issued on the 8/3/2018, and subsequently amended on 18/2/20. The road construction is identified in three stages as shown below. The Rangebank BESS site is located in proposed Lot B below (Lot C PS 836956V unregistered).

Public open space of 7100m<sup>2</sup> is proposed on the south side of Rangebank Drive immediately north of the BESS site. The landscape design for the BESS and public open space reserve has been undertaken concurrently by Pollen Studio for the applicant and land owner, ensuring a co-ordinated and quality landscape outcome.

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Figure 1: From Endorsed Plan Planning Permit PA20-0465

From Site Plan Ref 5959.08 SP01 V2

Engineering approvals are currently being sought from the City of Casey for the construction of Stages 1 and 2 of Rangebank Drive and Battery Court. Construction of these roadworks is scheduled for later this year/early 2022. The three plans of subdivision associated with this permit have recently been certified. It is anticipated that Statement of Compliance for Stages 1 and 2 of the subdivision and issue of separate titles will occur in mid-2022.

Condition 6 of the permit requires a number of matters be addressed as part of a s.173 agreement and includes the following at clause (f):

*Unless with the written consent of the Responsible Authority, the public open space must be provided and created by a further plan of subdivision, prior to any of the following occurring:*

- (i) *The issue of a Certificate of Occupancy for any development permitted on Lot A or Lot B;*
- (ii) *The commencement of any new use or development on Lot A or Lot B; or*
- (iii) *The further certification under the Subdivision Act 1988 of any plan on Lot A or Lot B.*

The land owner has recently entered this s.173 agreement with the City of Casey. Subsequently, the City of Casey has provided written consent dated 26/7/21 that development may proceed on the site prior to the vesting of the public open space. (A copy of this agreement and written consent are appended.)

The endorsed Streetscape Master Plan associated with this subdivision shows that all (planted) vegetation is to be removed from the site.

A second Planning Permit PA20-0983 was issued on 27/5/21 for earthworks associated with the construction of the internal roads, creation of a temporary retardation basis and earthworks within Lot B.

The endorsed earthworks plan, shows limited earthworks on the BESS site, other than at the south of the site, as the battery proposal is able to be constructed across the natural grade of the land. An extract from the endorsed Earthworks Plan is provided in the following image.

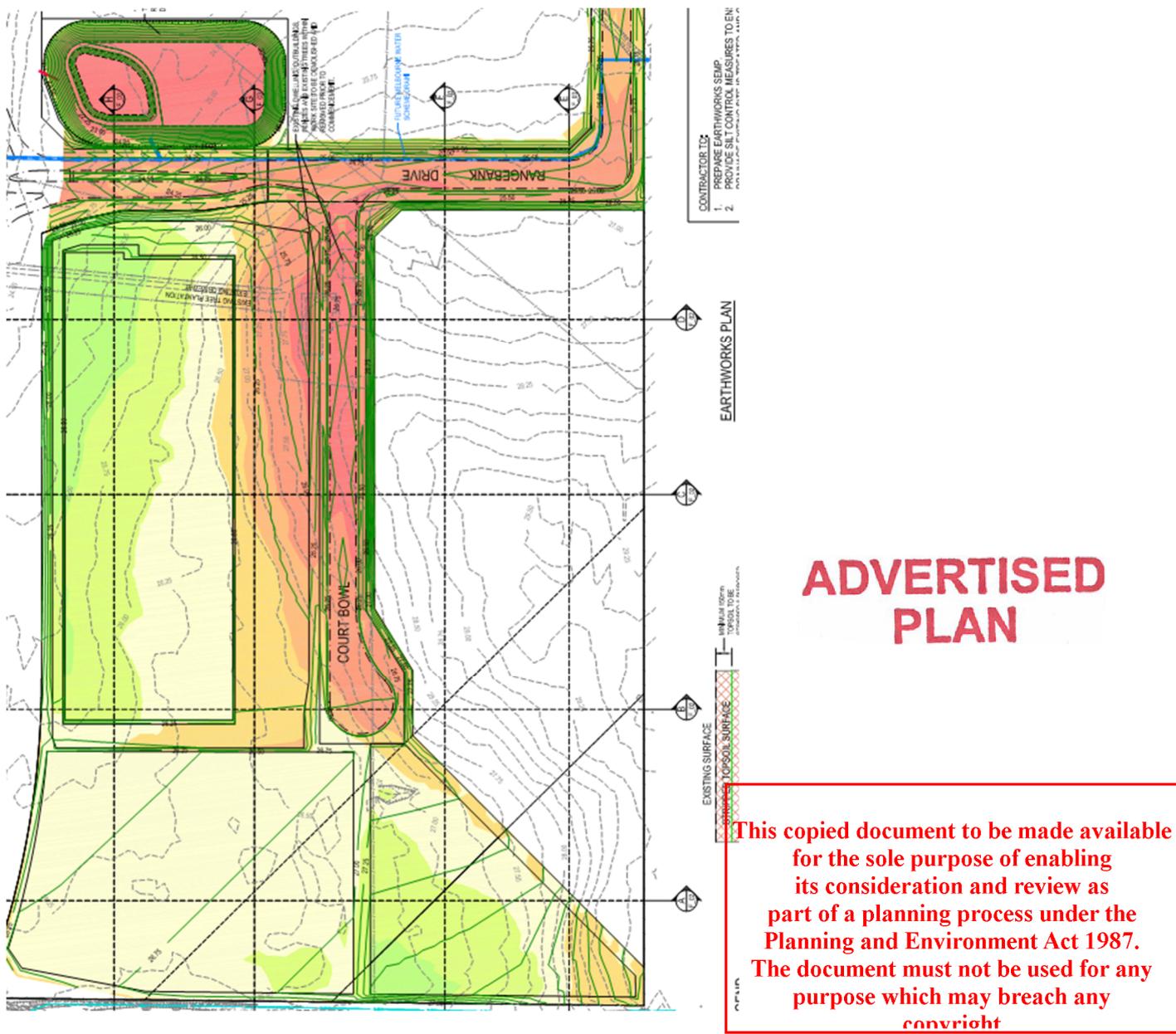


Figure 2: From Endorsed Earthworks Plan (Ref:5959.07 F\_01)

All background planning permit documentation is attached to this submission.

A Planning Permit application (PA21-0542) for development of two warehouses was lodged with Casey Council on 30/6/21. The warehouses are proposed to be located in the area bounded by Evans Road, Rangebank Drive and Battery Court, immediately to the west of the proposed BESS development. This application is currently being assessed by Council. The development plans are appended to this application.

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## 4.0 Proposal

The proposed Rangebank Battery Energy Storage System (BESS) is defined as a Utility Installation under the Casey Planning Scheme. It will occupy 3.983 hectares of land in the south-eastern quadrant of the site adjacent to the neighbouring Ausnet Terminal Station. The new facility will be located on either side of a future Ausnet transmission line easement traversing the site and will have access from the proposed court on the west side of the site.

The Rangebank BESS is to have a capacity of 200MW/400MWh which allows the battery to store 400MWh of energy from the Cranbourne Terminal and concurrently provide 200MW of energy into the grid for two hours as required.

### 4.1. Use and Development

The Rangebank BESS is modular in design and comprises a grid of equipment containing batteries, core transformers, inverters and a large transformer, along with several small service buildings located centrally within the site. The equipment will be located within a secure compound, mounted on concrete footings and surrounded by a crushed rock yard. Internal vehicle accessways are provided to enable access to all of the BESS equipment. The public road perimeters of the site, to the west and south, will be suitably landscaped.

The componentry of the Rangebank BESS can be generally described as follows:

- Battery storage units including battery cells, charge management and integrating electrical equipment,
- Inverter and MV Transformer Stations including inverters and medium voltage electrical transformers and switching,
- Underground 220kV high voltage reticulation connection to the eastern boundary, which ultimately connects the BESS to the neighbouring Ausnet terminal station,
- 220kV-33kV site substation including electrical transformers, switchgear / switch room and incoming and outgoing transmission lines,
- Underground electrical cabling, earthing and associated infrastructure,
- Relay / switch room,
- Storeroom for spares storage,
- Three kiosks for switch gear,
- Site parking (4 spaces), internal access roads and drainage, and
- Security and safety fencing and lighting.

The battery storage units are configured within a series of rows in an east west direction throughout the site. Each row contains the lithium batteries within ‘cube’ storage units, light poles, an inverter and a core transformer at the end of each row. The battery cubes will have a height of approximately 2.5 metres and will appear generally as per the following images. The light poles or lightening conductors will be erected at a height of approximately 6 metres to mitigate any potential damage to the battery equipment.

