

Macedon BESS

Macedon BESS – Social and Economic Impact Assessment

Macedon BESS Development Pty Ltd

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Document control record

Document prepared by:

Aurecon Australasia Pty Ltd

ABN 54 005 139 873

Aurecon Centre

Level 8, 850 Collins Street

Docklands, Melbourne VIC 3008

PO Box 23061

Docklands VIC 8012

Australia

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T +61 3 9975 3000

F +61 3 9975 3444

E melbourne@aurecongroup.com

W aurecongroup.com

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Bonnie Bryson		Bez Hasenfratz	
Senior Consultant, Engagement and Change Advisory		Manager, Environment and Planning	

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Executive Summary

Aurecon Australasia Pty Ltd (Aurecon) has been engaged by Macedon Battery Energy Storage System (BESS) Development Pty Ltd to facilitate the environmental and planning assessments and approvals for the Macedon Battery Energy Storage System (BESS) (the Project).

The Project includes the development of a BESS on the Site located on Black Forest Drive (also referred to as Macedon-Woodend Road), Macedon (formally known as Lot 2 on Plan of Subdivision 444155). The construction phase is expected to span approximately 12 months.

This Social and Economic Impact Assessment (SEIA) evaluates the potential social and economic impacts associated with the construction and operation of the Project.

Key Findings:

1. **Economic Benefits:** The economic assessment indicates that the Project will create approximately 137 full-time equivalent (FTE) jobs during the construction phase and approximately 141 FTEs during the operational phase. The total economic impact is projected to generate an increase of \$88 million in output for the Victorian economy and enhance local business activity.
2. **Potential Positive Social Outcomes:** This SEIA identifies both positive and negative social impacts. Positive impacts include improved local employment opportunities and increased economic activity benefiting local businesses.
3. **Potential Negative Social Outcomes:** Potential negative impacts include noise pollution during construction, traffic disruptions, and community anxiety relating to health and safety..

Mitigation and Enhancement Measures:

To enhance positive outcomes and mitigate negative impacts, this SEIA recommends several strategies:

- **Construction Management Plan:** The development of a robust plan would regulate construction activities to minimise noise and ensure operations are conducted during standard hours, providing respite for affected neighbours as required.
- **Traffic Management Plan:** Development of this plan would aim to minimise road disruptions during the construction phase, including advance communication to residents about potential impacts. A preliminary traffic assessment is being prepared as part of the planning application. It is expected that a Traffic Management Plan will be required as a planning permit condition.
- **Community Engagement Strategy:** Proactive communication with local stakeholders should be implemented to build trust, share information, and ensure community concerns are addressed throughout the project lifecycle.
- **Monitoring and Transparency:** Ongoing engagement with the community should include providing updates about the operational activities of the BESS.

In summary, while the Project offers significant benefits in energy stability and local economic growth, effective implementation of recommended measures will be crucial to managing potential adverse impacts and fostering positive community relationships. The Project aligns strategically with Federal, State and Local Government strategy objectives and positions itself as an important contributor to the region's energy future.

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Abbreviations

Table 0-1 List of Abbreviations identifies all abbreviations and acronyms used in this report.

Table 0-1 List of Abbreviations

Term	Definition
ABS	Australian Bureau of Statistics
Aurecon	Aurecon Australasia Pty Ltd.
BESS	Battery Energy Storage System
CFA	Country Fire Authority
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
CEP	Communications and Engagement Plan
CMP	Construction Management Plan
DEECA	Department of Energy, Environment and Climate Action
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPC	Department of Premier and Cabinet
EPA	Environmental Protection Authority
EL	Economic Locality
FTE	Full Time Equivalent
GHG	Greenhouse Gases
GW	gigawatt
ha	hectares
HSE	Health, Safety, and Environmental
km	kilometres
kV	Kilovolt
LGA	Local Government Area
m	metre
cm	centimetre
mm	millimetres
MNES	Matter of National Environmental Significance
MW	Megawatts
MWh	Megawatt hours
NT	National Trust
NEM	National Electricity Market

RAP	Registered Aboriginal Party
SGD	Significant Ground Disturbance
SEIA	Social and Economic Impact Assessment
SL	Social Locality
The Applicant	Macedon BESS Development Pty Ltd
The Project	Macedon Battery Energy Storage System
WWCHAC	Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation

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1 Introduction

1.1 Purpose

Aurecon Pty Ltd (Aurecon) has been engaged by Macedon Battery Energy Storage System (BESS) Development Pty Ltd to prepare this Social and Economic Impact Assessment (SEIA) for the Macedon BESS (the Project). The purpose of this SEIA report is to provide an assessment of the potential social and economic impacts (both positive and negative) during construction, and operation of the Project. Where appropriate, the SEIA will provide mitigation and enhancement measures in response to each of the identified impacts.

The scope of the assessment is to:

- Identify existing conditions in the study area.
- Utilise desktop analysis and economic modelling to capture the economic benefits of the Project.
- Identify the potential positive and negative social impacts of the Project and associated mitigation and enhancement measures.

1.2 Assumptions and limitations

The following assumptions and limitations apply to this report:

- Desktop investigations were undertaken to inform the findings of this report.
- Key findings of background studies and technical reports are accurate.
- Socio-economic data from the 2021 Australian Bureau of Statistics (ABS) Census¹ accurately reflects the community demographic profile.
- This assessment has attempted to be objective, however it is noted that socio-economic impacts are highly subjective. This SEIA acknowledges that socio-economic impacts may affect people differently, depending on individual circumstances, the type of impact and proximity to the Project.

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¹ Source: ABS, 2021, <https://www.abs.gov.au/census>

2 Project Site and Surrounds

The proposed Site is located on Macedon-Woodend Road, Macedon and is formally known as Lot 2 on Plan of Subdivision 444155 (refer to Figure 2-1). The proposed Site has an area of approximately 7.28 hectares (ha) and is located in the Macedon Ranges Shire, approximately 59 kilometres (km) north-west from Melbourne's Central Business District (CBD). The Site is bordered by Alison Lane to the north, Black Forest Drive/ Macedon-Woodend Road to the east, the Gisborne Substation to the south and the Calder Freeway to the west.

Mature vegetation surrounds the Site's boundaries. The central portion of the Site comprises flat topography, with small patches of mature canopy trees and understorey vegetation.

There is an unnamed waterway located within the western portion of the Site.

The Site surrounds are largely characterised by cleared, vacant land on the south side of Calder Freeway and agricultural land on the north side of Macedon-Woodend Road. The Site is situated in a rural setting and away from established neighbourhoods. Low density rural residences are visible within the broader landscape to the north, with the nearest dwelling being opposite Macedon-Woodend Road at approximately 65 metres (m) to the east. The closest township is New Gisborne, approximately 2.3km to the south-east of the Site which is within the Macedon Ranges Shire Council.

The Registered Aboriginal Party (RAP) associated with the Site is Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC).

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Figure 2-1 Project Site

2.1.1 Project Description

The following section provides a summary of the Project and should be read in conjunction with the accompanying Concept Design prepared by EHV Consulting.

The Project will comprise the following:

- Site establishment works including removal of vegetation within the construction area.
- Construction of a BESS with a 501 MWh capacity featuring the following design components: 123 Battery Cell Containers (BCCs) and 41 Power Conversion Units (PCUs)
- Ancillary electrical equipment including sub-station, control rooms, harmonic filter, and connecting ancillary equipment
- Construction of two site access points connecting to Allison Lane and Macedon-Woodend Road respectively, and associated business identification signage.
- Underground or overhead cabling (66kV) to connect the onsite substation to the adjoining Powercor Gisborne Substation (66/22kV).
- An Operations and Maintenance (O&M) Facility.
- Temporary construction facilities including site offices and stores, laydown and hardstand area and construction carpark.
- Water storage including two water supply tanks and pump house.
- Fencing around the perimeter of the BESS and collector substation.
- Permanent car parking spaces for operational staff.
- Installation of a noise wall up to 4m in height on the north east boundary the BESS.
- Construction of two (2) lightning masts up to 21.4m in height adjacent to the collector substation.
- Construction of light poles up to 10.6m in height around the perimeter of the BESS.
- Construction of a firewater holding pond.