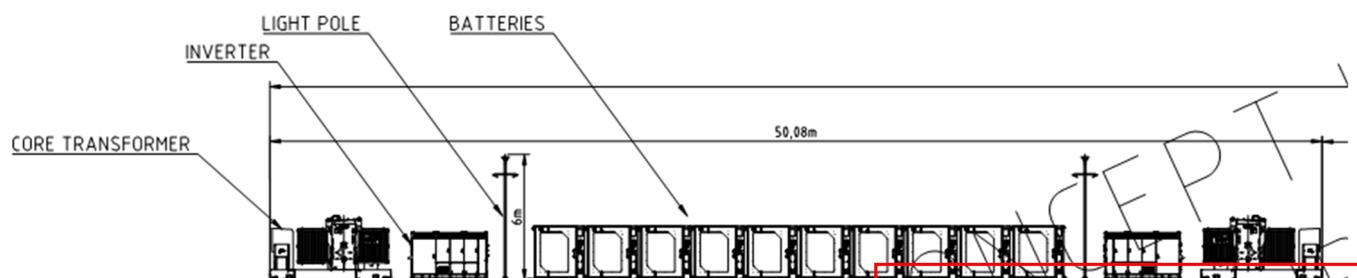


Figure 3: From Cranbourne BESS Planning Layout Sheet 3



Figure 4: Indicative image of Fluence Battery Cubes with Inverters (to left of image)



Figure 5: Typical strip footings for Battery and Inverter rows

The Battery Cubes, inverters and transformers will be mounted on strip footings with the surrounding area comprising gravel hardstand and generally contained within gravel access ways.

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The rows of equipment will be setback more than 16 metres from the property frontage with Battery Court, with a 4.4-metre-wide landscape setback behind a black colour coated picket fence. A cleared 10 metre buffer is provided around all of the equipment, with an access track within this setback.

The equipment will be setback 11 metres from the northern boundary interface with the proposed public parkland reserve, and similar colour coated palisade fencing will be erected along this boundary.

The battery equipment will be setback more than 10 metres from the Breens Road reserve (unmade) with a substantial 4.5 metre tall acoustic wall setback 5 metres from this frontage. A landscape strip is proposed within the site along Breens Road to enhance the appearance of the acoustic wall.

The main transformer is the largest structure in the development with a height of 8.4 metres. It is located well within the site, having setbacks of 95 metres to Battery Court and 75 metres to the northern boundary. The transformer will 'step up' or 'step down' electrical voltage for power transferring either to or from the Ausnet terminal. The transformer will be securely fenced and banded. Any stormwater within this area will be collected and treated by a Class 1 Oil Water Separator before discharging into the internal pipe network, as outlined in the *Stormwater Strategy*.

The proposed buildings within the site are comparatively small in scale and are located centrally to the south of the main transformer comprising –

- A Relay Room or Switch Room for on-site monitoring of the facility by way of automated HV protection equipment. The structure measures 15 metres by 4.3 metres with a height of 3 metres. The facility will be temperature controlled and likely constructed of colourbond.
- A Storeroom for spare parts measuring 10 metres by 12 metres with a height of 5 metres, constructed of Colourbond material. An airconditioned store will occupy part of the building.
- Three kiosks are proposed adjacent to the main transformer. These will measure 4 metres by 3 metres with a height of 2.9 metres. The kiosks will appear as metal cabinets.

The Site Use Plan prepared and lodged with this application provides the maximum footprint of the proposal. This is intended to provide flexibility in accommodating minor design and layout changes as required through the detailed design process.

## 4.2. Operating Hours

The battery is proposed to operate autonomously but with regular supervision, and will be in operational mode 24 hours a day, 7 days a week.

## 4.3. Maintenance

The battery plant will require a range of operations and maintenance activities performed including:

- Scheduled maintenance:
  - Inspecting battery systems, HVAC systems and security systems,
  - Cleaning and testing of battery and inverter units,
  - Undertaking high voltage electrical maintenance, and
- Corrective maintenance including fault rectification.

For scheduled maintenance, these activities will be undertaken on a rolling maintenance program basis during normal business hours, however, fault rectification and corrective maintenance tasks could be performed outside of these hours if required to make the site safe.

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#### 4.4. Staff

During the construction phase, it is anticipated that the peak workforce will be 80 people on site for construction purposes.

During day-to-day operations there will be no full-time staff located on site. It is anticipated that during scheduled maintenance one to two personnel will be on site. Sufficient car parking (4 spaces) has been provided adjacent to the workshop which will accommodate the required personnel. These parking spaces are larger than typical car spaces in order to accommodate maintenance vehicles.

#### 4.5. Security

A 2.1 metre tall black colour coated palisade fence will be located along the street frontage, and along the northern boundary with the proposed parkland. A 4.5 metre tall acoustic fence will be located around the southern part of the BESS on the southern, eastern and western boundaries. Other fencing will be constructed of 2.1 metre tall black colour coated chain mesh topped with three strands of barbed wire.

#### 4.6. Site Access

The site will be accessed from the proposed court via a crossover to be constructed at a width of approximately 7 metres to enable access for large vehicles carrying equipment from time to time. Accessways are provided around the battery infrastructure. An access track is proposed along the eastern boundary from north to south which will connect the northern and southern battery operations, across the unused Ausnet transmission easement.

#### 4.7. Landscaping

A comprehensive landscape plan prepared by Pollen Studio has been submitted to accompany this application. The landscaping has been developed concurrently with the landscape design for the parkland immediately to the north of the site, providing for an integrated planting solution for both sites.

Landscaping is shown along the frontage of the site behind a black colour coated palisade fence providing an attractive entrance to the site and offering some screening of the battery equipment.

Landscaping is provided on the south side of the proposed acoustic fence on the unmade Breens Road frontage, to enhance the presentation of the fence as viewed from the neighbouring residential area.

All landscaping is indigenous species and includes a mix of ground covers, small shrubs and trees to a mature height of up to 8 metres. Landscaping around the battery facility is limited by the need to create a 10 metre wide unvegetated buffer around the facility for fire protection purposes.

Refer *Landscape Concept Design Package*.

The proposed Public Open Space Reserve along the northern boundary of the property provides extensive planting adjacent to the northern boundary, negating the need for boundary planting within the site. The reserve has an area of 7100m<sup>2</sup> and depth of approximately 55 metres from Rangebank Drive and will provide for high quality visual amenity along this interface. Street tree planting will occur as part of the road construction works, and has been separately approved.

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#### 4.8. Acoustic Report

An *Acoustic Report* prepared by Marshall Day Acoustic assesses the potential noise impacts of the Rangebank BESS. The assessment considers the noise levels anticipated to be generated by battery cooling, inverters and transformers, at seven representative receiver locations. Three receivers are located on Breens Road to the south and south-east of the BESS site, three receivers in the residential area to the east of the Ausnet terminal, and 1 receiver to the west of the site.

Taking the limited background noise present into account, the report recommends several design measures to ensure that Noise Protocol noise levels are not exceeded. It is proposed that:

- Noise attenuators be installed in most of the battery units (other than some units in the northern part of the site),
- All inverters have in-plant attenuators, and
- A 4.5 metre tall noise barrier be installed along the Breens Road frontage, and return along the east and west boundaries of the southern section of the BESS.

The noise barrier is to have a minimum surface density of 12-15kg/m<sup>2</sup>. The proposed Acoustimax Modular Walls meet this requirement. (Refer to Guardian Wall Typical Details Dwg MW00000-TD-0)

The acoustic fence will be setback 3.26 metres from the southern property boundary within the site. The fence will be located approximately 23.26 metres from the rear/side boundaries of residential properties located on the south side of Breens Road. It is proposed the fence be finished in Dulux Moorland (muted green) to reduce its apparent visual bulk, and landscaping is proposed within the site on the south side of the fence to further enhance the appearance of the fence.

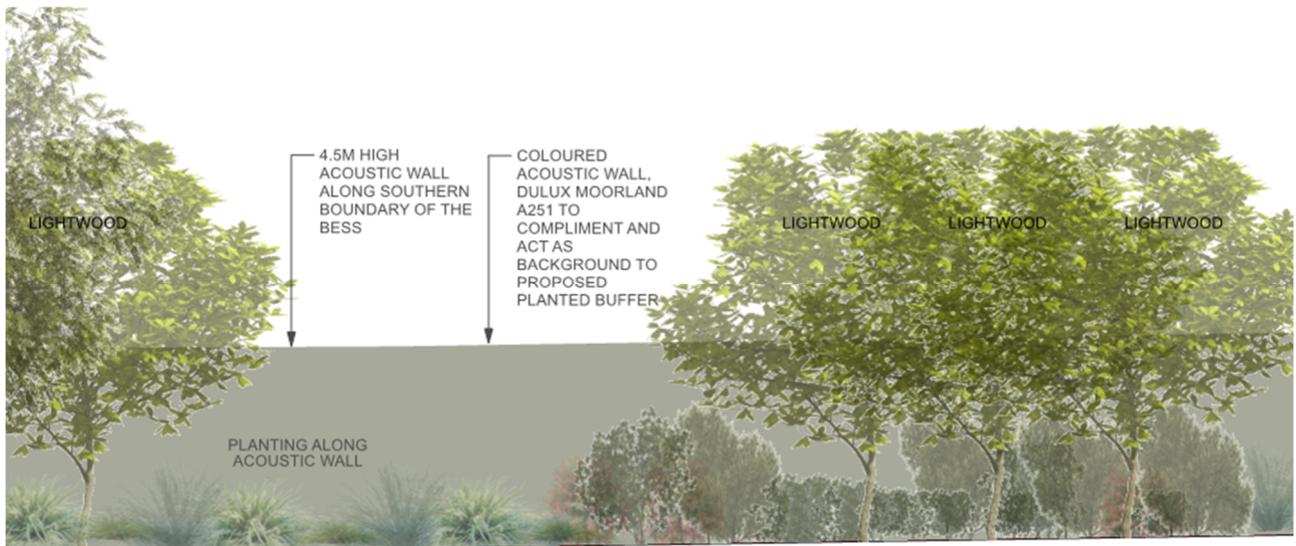


Figure 6: From Landscape Plan - Acoustic wall and planting

Accordingly, it is submitted that the BESS proposal will not create unacceptable noise impacts for neighbouring residential areas subject to the provision of the attenuators and noise walls, as outlined in the submitted *Acoustic Report*.