Figure 2-2 Proposed Site Layout Plan provides a visual overview of the proposed site.

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Figure 2-2 Proposed Site Layout Plan

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3 Legislative and policy context

Table 3-1 details the legislation and policies applicable to this report. These strategic drivers have been identified in a review of key Federal, State and Local Government strategies and plans.

Table 3-1 - Legislative and policy context

Policy/Strategy	Details	Relevance to the Project
Federal		
National Electricity Rules (NER)	Governs the national electricity market, ensuring market participants understand their rights and responsibilities. As of September 2023, the rules associated with Market Price Cap, Cumulative Price Threshold and Administered Price Cap have changed. The increase in price aims to maintain the network's reliability and allow for more scope for investors to deliver emerging technologies for the transition to net zero	The Project aligns with the updated rules by providing storage capacity, which supports market stability and enables investments in emerging technologies.
Australian Energy Regulator (AER) Strategic Plan 2020-2025	The AER regulates Australia's wholesale electricity and gas markets, which form part of the Australian Competition and Consumer Commission (ACCC). This Strategic Plan sets out priorities to achieve four key objectives over the next five years, which includes delivering efficient regulation of monopoly infrastructure while incentivising networks to become platforms for energy services.	The Project aligns with the plans objectives by aiming to increase the stability of the electricity network by providing storage capacity to the National Electricity Market (NEM). The Project will also contribute to several key outcomes that the AER aims to achieve, including an affordable, secure, and reliable energy supply.
Australia's Long Term Emissions Reduction Plan	Australia's whole-of-economy Long-Term Emissions Reduction Plan is focused on technology and sets out how Australia will achieve net zero emissions by 2050. One of the key principles of the plan is keeping energy prices down with affordable and reliable power.	The Project would help reduce the electricity prices during peak demand periods for consumers and reduce the State's reliance on non-renewable energy sources.
Integrated System Plan	The Integrated System Plan (ISP) is a whole-of-system plan that provides a coordinated generation and transmission investment plan to transition the NEM over the next 30 years. The Australian Energy Market Operator (AEMO) updates the ISP every two years, and the most recent ISP for the NEM was published in June 2024, with the draft 2026 ISP published for consultation in December 2025.	The ISP suggests that 49 GW / 646 GWh of new battery and hydro storage (distributed and utility scale), would be required to be able to respond to the exit of coal and renewable energy sources entering the market.
State		
Victoria's Renewable Energy Target (VRET)	The VRET sets a target of 50% renewable energy by 2030 and promotes renewable energy sources and technologies.	The Project would directly support this target by enhancing energy storage, thus facilitating the integration and reliability of renewable energy sources within Victoria.

Victoria's Climate Change Strategy	Aims for a net-zero emissions target by 2050, with a focus on transitioning to renewable energy, energy efficiency, and supporting technology innovation.	The Project would contribute to the State's climate objectives by improving energy storage capacity, supporting the reduction of reliance on non-renewable energy sources.
Victorian Renewable Energy Zones Development Plan	Focuses on supporting the development of coordinated infrastructure to accelerate renewable energy generation and storage.	The Project would contribute to the establishment of Renewable Energy Zones by providing necessary storage capacity that enhances the viability of renewables in the grid.
Cheaper, Cleaner, Renewable: Our Plan for Victoria's Electricity Future	Aims to manage and enhance electricity supply with a focus on energy security and affordability.	The Project aligns with this strategy by aiming to provide critical storage that would help balance supply during peak demand, thereby enhancing the reliability and cost-effectiveness of energy.
Local		
Macedon Ranges Planning Scheme	Outlines planning objectives and controls for the Macedon Ranges area, focusing on sustainable development, local character, and environmental values.	The Project aligns with the Planning Scheme by aiming to improve energy reliability in the region while ensuring that local character and environmental values are respected and protected.
Macedon Ranges Council Environment Strategy	Focuses on enhancing sustainability outcomes, promoting renewable energy, and addressing climate change impacts within the local government area.	The Project supports the Council's goals by aiming to contribute to sustainable energy storage solutions, directly enhancing community resilience against climate impacts and promoting local energy independence.

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4.1 Overview

This SEIA identifies and assesses the potential positive and negative economic and social impacts of the Project.

Social impacts vary in nature and can be positive or negative, tangible or intangible, physically observable, or psychological - including fears and aspirations. Social impacts can be quantifiable, partly quantifiable, or qualitative. They can also be experienced or perceived differently by different people and groups within a community or over time.

The economic impact assessment evaluates the potential benefits of the Project's capital and operating costs on the Region and Victorian economies using a multiplier effect. This assessment is undertaken to understand the direct and indirect impacts on jobs and economic activity, with indirect impacts being changes transmitted through the economy.

4.2 Study Area

As outlined in Table 4-1 SEIA, Table 4-1 SEIA this SEIA has relied on ABS Statistical Area Boundaries to define a Social Locality (SL) and an Economic Locality (EL). The Social Impact Assessment (SIA) and Economic Impact Assessment (EIA) employ different areas of study to accommodate for the differing nature of the impacts under assessment. The SL is defined using ABS Statistical Area Level 2 (SA2) boundaries, narrowing the scope to focus on the people immediately surrounding the Site, which is appropriate for assessing the social impacts of a Project of this scale. Alternatively, the EL considers a broader area using the wider region² (which encompasses the SL). This is because the economic impacts of the Project are likely to be broader reaching and may present flow-on effects to the wider Loddon Campaspe Region.

Table 4-1 SEIA Study Areas

Study area	Description
Social Locality (SL)	Defined using the Macedon and Gisborne SA2s.
Economic Locality (EL)	Defined using the Loddon Campaspe Regional Development Boundary.

4.3 Social Impact Assessment

This SIA aligns with current leading industry practice; the NSW Department of Planning & Environment *Social Impact Assessment Guideline*³ and accompanying Technical Supplement - *Social impact Assessment Guideline for State Significant Projects*⁴ (hereafter referred to as the Guidelines). It assesses the potential positive, negative, and cumulative impacts of the Project, during the construction and operational phases.

Note: there are no existing guidelines of this nature specific to Victoria and the Guidelines are commonly used nationally as best practice.

² Loddon Campaspe Regional Partnership - Regional Development Victoria

³ Source: Planning NSW, 2023, <https://pp.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines/social-impact-assessment>

⁴ Source: Planning NSW, 2023, https://www.planningportal.nsw.gov.au/sites/default/files/documents/2023/GD1944%20SIAG%20-%20Technical%20Supplement_NEW%20VI_14_02_23.pdf

4.3.1 Stages of assessment

The following was undertaken in assessing the Project's potential social impacts:

- Baseline analysis of the existing socio-economic environment of the nominated study area.
- Review of key Federal, State and Local legislation.
- Analysis of secondary stakeholder consultation data. Consultation activities were conducted by South Energy between September 2024 and February 2025. Aurecon analysed the data to identify key community and stakeholder concerns, aspirations and opportunities.
- Review of SEIA's completed for other BESS projects and/or projects in the area.
- Media and social media scan on Project-related themes to identify areas of community interest.
- Identifying and assessing potential impacts against the specified factors in the Guidelines.
- Identifying measures to manage or mitigate the Project's potential negative impacts and enhance positive benefits.

4.3.2 Approach to assessment

The Guidelines prescribe a technical assessment framework for evaluating project social impacts, which is outlined below.

Social factors

The following suite of material factors forms the core basis an SIA:

- **Way of life:** how people live, get around, work, play and interact with one another on a day-to-day basis.
- **Community:** its composition, cohesion, character, how it functions, and sense of place.
- **Accessibility:** how people access and use infrastructure, services, and facilities.
- **Culture:** people's shared beliefs, customs, values and stories, and connections to Country, land, water, places, and buildings.
- **Health and wellbeing:** people's physical, mental, social, and spiritual wellbeing.
- **Surroundings:** access to and use of natural and built environment, including ecosystem services, public safety, and security, as well as aesthetic value and amenity.
- **Livelihoods:** including impacts on employment or business, experience of personal breach or disadvantage, and the distributive equity of impacts and benefits.
- **Decision-making systems:** the extent to which people are able to participate in decisions that affect their lives, procedural fairness, and the resources provided for this purpose.