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#### 4.9. Preliminary Hazard Assessment

A *Preliminary Hazard Assessment (Aurecon June 2021)* identifies various potential hazards associated with the BESS operations and potential environmental hazards present in the vicinity, and outlines corresponding mitigation and management measures. The lithium-ion battery component is required to comply with the relevant requirements under the Dangerous Goods (Storage and Handling) Regulations 2012.

The operational hazards which include matters such as, short circuits, battery cell fires, dropping of batteries during installation and live contact with transformer, can be addressed through appropriate technical and management safeguards as outlined in detail in the report. The various safeguards proposed are as follows:

- Infrastructure will be provided for spill containment for management of fire water,
- Cooling systems be operated having regard to local conditions,
- A lightning study be undertaken and appropriate lightning measures to be implemented,
- Infrastructure will be located above the flood level (noting that the site is not within a flood prone area),
- Correct installation and testing of the facility will accord with *IEC 62619: Safety requirements for secondary lithium cells and batteries, for use in industrial applications*,
- Preparation of Asset Management Plans,
- Placarding of Dangerous Goods,
- Good housekeeping on site, along with
- Preparation of an Emergency Management Plan, Fire Management Plan and Emergency Information Book.

Fluence, the current proposed manufacturer and supplier of the BESS battery system, places high priority on safety management and minimising potential risk including that associated with fires.

Having specific regard to the proposed BESS battery technology, the Fluence system contains the following in built safety features,

- **Cube Enclosure:** The Fluence Cube is a modular, factory-assembled approximately 8x8x8 cube-shaped enclosure that is configurable with the latest energy storage technology and safety equipment. The Cube is designed for external access and cannot be entered. In the event of a fire, the Cube will electrically isolate itself and is designed to limit propagation to any adjacent Cubes. If a safety incident occurs, a fire strobe and alarm will be triggered to alert people that the sensors in the Cube detect an abnormal condition, and signage on the enclosure will alert first responders not to open the Cube.
- **Incipient Gas Detection:** The system includes gas detection technology designed to provide an alert to off-gassing events that may indicate abnormal system behaviour, including battery gassing prior to thermal runaway. Upon detection of incipient battery off-gases, the gas detection system will trigger a shutdown.
- **Fire Suppression:** The primary role of the fire suppression system is extinguishment of a non-battery fire before it spreads to battery cells. Upon detection of multiple smoke detection signals, the system will be stopped (if not already done) and fire suppression will be deployed.
- **Deflagration Panels:** The Cubes use batteries which have demonstrated non-propagation of single cell thermal runaway in UL 9540A testing. In the very unlikely event of propagating thermal runaway that causes batteries to release combustible gases, deflagration panels are built into every Cube to direct the force of any pressure up and away from humans. The pressure release serves to minimise structural and mechanical damage, and more importantly, to minimize the safety risk to operators or first responders. Each Cube contains deflagration panels compliant with NFPA 68.
- **First Responder Guidance:** Fluence provides first responder guidance and offers training for incorporation into project owners' site emergency action plans. First responder guidance is tailored to site specifics and includes descriptions of hazards as well as details on equipment and layouts of the site.

#### 4.10. Fire Management Plan

A *Fire Management Plan (June 2021)* prepared by Aurecon identifies appropriate fire mitigation measures for the facility which is located in a designated Bushfire Prone Area. These measures take into consideration the *Guidelines for Renewable Energy installations (CFA 2021)* and include:

- A 10 metre wide firebreak of non-combustible material (crushed rock) around the perimeter of all equipment incorporating a 4 metre wide access track (as shown on the plans),
- Clearance of at least 2 metres between the lowest branches and ground level of any vegetation screening,
- Provision of appropriate firefighting equipment,
- During any fire danger periods, where possible grass within 100 metres of the BESS should be maintained at less than 100mm, and
- Access to fire hydrants in adjoining roads.

The engineering design for Rangebank Drive and Battery Court includes three hydrants in Battery Court accessible for the BESS development.

It is considered the Fire Management Plan makes appropriate provision for managing fire risk and thereby reducing the potential for bushfire for fire to impact the facility.

#### 4.11. Stormwater Strategy

A *Stormwater Strategy* has been prepared for the BESS outlining stormwater management as follows:

- A minor drainage system will be installed comprising a subsurface pipe network designed to capture and convey all stormwater runoff generated from the catchment for rainfall events up to and including the 10% AEP storm for industrial catchments.
- The batteries themselves do not require a drainage connection. They sit atop strip footings, keeping them elevated from the surrounding crushed rock hardstand. The crushed rock hardstand will be graded to convey flows to the discharge location. Pits will be located intermittently to capture water and reduce the flow depth on the surface.
- The site has been divided into 3 catchments to minimise pipe sizes and point flows. These 3 catchments will each make an individual connection into the council drainage system in the locations shown. This aligns with the catchments allowed in the Battery Court design.
- Major flows will be conveyed across the hardstand to their discharge point at Battery Court. As opposed to localised connection points, the site will be graded to sheet the flow to lower scour risk in major events.
- Stormwater quality is addressed by bunding of the core transformers in each battery row and a large bund around the main transformer. A Class 1 Oil Water Separator will treat the banded areas prior to any discharge into the internal pipe network to remove the risk of hydrocarbon spill.
- There is limited opportunity to collect and meaningfully reuse rainwater within the site and thus no rain water tanks are proposed.

The *Stormwater Strategy* for the Rangebank BESS builds upon the *Stormwater Management Strategy Industrial Development, April 2021* prepared for the subdivision of the land. This strategy and associated engineering design have been approved by the City of Casey and Melbourne Water, and the works are contracted to commence. The strategy includes a Melbourne Water drain running east-west along Rangebank Drive, and a temporary retardation basin on the north-east corner of Rangebank Drive and Evans Road, until the downstream drain is constructed.

#### 4.12. Amenity Considerations

The Rangebank BESS is located in an emerging Business Park as provided for in the Cranbourne West Precinct Structure Plan. The large Ausnet Terminal Station is located along the entirety of the site's eastern boundary. The potential for the proposal to impact the amenity of either the future Business Park or Ausnet facility is low. The BESS will be set back some 50 metres from the proposed Rangebank Drive and the appearance of the equipment will be largely obscured by the planting in the Rangebank Park immediately north of the site. Along the proposed Battery Court frontage, the site will be landscaped and fenced with high quality black palisade fencing. It is not considered that the BESS will detract from other future developments within the Business Park. Traffic associated with the development once constructed will be minimal. The facility is clear in keeping with, and complements the adjacent Ausnet terminal.

The existing residential area to the south of Breens Road however, presents a sensitive interface to the site which requires appropriate consideration. Four single dwellings on large rural type allotments exist on Evans Road west of the site, and whilst acknowledging the presence of these dwellings, it is anticipated these dwellings will be progressively removed as the Business Park precinct develops, noting that numerous dwellings have already been demolished along this road.

The proposal has considered and appropriately mitigates potential for adverse impacts on the amenity of the southern residential area and other nearby dwellings as follows:

- The *Acoustic Report* advises that Noise Protocol noise levels are not exceeded at the nearby dwellings through the inclusion of noise attenuators within the battery equipment and by construction of a 4.5 metre tall acoustic wall around the southern portion of the battery.
- The *Preliminary Hazard Assessment* identifies potential hazards (as summarised in Section 4.9 of this report) associated with the battery infrastructure and proposes appropriate technical and management safeguards.
- The *Fire Management Plan* which supplements the *Preliminary Hazard Assessment* identifies the provision of a firebreak around the site, suitable access to fire hydrants, as well as a maintenance regime, and it is noted that the acoustic wall has a BAL fire rating of 29.
- The BESS facility, equipment and transformers will not be visible to the residential area as the southern portion of the site will be surrounded by the 4.5 metre tall acoustic wall. The wall will be finished in a muted green (Dulux Moorland) and supplemented by planting adjacent to the unconstructed Breens Road.