Likelihood

Impact likelihood definitions are in Table 4-2 Likelihood of impact.

Table 4-2 Likelihood of impact

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g., has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Magnitude

Dimensions of impact definitions are in Table 4-3.

Table 4-3 Dimensions of impact

Dimension	Detail
Extent	Who specifically is expected to be affected (directly, indirectly, and cumulatively), including any vulnerable people? Which location(s) and people are affected? (e.g., near neighbours, local, regional, and future generations).
Duration	When is the social impact expected to occur? Will it be time-limited (e.g. over particular project phases) or permanent?
Severity or scale	What is the likely scale or degree of change? (e.g., mild, moderate, severe)
Intensity or importance	How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? This might depend on the value they attach to the matter: - whether it is rare/unique or replaceable, - the extent to which it is tied to their identity; and - their capacity to cope with or adapt to change.
Level of concern/interest	How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and intensity.

In consideration of the dimension, each impact was assigned a magnitude level defined in Table 4-4

Table 4-4 Magnitude of impact

Magnitude level	Meaning
Transformational	Substantial change in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something people value highly, either lasting indefinitely or affecting many people in a widespread area.
Moderate	A noticeable deterioration or improvement in something people value highly, either lasting for an extended time or affecting a group.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change was experienced by people in the locality.

The likelihood and magnitude were considered cumulatively to determine a social significance rating. Table 4-5 Social significance rating matrix lists the range of impact significance ratings.

Table 4-5 Social significance rating matrix

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very high	Very high
B	Likely	Low	Medium	High	High	Very high
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Developing responses to social impacts

Once the evaluations were complete, specific responses to both negative and positive social impacts were formulated. This includes both:

- **Mitigation Measures:** Actions to avoid or minimise negative impacts.
- **Enhancement Strategies:** Proposals to increase positive impacts on local communities.

Re-evaluating social impacts

In consideration of the mitigation and enhancement measures identified, the individual impacts were then re-assessed using the same criteria outlined above to determine the 'residual impact' in the form of a revised social significance rating.

4.4 Economic Impact Assessment

4.4.1 Economic input-output analysis

An input-output model was used to assess the potential economic benefits (both direct and indirect) of the capital and operating cost of the Project through a multiplier effect.

The economic input-output modelling is based on an input-output table which provides a summary or 'snapshot' of the transactions occurring within an economy over a selected period. An input-output table is based on the fundamental notion that industries are inter-dependent. It provides a systematic way to analyse how changes in one industry can impact other industries and the overall economy. Input-output multipliers ('economic multipliers'), derived from input-output tables, capture the extent of inter-dependence between industries. The investment from the construction of the project will directly stimulate a range of industries, including the trades that physically construct the project i.e., suppliers who supply the construction materials that is used for the project. The investment also has downstream (indirect) impacts on the supply chain, such as the manufacturers that make and sell the construction materials to the suppliers.

The economic multipliers are summary measures that can be used for estimating the impact on all industries in the economy from changes in demand or for the output of any one industry. Economic multipliers capture not only the direct effects of an industry expansion, but also the indirect or flow-on effects that arise due to industry interactions.

Input-output analysis is a flexible tool and can be used to produce a variety of economic impact measures. This analysis focuses on income generated (from wages and salaries), employment and economic growth measures. Economic growth is quantified at the national, state and regional levels.

Multipliers

To undertake this analysis, an input-output model, which reflects Victoria's economic environment, was derived utilising States Accounts data for the financial year 2023-2024.⁵

The input-output model has been used to quantify the total economic impact during the construction phase by assessing the following economic multipliers:

- The **output multiplier** output multiplier measures the total increase in economic activity across all sectors of the economy that results from a one dollar increase in final demand for the output of a specific industry. It captures the direct, indirect, and induced effects of production, showing how demand in one sector stimulates additional output throughout the supply chain.
- The **employment multiplier** is calculated by dividing the number of employed persons in an industry by the level of production generated by that industry.