The fence will be setback 3.26 metres within the site and will be some 23.26 metres from the rear or side fence of dwellings on south side of Breens Road. This is a substantial distance and will ensure that the fence does not cause overshadowing or impose an excessive visual bulk on these properties. A muted green finish has been chosen as a recessive colour, trees to a mature height of 10-15 metres will be planted adjacent to the wall, and various flowering native plants are included in the landscape scheme, which will enhance the unmade road reserve.

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Figure 7: Detail from Landscape Plan of plants proposed along the Breens Road frontage.

South-east of the site, dwellings face towards the constructed section of Breens Road. The acoustic fence will in part be obscured from these dwellings by the vegetation at the west end of the road reserve and by the well established planting and mounding in the adjoining Ausnet land.

There will no traffic impact on neighbouring residents as there will be minimal activity at the site on a daily basis, other than during the construction phase of the development.

Should the BESS site instead be developed for commercial or industrial purposes it is considered highly likely that any buildings constructed building would exceed 4.5 metres in height. Warehouses are frequently 10 – 14 metres tall and such bulk is likely to be more substantial than that of the proposed 4.5 metre acoustic fence, and the otherwise low scale of the BESS development.

The Cranbourne West Precinct Structure Plan suggests a sensitive treatment be used along Breens Road and it is considered the proposed outcome, provides a suitable interface between the residential area and the Business Park.

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## 5.0 Subject Site and Surrounds

### 5.1. Subject Site

The subject site is commonly identified as 280 Evans Road, Cranbourne West and can be formally described as Lot 1 on Plan of Subdivision 823198L, and the BESS site is within Lot C on Plan of Subdivision 836956V (unregistered). The overall site is approximately 22.11ha in area and is of regular shape oriented in a north-south direction. The site is located on the south east corner of Thompsons Road and Evans Road, and extends southward to Breens Road.

The boundary measurements of the overall site are as follows:

Boundary	Metres
Thompsons Road (north)	304.80
Evans Road (west)	803.00
Breens Road (south)	304.82
East	807.88

Refer to enclosed copy of title for further details.

An easement (E-1) traverses the south-east corner of the site in a diagonal direction under PS836956V (unregistered). The easement will be in favour of Ausnet Transmission Group Pty Ltd for the purpose of powerlines. A s.173 Agreement required under Planning Permit PA20-0465 (as discussed in section 3.2) is registered on title.

A S.173 agreement is listed on title which pertain to the Development Levy and Public Open Space contributions and is discussed in section 3.2 of this report.

The site was, until recently, occupied by a single storey brick 1970's residence located towards the centre of the property with driveway access from Evans Road, with associated shedding and planted trees. At the time of writing, demolition of these structures had recently occurred in accordance with the appropriate approvals. The balance of the property is pasture, predominantly cleared of vegetation, and grazed by cattle.

The subject site presents as relatively flat farm land. The property slopes gently from a low point of 23.2 AHD near the intersection of Evans and Thompsons Road towards a rise located near the eastern boundary of 29.6 AHD approximately 190m north of Breens Road. The site is cleared of vegetation. The endorsed Streetscape Master Plan for the subdivision shows all vegetation on the site as removed.

The proposed development will be accessed via Rangebank Drive from the existing signalised intersection on Thompsons Road. A short section of Rangebank Drive south of this intersection has been constructed to provide access to the neighbouring Ausnet terminal. Further construction of Rangebank Drive is scheduled to commence in late 2021.

The Rangebank BESS is proposed use to occupy 3.983 hectares of the site in the south eastern quadrant of the lot, south of Rangebank Drive. The BESS site has a north south depth of approximately 327 metres, and maximum east-west width of approximately 131 metres, narrowing to the south, as shown in Figure 6. The power line easement lies within the BESS site. No equipment associated with the battery will be located within the easement, although an access track will run through the easement adjacent to the eastern boundary. The easement will be fenced.

The site comprises the higher land within the wider site with topography rising gradually from 28m AHD to 31m AHD from north to south across the length of the site.

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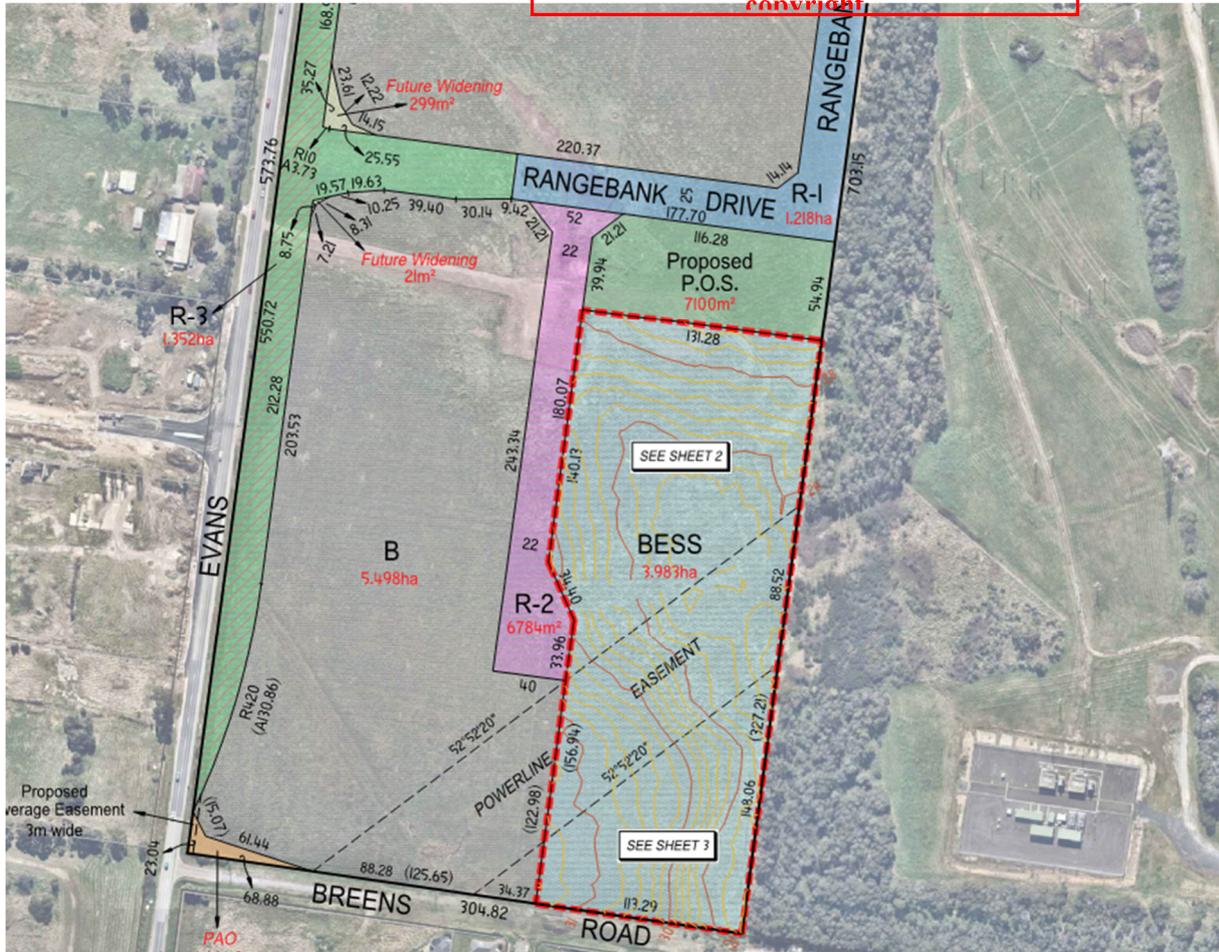


Figure 8: BESS Site from Site Plan Ref 5959.08 SPE01 V2 (Dark contour lines – 1m intervals)



Photograph 1: Subject site as viewed north from Breens Road reserve 1/8/21 (Note: Dwelling and trees now removed.)

## 5.2. Site Context

The subject site is located within the developing Cranbourne West precinct. It is advantageously located on the south side of a major arterial, Thompsons Road which has recently been upgraded by the Department of Transport (previously VicRoads), and is approximately 200m to the south west of the Merinda Park Station.



Photograph 2: Aerial image of site and surrounds as at 29<sup>th</sup> April 2021, as sourced from Nearmap,.

New development is limited immediately around the site at this time and surrounding uses can be described as follows:

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**North**

A signalised intersection on Thompsons Road provides excellent access directly into the site and the neighbouring Ausnet terminal to the east. The northern extension of this road provides access to the Merinda Park Station and undeveloped commercial land.



Photograph 3: Rangebank Drive looking north to Thompson Road intersection, access to Ausnet transmission terminal to right, 1/8/21.