⁵ Source: Australian National Accounts' States Accounts, 2023-2024

- The **income multiplier** for a given industry is defined as the total value of income from wages, salaries and supplements required to satisfy a dollar's worth of final demand for the output of that industry.⁶

Economic multipliers capture:

- **Direct effects or economic benefits** (initial) to the economy from the investment. This captures the direct effect of an increase in demand for an industry's output. For example, the employment multiplier represents the change in the number of persons employed in all relevant industries in the economy after the initial and first round induced output from the project investment.
- **Indirect effects or economic benefits** (secondary effect) to the economy from the investment. This captures the sales, jobs and income of the related industries that supply goods and services.
- **Total effects or economic benefits** to the economy from the investment. This captures the direct and production effects, along with consumption induced effects that flow from the expenditure of the income that is earned from the direct effects (i.e. Indirect effects).

ABS Data

For input-output modelling, the capital and operating cost for the Project should be split by industry classifications and proposed location of each cost component. The industry classification breakdown highlights the various sectors associated with the Project and ensures that the appropriate multiplier is applied for each industry. The location-based analysis assesses the economic impact on the various areas affected by the Project.

The industry classifications adopted to categorise the capital and operating costs, are based on the ABS's Australian and New Zealand Standard Industrial Classification (ANZSIC) codes. The ABS data used in the NSW input-output model is summarised in Table 4-6.

Table 4-6 ABS series data

ABS series name	Table	Version
Australian National Accounts: Input-Output Tables - 2022-23	Table 5. Industry by industry flow table (direct allocation of imports) Table 20. Employment by industry	26 March 2025
Labour Force, Australia, Detailed	Table 5. Employed persons by State, Territory and Industry division of main job (ANZSIC)	27 February 2025
Australian National Accounts: State Accounts	Table 4. Expenditure, income and industry components of gross state product, Victoria, chain volume measures and current prices	20 November 2024

4.4.2 Distribution of capital expenditure

The Project is expected to be constructed over a 12-month construction period. The costs associated with this proposed modification include:

- Purchase of materials including core battery and inverter components, civil and structural materials
- Purchase and deployment of plant and equipment
- Installation costs, including cost of labour
- Engineering, design and owners' costs
- Commissioning of the system.

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The split of local versus rest-of-Australia for each cost component is shown below in Table 4-7.⁷

A significant proportion of the materials and equipment required for the Project is expected to be sourced from international suppliers. However, where possible, cost components such as labour and installation, and

⁶ Income refers to the total amount of money earned by individuals, businesses, and entities as a result of the project. This includes various sources, such as wages and salaries, profits from businesses, rent, interest, and other forms of earnings.

⁷ This split has been estimated by Macedon BESS Development Pty Ltd.

transport will be invested and resourced locally, utilising a local labour workforce and industry from Victoria. It is anticipated that this capital expenditure will flow directly to local businesses, such as locally employed construction services. There will also be indirect impacts on other businesses that support these construction services.

This capital investment will require input from various industries (as per ABS ANZSIC codes), as shown in Table 4-7⁸.

Table 4-7 Capital expenditure by location and proportion of total costs

Cost components	ANZSIC code	Industry classification	Proportion of total cost	Proportion of cost by location (Australia vs Overseas, %)		
				Vic	Rest of Australia	Overseas
			(%)			
Materials	2405	<i>Specialised and other Machinery and Equipment Manufacturing</i>	63.3%	0%	10%	90%
Engineering, owners' costs and other	6901	<i>Professional, Scientific and Technical Services</i>	11.8%	100%	0%	0%
Equipment	3101	<i>Heavy and Civil Engineering Construction</i>	10.2%	0%	30%	70%
Equipment	2405	<i>Specialised and other Machinery and Equipment Manufacturing</i>	4.4%	0%	30%	70%
Site preparation	3101	<i>Heavy and Civil Engineering Construction</i>	4.1%	100%	0%	0%
Contingency	6901	<i>Professional, Scientific and Technical Services</i>	2.3%	100%	0%	0%
Labour and Installation	3101	<i>Heavy and Civil Engineering Construction</i>	1.8%	95%	0%	5%
Commissioning	6901	<i>Professional, Scientific and Technical Services</i>	1.2%	81%	9%	10%
Transport	5201	<i>Transport Support services and storage</i>	0.8%	49%	21%	30%
Total Capital Costs			100%			

4.4.3 Distribution of operating expenditure

The Project operating cost components shown in Table 4-8 will be spent over a 20-year operating period. This includes costs for:

- Utilities, such as power and water supply costs
- Maintenance of the system

⁸ This split has been estimated by Macedon BESS Development Pty Ltd.

- Licences, insurance and major hazard facilities (MHF)
- Labour force, including supervisors, operators, engineers, skilled labourers and administrative costs.
- Labour and training for apprentices.

The split between local, the rest-of Australia and overseas for each cost component is shown below in Table 4-8. The table shows majority of the operating expenditure will be invested in Victoria, with only a fraction of maintenance expected to be outsourced internationally.

This operational investment will require input from various industries (as per ABS ANZSIC codes), as shown below.

Table 4-8 Operating expenditure by location and proportion of total costs

Cost Components	ANZSIC Code	Industry Classification	Proportion of total cost (%)	Proportion of cost by location (Australia vs Overseas, %)		
				Victoria	Rest of Australia	Overseas
Maintenance	9402	<i>Other Repair and Maintenance</i>	25.0%	90%	5%	5%
Licences, insurance, MHF etc.	6401	<i>Auxiliary Finance and Insurance Services</i>	20.0%	100%	0%	0%
Labour	6901	<i>Professional, Scientific and Technical Services</i>	20.0%	100%	0%	0%
Labour (Apprentices)	8110	<i>Technical, Vocational and Tertiary Education Services</i>	20.0%	100%	0%	0%
Power	2605	<i>Electricity Transmission, Distribution, On Selling and Electricity Market Operation</i>	5.0%	100%	0%	0%
Water	2801	<i>Water Supply, Sewerage and Drainage Services</i>	5.0%	100%	0%	0%
Fuel	3101	<i>Heavy and Civil Engineering Construction</i>	5.0%	100%	0%	0%
Total Operating Costs			100.0%			

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4.5 Author qualifications

This report has been prepared by suitably qualified and experienced authors who hold appropriate qualifications and have relevant experience to carry out the SEIA for this Project. Each author and their qualification is outlined in Table 4-9 Author background.

Table 4-9 Author background

Team member	Experience
Dr Jamie Seaton Consultant, Aurecon <u>Qualifications:</u> Bachelor of Science Hons. (Human Geography) • Community Development Diploma • PhD Human Geography	Jamie has more than 15 years' experience conducting social research and community engagement programs, underpinned by skills acquired during his PhD social research. Jamie is an exemplary social impact assessment and community engagement practitioner. During his career Jamie has demonstrated his strong social research and impact assessment capabilities in private, Government and education settings across Australia. Jamie has developed and led the SIA research activities and authored SIA reports for major extractive industry, urban development, health, waste, water, renewable energy, transport, and tourism projects nation-wide.
Dr Nadira Barkatullah Director, Aurecon <u>Qualifications:</u> PhD in Economics Masters in Economics	Dr Barkatullah is a specialist economist in infrastructure financing and regulated utility industries. She has more than 25 years of experience in applying economic concepts and conducting quantitative analysis while working on projects around the globe. The experience includes advising governments and major organisations on financing and economic regulation. Nadira led numerous infrastructure projects and has contributed to strategic infrastructure projects across the globe, including Australia, UK, Europe, and the Middle East. Nadira has conducted economic impact assessment for numerous energy projects, including Elenora offshore Wind Farm, Crystal Brook Energy Park, Kentbruck Green Power Hub, New England Renewable Energy Zone, Golden Plain Wind Farm, Bell Bay Ammonia Plant and TasNetwork Marinus Link.
Bonnie Bryson Senior Consultant, Aurecon <u>Qualifications:</u> Bachelor of Media and Communications	Bonnie is an accomplished professional with extensive expertise in social research and impact assessments across a range of major infrastructure projects. She is equipped with both academic qualifications and practical experience essential for authoring a comprehensive Social Impact Assessment. She has successfully collaborated with diverse stakeholders, utilising her skills in qualitative and quantitative research methods to analyse social dynamics and evaluate potential impacts. Bonnie's effective communication abilities ensure she conveys complex information clearly, promoting transparency and collaboration throughout the assessment process.
Nike Adeoye Senior Consultant, Aurecon <u>Qualifications:</u> PhD in Economics and Applied Mathematics MSc in Economics and Finance	Dr Adeoye is a senior economist with over six years of experience in applied economics, financial analysis, and mathematical modelling. She specialises in the development of complex, fit-for-purpose models to support economic evaluation, financial forecasting, business planning, and strategic decision-making. As an economist, she has supported the development of cost-benefit analysis, multi-criteria prioritisation tools, strategic and final business cases for various sustainability projects