Photograph 4: Looking south from Thompsons Road intersection into site, Ausnet terminal entrance to left, 1/8/21

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## East

The Cranbourne Terminal Station occupies a large parcel of land located along the entirety of the site's eastern boundary. The terminal station is fenced and a constructed mound is located within the Ausnet site close to the eastern boundary of the land. This mound is planted with semi-mature eucalypts. The planting is separated from the site by an unplanted and 4 metre wide fenced strip of land within the Ausnet site, as shown in the photograph below. The vegetation accordingly is well separated from the subject land.



*Photograph 5 : Revegetation in Ausnet land on mound. Fence to the left marks the boundary with the subject land.*

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**South**

Breens Road reserve is immediately south of the site. Seven dwellings are located on the south side of Breens Road, but do not face towards the road reserve, with either side or rear boundaries abutting the unmade road reserve.



Photograph 5: Breens Road looking east, south of BESS site, note side/rear of dwellings 1/8/21

The transmission easement within the subject site extends south of Breens Road, providing separation between the site and dwellings to the south-west.



Photograph 6: Breen Road in foreground looking south-west of BESS site, future transmission easement between dwellings and road reserve, 1/8/21

Breens Road is not constructed immediately to the south-east of the subject site with dwellings facing towards Breens Road. Well planted vegetation on mounding in the Ausnet land is immediately opposite these dwellings. Some vegetation exists in the road reserve at its termination adjacent to the BESS site.



Photograph 7: Breens Road to the south-east of the BESS site, 1/8/21



Photograph 8: Breens Road looking east, Ausnet land to left, 1/8/21

### West

Properties on the west side of Evans Road were typical rural residential allotments of 1.2 hectares to 2.4 hectares. Many of the dwellings have now been demolished in anticipation of future commercial/industrial development as proposed in the Cranbourne West Precinct Structure Plan. Casey Council is currently constructing Volk Road which will intersect with Evans Road west of the site (as evident in the submitted Site Plan).

A recently constructed multi-storey office is located on the south-west corner of Thompsons and Evans Road. Three dwellings remain on the lots south of this recent development at 305, 315 and 321 Evans Road. A dwelling at 295 Evans Road is currently surrounded by construction fencing and is expected to be demolished, in accordance with a planning permit that has been granted for a timber store and warehouse on that land.

## South West

A Melbourne Water retarding basin is located to the south west, on the west side of Evans Road, within a large parcel of land.

### 5.3. Future Context - Cranbourne West PSP

The following extract from the Cranbourne West Precinct Structure Plan shows the subject site and the proposed nature of land uses around the site.



Figure 9 – Extract from Cranbourne West PSP, Plan 2 Future Urban Structure. Subject site outlined in red.

The Cranbourne West PSP provides for:

- Development of the land as a Business Park,
- Road widenings along both Thompsons and Evans Road,
- An internal industrial road,
- T-intersection with Evans Road,
- Electricity transmission easements (the north-south easement has been removed by Ausnet),
- Passive public open space of 7100m<sup>2</sup>, and a
- Broiler farm buffer (broiler farm no longer in operation).

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The intersection of the industrial road (Rangebank Drive) with Thompsons Road has been upgraded by VicRoads adjacent to the eastern boundary, rather than offset from this boundary as illustrated in the PSP above. This location

aligns with approvals associated with 340 Evans Road to the north and is an integral part of the recently completed Thompsons Road upgrade works.

The subject land is located within a future employment precinct. Land opposite the site on Thompsons Road is to be developed as a Business Activity Centre close to the railway station, whilst land on the west side of Evans Road is also proposed to be developed as a Business Park, with a Mixed Use area south of Volk Road.

Breens Road is the boundary of the Cranbourne West PSP in this vicinity. The PSP does not propose construction of the road, nor is it a listed infrastructure item in the *Cranbourne West Development Contribution plan (amended August 2017)*, although provision is made for a signalised intersection at the corner of Breens and Evans Road with Breens Road extending to the west of the intersection.

Casey Council advised during the processing of the recent subdivision application that the flaring for the Breens Road intersection within the subject site did not need to be provided as there was no certainty that the intersection would be constructed. The western leg of Breens Road may not be constructed as these properties will have access to Volk Road to the north. Accordingly, in the short to medium term it is not expected that Breens Road will be constructed.



Figure 10.: Extract from Cranbourne West PSP, Plan 13 Road Network. Arrow identifying Breens Road location

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## 6.0 Planning Assessment

### 6.1. Permit Triggers

A planning permit is required under the following provisions of the Casey Planning Scheme;

- Clause 34.02-1 – a permit is required to use the land for the purpose of Utility Installation.
- Clause 34.02-4 – a permit is required to construct or carry out works.

A Utility Installation includes the following:

*Land used to transmit, distribute or store power, including battery storage.*

### 6.2. Urban Growth Zone

The subject land is located within the Urban Growth Zone – Schedule 1 (Cranbourne West Precinct Structure Plan) of the Casey Planning Scheme. The purpose of this zone includes:

- *To manage the transition of non-urban land into urban land in accordance with a precinct structure plan.*
- *To provide for a range of uses and the development of land generally in accordance with a precinct structure plan.*
- *To contain urban use and development to areas identified for urban development in a precinct structure plan.*

Under Clause 37.07-9 any permit granted must be generally in accordance with the precinct structure plan applying to the land. As will be shown in this submission, the proposal is generally in accordance with the Cranbourne West Precinct Structure Plan, and in particular, embraces the Utility and Energy objectives of the PSP which propose –

- *To provide for more environmentally-responsible infrastructure provision and resource management. . .*
- *To implement sustainable technologies, land management and building methods to reduce resource consumption p.40*

Under the Table of Uses of the Urban Growth Zone a permit required use must comply with any condition opposite the use in the ‘applied zone’ and any condition or requirement specified in the zone or the precinct structure plan.

Pursuant to Schedule 1 of the Urban Growth Zone, the applied zone for the subject site, which is identified as Business Park in the Cranbourne West Precinct Structure Plan, is the Commercial 2 Zone (Clause 34.02).

It will be shown that the Rangebank BESS proposal is consistent with the objectives of the Urban Growth Zone, Precinct Structure Plan and Commercial 2 Zone, in providing an appropriately located commercial service/utility installation within the emerging Rangebank Business Park. It will provide metropolitan and state wide benefits by establishing a high technology energy storage facility, taking advantage of the site’s location immediately adjacent to the large Ausnet Transmission Station.

The detailed and considered BESS proposal shows that potential amenity impacts will be minimised through measures outlined in the *Preliminary Hazard Assessment* and *Acoustic Report*, including noise attenuation, and construction of an acoustic wall within the southern boundary of the site, which will be further enhanced by suitable landscaping.

An application that is generally in accordance with the PSP, is exempt from the notice requirements of section 52(1)(a), (b) and (d), the decision requirements of section 64(1), (2) and (3) and the review rights of section 82(1) of the Act, as per clause 37.07-13 of the Urban Growth Zone. It is our submission that the proposal is generally consistent with the zone and PSP provisions, and accordingly a permit may be granted and the application is exempt from notification.

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Application requirements for planning permits are specified in Clause 2.6 of the Schedule and are discussed in the following table. The various documents were submitted as part of the application for Planning Permit PA20-0465 for subdivision of the land and considered as acceptable by Casey Council. None of the listed reports raise specific concerns that need to be further explored as part of the BESS permit application.

Application requirement	Report	Comment
Flora and Fauna survey	A Flora and Fauna Assessment, 280 Evans Road, Cranbourne West, Practical Ecology, May 2013	This report did not identify any native vegetation in the area which is now proposed as the BESS site. All vegetation around the former dwelling is shown as removed under the endorsed Streetscape Master (PA20-0465) and vegetation removal has occurred.
Native Vegetation Plan	Not applicable	Not applicable
Hydrogeological Assessment	Environmental Report – Hydrogeological Site Investigation Area A, 280 Evans Road Cranbourne West, LR Pardo & Associates, November 2013	This report found the land to be suitable for industrial and commercial use, although a perched water table was noted within the site. A geotechnical investigation of the site was recommended prior to development, to further understand the engineering properties for foundation materials. The BESS structures will not be substantial and deep footings are not required. The battery will be located on strip footings, and as such no further geotechnical reporting is considered necessary to support this planning permit application.
Site Assessment of the potential for contaminated land	Environmental Report – Limited Environmental Site Investigation, 280 Evans Road Cranbourne West, LR Pardo & Associates, October 2013	The site investigation and associated laboratory analysis found none of the reported analytic concentrations exceeded the Health Investigation Levels, and accordingly the site was considered suitable for industrial/commercial use.
Transport Impact Assessment Report	<i>Traffic Engineering Assessment, 280 Evans Road, Cranbourne West</i> , letter prepared by Traffix Group, 11/9/19	The background analysis indicates the overall site will generate in the order of 4700vpd under full development. Seventy percent of the traffic will make use of the Thompsons Road signalised intersection, whilst the balance will utilise Evans Road. The internal road is considered to accord with the parameters outlined in the PSP. The BESS will generate minimal traffic on an ongoing basis, with traffic largely limited to maintenance vehicles.
Infrastructure Plan	Endorsed Public Infrastructure Plan (PA20-0465).	Public infrastructure (land, roads and public open space) will be provided by the land owner in accordance with the s.173 agreement applying to the land, as discussed in section 3 of this report.
Detailed Plans & Reports addressing the proposal and how the proposal responds to the PSP and how the proposal integrates with adjoining land and other areas.	Comprehensive background reporting is provided to accompany this application.	The <i>Acoustic Report</i> and <i>Preliminary Hazard Assessment</i> show the proposal gives detailed consideration to surrounding development, and in particular residential properties. Notably the proposal builds upon the infrastructure advantage provided by the adjoining Ausnet Major Transmission Terminal.

The listed reports and documentation are submitted as part of the background documentation for this application.

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General requirements for all planning permits are listed in 4.0 of Schedule 1 and addressed below. Most items have been addressed by way of Planning Permit PA20-0465 for the subdivision of the land.

General Requirements	Comment
Land required for community facilities must be vested....	Not relevant to site
Land required for public open space must be transferred or vested in Council.	The public open space immediately north of the BESS is subject of a s.173 agreement and its vesting is anticipated in April/May 2022 when the current Stage 2 subdivision is completed. The s.173 agreement and subsequent Council correspondence allows for the BESS permit to precede the vesting of the land.
Land required for road widening...	As above, land required for the Evans Road widening will be addressed as part of Stage 3 of the subdivision. The s.173 allows for the BESS permit to precede the provision of the road widening.
Stormwater Management – an agreement must be established for maintenance of wetlands on public land	Not relevant as no wetlands are proposed on public land. A temporary retardation basin is proposed on private land as approved under by the City of Casey and Melbourne Water under PA20-0465.
Land required for drainage facilities must be transferred to drainage authority at no cost no cost and landscaped appropriately.	No land is required to be transferred.
Tree reserves	Not relevant to site
Equalisation of open space provision	The public open space within the land is subject of a s.173 agreement and an equalisation payment will be due to that land owner.

An assessment of the BESS against the provisions of the Precinct Structure Plan is provided in section 6.2.2.

### 6.2.1. Commercial 2 Zone

The Commercial 2 Zone is the ‘applied zone’ under the Schedule 1 to the Urban Growth Zone applying to the land. The purpose of this zone is:

- *To encourage commercial areas for offices, appropriate manufacturing and industries, bulky goods retailing, other retail uses, and associated business and commercial services.*
- *To ensure that uses do not affect the safety and amenity of adjacent, more sensitive uses.*

The Rangebank BESS is a commercial use, albeit a utility installation, which builds upon the locational advantage adjacent to a major transmission terminal. Its approval will enhance the capacity of the State electricity grid for a plethora of commercial and other electricity consumers including those at and beyond the site. The detailed reports submitted indicate that potential amenity impacts have been considered and can be appropriately addressed. The location of the BESS will not detract from development of the Business Park by other commercial uses. Whilst utility installation is not specifically listed in the objectives of the zone its inclusion with the table of uses, indicates that utility installation can be located in commercial areas subject to meeting the zone provisions.

Clause 34.02-1 Table of Uses determines that a permit is required to use the land for the purpose of Utility Installation in the Commercial 2 Zone and under 34.02-4 a permit is required to construct or carry out works.

Under Clause 34.02-2 a use must not detrimentally impact the amenity of the neighbourhood by way of transport of materials to the land, appearance or emissions. The application requirements of the zone are tabulated below:

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<b>Clause 34.02 Application Requirements for Use</b>	
<b>Purpose of use and types of activities to be carried out</b>	Utility installation (Battery) - Refer to description of proposal in section 4.0 of this report
<b>The likely effects on any adjoining land including:</b>	
<b>noise levels</b>	Noise is addressed in detail in the accompanying <i>Acoustic Report</i> , and noise protocol levels at the nearest dwellings are met with various noise attenuation methods in place.
<b>traffic</b>	Traffic generated by the facility will be minimal with only maintenance vehicles attending the site.
<b>hours of delivery and despatch</b>	Not relevant
<b>hours of operation</b>	The site will be operational 24/7.
<b>light spill</b>	The southern 4.5 metre tall acoustic wall will ensure there is no light spill onto neighbouring residential properties.
<b>Solar access and glare</b>	The proposal will not impact the solar access of neighbouring properties given the separation of these properties to the acoustic fence by more than 23 metres. The fence will prevent any glare from equipment within the facility impacting neighbouring dwellings.
	The <i>Preliminary Hazard Assessment</i> provides a comprehensive assessment of the proposal and provides appropriate management protocols and attenuation measures. The visual impact of the facility on neighbouring dwellings will be addressed by the provision of the acoustic fence, which will be appropriately finished and landscaped and suitably distanced from neighbouring properties.
<b>Means of maintaining areas not required for immediate use</b>	The central easement will not be used as part of the development but will be kept neatly mown and maintained by the land owner.
<b>If an industry of a warehouse .....whether Works Approval, Waste discharge Licence, notification under Dangerous Goods Act 1995 is required, or a fire protection quantity under Dangerous Goods (Storage &amp; Handling) Regulations is exceeded.</b>	This clause is technically not relevant as the use is not industry or warehouse, however we can advise that fire protection quantity under the Dangerous Goods (Storage & Handling) Regulations will be exceeded for Lithium Ion and Transformer Oil. This is detailed in section 4.1 of the <i>Preliminary Hazard Assessment</i> .

It is considered the application requirements for buildings and works have been met by way of the submitting plans and documentation, noting that it requested that the planning permit require submission of fully detailed construction drawings for endorsement, following the issue of the permit.

This comprehensive proposal fully addresses the requirements of the Commercial 2 Zone and will be suitably located within this zone having regard to the objectives of the Zone and amenity of surrounding properties.

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### 6.2.2. Cranbourne West Precinct Structure Plan

The Cranbourne West PSP is a comprehensive document which provides a detailed framework for future development. The Urban Growth Zone states that a permit granted must be ‘generally in accordance with the precinct structure plan’ applying to the land.

The Vision for the Precinct Structure Plan includes the following:

*Development in the Cranbourne West Precinct will set new benchmarks in best practice urban development. It will ‘complete’ the existing community of Cranbourne West to form a well serviced, socially equitable neighbourhood with a comprehensive range of social infrastructure. It will enrich the employment opportunities available within the City of Casey by offering opportunities for a wide range of business types.*

*Development of large residential and employment areas side by side within the Precinct presents a design challenge. The vision therefore is to produce an integrated living and working environment that fosters a diverse and dynamic blend of lifestyle and commerce opportunities, unprecedented in an outer suburban location.....*

*Cranbourne West will become known as a leading example of best practice in sustainable urban development. This will set it apart from other developments and lift the identity of Cranbourne, attracting residents, businesses and visitors who place a premium on ecologically, socially and economically responsible lifestyles.*

The Cranbourne BESS provides the opportunity for precinct to be the first in the metropolitan area to include a large-scale battery, offering a highly sustainable and best practice energy solution. This application shows the development can sit appropriately within the proposed Business Park setting and be considerate of the neighbouring residential area. Accordingly, it is considered the proposal embraces the vision of the PSP.

The following table addresses the relevant objectives and guidelines from the PSP.

4.1 Image and Character	Response
To provide an attractive treed landscape that extends Cranbourne’s treed image into the Precinct	The Landscape Concept Plan includes trees along Battery Court and Breens Road frontage. A Landscape Plan has been approved for the adjoining park which shows screen planting along the northern boundary of the BESS.
4.3 Employment and Activity Centres	Response
Jobs	
To provide diverse employment opportunities for Cranbourne, Casey and the wider sub region To deliver in the longer term a ‘smart and skilled’ employment area that complements, rather than replicates, industrial development in the Dandenong South Employment Area. To provide a mix of lots sizes and environments for employment land that can accommodate variations in industry needs over the medium and longer term. To develop a high amenity, high access, treed, green and landscaped employment area	The Cranbourne BESS provides a significant opportunity to establish a ‘smart’ facility in this precinct along with related employment opportunities both on and off site associated with battery development and maintenance. The BESS proposal was not anticipated at the time of writing the PSP however the PSP acknowledges the need to accommodate changes to employment/industry needs over time. The BESS is one such emerging land use which will have wide ranging benefits for industry beyond this precinct.
To ensure that factors that influence the uses, success in servicing the region and overall success of the development are enhanced through site design	Careful consideration has been given to the BESS layout to ensure an efficient energy storage facility, building upon the advantage presented by the adjoining Ausnet terminal. The success of the BESS facility will have wider benefits for the region by increasing energy storage capacity and supply.
Employment Interface	

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To ensure that non-residential development does not have adverse impacts on the amenity of adjoining areas, in particular residential areas.	The <i>Preliminary Hazard Assessment</i> and <i>Acoustic Report</i> supplemented by the landscaping scheme indicate the use can be accommodated adjacent to the existing residential area south of Breens Road.
To encourage a range of uses which are sensitive to the adjoining residential area including office/warehouse combinations for service industries, offices, some limited retailing...	The BESS energy storage facility was not a use contemplated in 2012 at the time the PSP was prepared, but the application shows it is sensitive to the adjoining residential area.
<b>4.3.3. Planning and Design Guidelines for Employment Areas</b>	<b>Response</b>
<b>General</b>	
Development must actively address and provide passive surveillance to all adjoining public streets and public open spaces, including retarding basins, vegetated waterways and linear parks.	The adjoining public open space and Battery Court will be visible from within the BESS facility, with landscaping enhancing the appearance of the facility on boundaries but not excluding outward views.
The highest standards in environmentally sustainable design should be achieved to ensure protection of values the community holds and to foster a positive place to work.	The BESS will achieve significant environmental benefits at a regional and state level by supplementing the electricity grid through the timely storage and release of electricity. The impervious nature of most of the site will ensure that minimal stormwater run-off is generated. (The subdivision design includes a temporary retarding basin.)
<b>Site Design</b>	
An open street character should be promoted with security fencing recessed behind the alignment of the building façade to protect storage areas and limit access to the site. A translucent type of fencing is promoted with the use of tubular steel frames, or of similar material. Chain link fencing is to be avoided. Any front fencing should be of high quality and integrated with the design of the building, or screened by landscaping.	Due to the nature of the BESS facility secure fencing is proposed on the street frontage. Landscaping will enhance the appearance of the facility. High quality black colour coated palisade fencing is proposed along the street frontage, and is integrated with landscaping.
Servicing areas and most on-site car parking should be located behind or to the side of buildings.	Servicing areas and a small car park are located central to the site.
<b>Building Design</b>	
<i>The building design elements of the PSP are generally not relevant to the proposal as the facility takes the form of a dispersed utility installation rather than a building.</i>  Building materials should be high quality and durable. Fencing and walls for security purposes should have positive impacts on the streetscape and other public domain areas.	All construction materials used in the BESS proposal will be durable and able to cope with all weather conditions.  The palisade and acoustic fencing and associated landscaping is designed to enhance the adjoining streetscape.
<b>Landscape Design</b>	
Front setbacks should be attractively landscaped in a consistent theme.	An attractive indigenous landscape scheme is proposed along the street frontages.
<b>Resource Conservation</b>	
Development should incorporate a number of energy efficiency measures and initiatives reflecting current best practice that are the most appropriate and cost effective for the specific design, with a view to the built form being more energy efficient in the long term	The BESS proposal will employ cutting edge energy storage technology throughout the facility.

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Development should incorporate water reuse and conservation measures. Initiatives such as rainwater tanks for toilet flushing should be incorporated.	The on-site buildings are very small and do not justify inclusion of rain water re-use. All drainage on the site will be directed to a temporary retarding basis in the subdivision.
Development should facilitate waste recycling and provide adequate storage space for recycling bins.	All waste generated at the facility will be disposed in an appropriate manner.
Streetscape and other public realm treatments must be of a high quality, robust, easy to maintain and repair, and conform to a consistent theme, to the satisfaction of the responsible authority.	As above, well considered landscaping is proposed on the Battery Court and Breens Road frontages.
<b>Business Park</b>	<b>Response</b>
A sensitive design response must be delivered on the northern side of Breens Road within Property No. 44 to protect the residential amenity of properties to the south.	Detailed consideration has been given to the amenity of these properties by way of the <i>Acoustic Report</i> and <i>Preliminary Hazard Assessment</i> . A 4.5 metre acoustic wall will be constructed around the southern portion of the BESS and enhanced with appropriate landscaping to protect the amenity of the dwellings on the south side of Breens Road.
Large footprint office buildings and office/warehouse/manufacturing combinations should be directed to this area with a focus on white collar type employment.	The immediate proximity of the Ausnet terminal encourages the location of a storage battery on this site. It is anticipated that the balance of 280 Evans Road will be developed for the listed uses.
This area of the Precinct should be developed as a 'skilled' precinct to attract highly technical and diverse businesses.	The BESS presents an innovative and highly technical use of the land which will make a positive contribution to resource use in the City of Casey, and will require highly skilled management and maintenance.
Development should generally be high density but medium rise with landscaped setbacks and shared car parking including some under cover parking.	The BESS proposal provides for intensive use of the land albeit of a different form to a typical Business Park building.
<b>4.6.3. Transport and Movement – Planning and Design Guidelines</b>	<b>Response</b>
<b>Road Network</b>	
All roads must make provision for emergency vehicle and waste collection vehicle access	The internal subdivision roads have been designed to ensure that they are able to accommodate emergency vehicles, and the 6m wide crossover into the site will ensure suitable site access.

It is considered the Rangebank BESS is generally in accordance with the vision and relevant provisions outlined in the Cranbourne West Precinct Structure Plan, contributing leading edge resource conservation in the form of electricity storage technology in the emerging Rangebank Business Park. Whilst a utility installation use on the land was not foreseen in the PSP, it is a permitted use under the applied Commercial 2 Zone, and encouraged by the objectives of the Utility and Energy objectives of the PSP;

- *To provide for more environmentally-responsible infrastructure provision and resource management...*
- *To implement sustainable technologies, land management and building methods to reduce resource consumption... p.40*

It builds upon the unique opportunity presented by the adjoining Ausnet terminal to provide an energy storage facility which will have significant benefits for the metropolitan area, and in particular, the energy demands of industry in the south-east. The facility responds to key design guidelines set down in the PSP including streetscape presentation, and appropriately considers the amenity of the adjoining residential area in Breens Road, as demonstrated by the comprehensive *Acoustic Report* and *Preliminary Hazard Assessment*, which includes the provision of an acoustic fence, and landscaping addressing this sensitive interface.

### 6.3. Overlays

The subject land is partly covered by the Public Acquisition Overlay (Schedule 3), the Specific Controls Overlay (Schedule 10) and Development Contributions Overlay (Schedule 12).

The Public Acquisition and Specific Control Overlays do not impact the area of the BESS and are therefore not relevant to the application.

The payment of Development Contributions is addressed by the recently executed s.173 agreement which will require the land owner to pay contributions.

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## 7.0 Strategic Planning Policy Assessment

### 7.1. Planning Policy Framework (“PPF”)

The Planning Policy Framework (PPF) is in place to ensure that the objectives of Section 4 of the Planning and Environment Act 1987 are implemented through appropriate land use and development planning policies. These policies incorporate environmental, social and economic factors that contribute towards the achievement of net community benefit and sustainable development.

The following policies are of relevance to the current proposal:

- Clause 13.02-1S – Bushfire Planning - *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

A *Preliminary Hazard Assessment* and *Fire Management Plan* have been prepared by Aurecon addressing the relevant legislation including the *CFA Guidelines for Renewable Energy Installations*. The applicant and equipment supplier, Fluence, have a high priority on maintaining the safety of the operation and will implement a range of measures to mitigate the risk of fire. This includes a 10 metre fire break of non-combustible crushed road material around all plant and equipment and maintaining all grassland to a height of less than 100mm within 100 metre of the facility.

- Clause 13.05-1S – Noise Abatement - *To assist the control of noise effects on sensitive land uses.*

An *Acoustic Report* prepared by Marshall Day Acoustics accompanies this application, and outlines the design measures that will be implemented to ensure that any noise generated by the facility does not exceed Noise Protocol noise levels in nearby residential areas. Measures include equipment attenuation and construction of a 4.5-metre-tall acoustic wall around the southern boundaries of the BESS.

- Clause 13.07-1S – Amenity and Safety - *To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.*

The detailed acoustic and risk management reporting undertaken identifies a range of measures to be implemented to ensure community amenity is not unduly impacted. The proposal further includes landscaping along the Battery Court frontage and around the southern boundary of the proposal. The owner of the site has proposed a landscape scheme for the adjoining parkland to the north which will provide further vegetative screening for the development.

It is considered the utility installation is an appropriate use within the proposed Business Park and can occur without imposing risks to community safety. The BESS facility will in no way impact the potential for further development within the Business Park, and the electrical storage system will broadly be of benefit to electricity consumers within the site and elsewhere in the region.

- Clause 15.02-1S – Energy and Resource Efficiency - *To encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.*

The proposed utility installation will contribute to efficient distribution of energy at the Cranbourne Terminal Station providing a wider net community benefit of stabilising the grid during times of high demand. This will directly benefit the community by improving electricity reliability in the municipality.

- Clause 15.03-2 – Aboriginal Heritage - *To ensure the protection and conservation of places of Aboriginal cultural heritage significance*

The land is within an area of cultural heritage sensitivity and the proposal constitutes a high impact activity. A Cultural Heritage Management Plan 128974 was prepared for the site in 2014 (amended 2019). The CHMP allows for a broad range of uses to occur on the site in accordance with the applicable Planning Scheme provisions as follows:

*Whilst the future use of the activity area (industrial subdivision and industrial and commercial development) is known, the exact development footprint (such as the location of buildings, footpaths, utilities, roads, etc.) is not. As such, for this subdivision the “description of the use of development of each lot permitted by the relevant planning scheme” is used to describe the activity (sch.2 cl.6 (2)(b) Aboriginal Heritage Regulations 2007). Presently, the activity area is subject to City of Casey’s Urban Growth Zone (UGZ1) and its associated Schedules. Accordingly, as permitted by the Casey Planning Scheme the use and development of the land may include, but is not limited to, the following: industry, office, place of assembly, retail premises, warehouse, service station and emergency facilities.*

*Future subdivision of the lots will be determined by tenant requirements and will be conducted on a ‘case by case’ basis. Final and precise depths of cut and fill and founding depths of utilities and buildings are dependent on final building designs following subdivision, building regulations and engineering designs and cannot be provided here. However, it is anticipated that such activities will impact upon any former buried land surfaces to a maximum of 2m to an indicative depth of 6m, which may change upon finalisation of the footprint, depth over the entire activity area (sch.2 cl.6(1)(b) Aboriginal Heritage Regulations 2007). (p.6)*

Accordingly, it is submitted that the use of Utility Installation, which is a permit required use under the Commercial 2 applied zone is accommodated by the description of the activity. A full copy of the CHMP is provided with this application

The salvage specified under the CHMP has since been undertaken and completed by Tardis@Archaeology and the Salvage Report dated 4/6/21 is provided for reference. The location of the salvage is within the area of the proposal.

Recommendation 2 of the CHMP requires that prior to the commencement of works associated with any activity construction staff must be made aware of the potential for unexpected Aboriginal cultural heritage during works on site.

## 7.2. Local Planning Policy Framework (“LPPF”)

The Local Planning Policy Framework (LPPF) is comprised of the Municipal Strategic Statement (MSS) and Local Planning Policies. The elements of the Local Planning Policy Framework including Municipal Strategic Statement relevant to this proposal include:

- Clause 21.04 – Environment – the relevant strategy: *Embrace new green technologies which lead to improved energy efficiency and environmentally sustainable outcomes.*
- Clause 21.18 – Cranbourne West - *To develop a new industry and business park to improve economic development and employment opportunities within Cranbourne West and the wider Cranbourne region that is sustainable, well landscaped and has high levels of amenity and accessibility.*

The battery is located within the Cranbourne West PSP proposed Business Park precinct and will be the first large battery to be developed within an urban environment. The battery will directly contribute to the energy supply

throughout the City of Casey and assist in stabilising the grid. This will improve the energy efficiency of the Cranbourne Terminal Station.

There will be employment opportunities created through the development of the battery and direct economic and community benefits for the municipality. The perimeter of the battery site will be strategically landscaped to ensure that it integrates well within a business park environment and the public open space to the north of the site.

### 7.3. Provisions That Require, Enable or Exempt a Permit

#### 7.3.1. Clause 52.06 – Car Parking

Pursuant to 52.06, car parking must be provided on site to the satisfaction of Council.

Whilst there is no specific car parking requirement stipulated for the proposed use, it is proposed four (4) car spaces be provided onsite. This is to ensure that the staff are able to park on site as required for maintenance purposes and this is considered to be ample car parking space for the proposed operation. This level of parking will be adequate as no more than two staff are expected on site at any one time. The size of the car parking spaces 4.0 x 4.9 metres exceeds the minimum dimensions specified in Table 2 of Clause 52.06-9, as staff may arrive in larger maintenance type vehicles.

### 7.4. General Requirements and Performance Standards

#### 7.4.1. Clause 53.10 – Uses with Adverse Amenity Potential.

This clause identifies uses which if not appropriately designed or located may cause offence or risk to the neighbourhood. Neither Utility Installation or a battery storage system are listed within this clause. The applicant however, has prepared a detailed Preliminary Hazard Risk Assessment and will implement measures to ensure any potential amenity impacts are ameliorated.

#### 7.4.2. Clause 53.13 – Renewable Energy Facility (Other than Wind Energy Facility)

The purpose of this clause is to *facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area.*

Whilst the battery itself is not a renewable energy system, it is capable of storing excess energy from renewable energy sources within the municipality. It will not have any significant adverse amenity impacts on the surrounding area given acoustic and risk management provisions, and the landscaping design has been carefully considered to ensure that the facility is screened and presents as a visually appealing development. It is strategically located west of the Cranbourne Terminal and therefore, able to contribute to the energy reliability in the City of Casey. The proposal will not impact the environment or biodiversity of the area given that the site is generally void of vegetation and no native vegetation is required to be removed as part of this proposal.

#### 7.4.3. Clause 53.18 – Stormwater Management in Urban Development

The purpose of the clause is to achieve appropriate stormwater management for development sites to ensure public safety in storm events and to protect the quality of downstream receiving waters, as well as encouraging stormwater reuse. It is noted that the site has limited impervious surfaces and no large roofed areas thus reducing the potential for substantial concentrated drainage flows.

A *Stormwater Strategy* has been prepared for the BESS outlining stormwater management as follows:

- A minor drainage system will be installed comprising a subsurface pipe network designed to capture and convey all stormwater runoff generated from the catchment for rainfall events up to and including the 10% AEP storm for industrial catchments.
- The batteries themselves do not require a drainage connection. They sit atop strip footings, keeping them elevated from the surrounding crushed rock hardstand. The crushed rock hardstand will be graded to convey flows to the discharge location. Pits will be located intermittently to capture water and reduce the flow depth on the surface.
- The site has been divided into 3 catchments to minimise pipe sizes and point flows. These 3 catchments will each make an individual connection into the council drainage system in the locations shown. This aligns with the catchments allowed in the Battery Court design.
- Major flows will be conveyed across the hardstand to their discharge point at Battery Court. As opposed to localised connection points, the site will be graded to sheet the flow to lower scour risk in major events.
- Stormwater quality is addressed by bunding of the core transformers in each battery row and a large bund around the main transformer. A Class 1 Oil Water Separator will treat the banded areas prior to any discharge into the internal pipe network to remove the risk of hydrocarbon spill.
- There is limited opportunity to collect and meaningfully reuse rainwater within the site and thus no rain water tanks are proposed.

The *Stormwater Strategy* for the Rangebank BESS builds upon the *Stormwater Management Strategy Industrial Development, April 2021* prepared for the broader subdivision of the land. This strategy and associated engineering design have been approved by the City of Casey and Melbourne Water, and the works are contracted to commence shortly. The strategy includes a Melbourne Water drain running east-west along Rangebank Drive, and a temporary retardation basin on the north-east corner of Rangebank Drive and Evans Road, until the downstream drain is constructed.

## 7.5. Clause 65 - Decision Guidelines

In determining whether a permit should be granted, the responsible authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines set out in Clause 65.

The Rangebank BESS proposal appropriately responds to the relevant decision guidelines as follows:

- The proposal is consistent with the purpose and intent of the Policy Framework as outlined in this statement, notably making a significant contribution to energy and resource efficiency for the wider metropolitan area,
- The proposal is consistent with the objectives of the Urban Growth Zone, and the applied Commercial 2 Zone, and is generally in accordance with the Cranbourne West Precinct Structure Plan, suitably locating a commercial service in the form of a utility installation in an emerging Business Park, and
- The amenity of the nearby residential area has been given due consideration as demonstrated by the Acoustic Report, and the submitted Preliminary Hazard Assessment and Fire Management Plan which comprehensively address the safety of the facility outlining a series of implementation measures.

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## 8.0 Conclusion

The Rangebank BESS is a significant infrastructure investment by Macquarie Corporate Holdings Pty Limited which will stabilise the State electricity supply by providing additional storage capacity for the neighbouring Ausnet Terminal Station, enabling discharge of supply at times of peak demand. Accordingly, the proposal rates highly against the resource and energy objectives of the State and Local Planning Policy and the Cranbourne West Precinct Structure Plan, employing new technology to achieve significant environmental benefits related to energy storage.

The use and development of the land for a utility installation is consistent with the requirements of the Casey Planning Scheme and generally in accordance with the Cranbourne West Precinct Structure Plan. The proximity to residential areas is comprehensively addressed in the *Acoustic Report* and *Preliminary Hazard Risk Assessment*, which identify a range of design measures and management procedures, which are to be incorporated into the development, including equipment attenuation and construction of an acoustic wall.

Overall, the proposal is considered to present a strategic resource opportunity and an appropriate planning outcome and is consistent with the purpose and intent of the relevant planning controls and policies.

### END OF ASSESSMENT

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