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5.1 Construction Phase Benefits

The benefits from the construction phase were derived from the economic multipliers of the relevant industries, as described in Section 3.4.1. Applying the economic multipliers to the capital expenditure provides estimates of both direct and indirect economic benefits generated by the Project.

The tables below summarise the total economic impact benefits during the construction phase for the output, income and employment growth multipliers. The construction and commissioning phase spans over a period of one year. Economic impacts have been estimated for both the Loddon Campaspe Region (a region which encompasses the Macedon Ranges Shire) and for Victoria as a whole. It is assumed that 25% of the total Victorian impact will be realised within the Loddon Campaspe Region, reflecting the expectation that approximately one-quarter of the project's benefits will be captured locally due to the availability of a skilled regional workforce to support the project.⁹

5.1.1 Output

Table 5-1 presents the incremental output effects of executing the Project based on the input-output analysis. The cost of undertaking the Project is expected to generate a total (direct and indirect) output increase of \$88 million for the Victorian economy. This growth includes a total output of \$22 million for the Loddon Campaspe Region.

Table 5-1 Victoria output growth (Construction) (\$M)

ABS Industry	Loddon Campaspe Region	Victoria
Direct	\$8.83	\$35.32
Indirect	\$13.26	\$53.05
Total	\$22.09	\$88.38

5.1.2 Employment creation

The injection of capital expenditure to the Victorian economy is expected to generate a total (direct and indirect) of 137 full-time equivalent (FTE) person-years of employment over the Project's construction period. This includes 34 FTE person-years in the Loddon Campaspe Region. Table 5-2 provides a breakdown of employment impacts for both the Loddon Campaspe Region and Victoria.

Table 5-2 Victoria employment growth (Construction) (FTE person-years)

Employment Benefits	Loddon Campaspe Region	Victoria
Direct	13	53
Indirect	21	84
Total	34	137

5.1.3 Income

During the construction phase, the Project is expected to generate a cumulative increase in income, both direct and indirect of approximately \$14.5 million for the Victorian economy, including approximately \$3.6 million for the Loddon Campaspe Region as shown in Table 5-3.

⁹ Macedon Ranges Economy, Jobs, and Business Insights | Gross Regional Product, Trends | REMPLAN

Table 5-3 Income growth (Construction) (\$M)

Income Benefits	Loddon Campaspe Region	Victoria
Direct	\$1.75	\$6.98
Indirect	\$1.88	\$7.53
Total	\$3.63	\$14.52

5.2 Operational Phase Benefits

Using the methodology employed in the construction phase, operational economic benefits were derived by multiplying the relevant industry multipliers by the proportion of expenditure allocated to them as outlined in Section 3.4.3.

The tables below summarise the total economic benefits during the operational phase, for output, income growth and employment benefits. The operational phase spans over a 20-year period. Most of the economic benefits from the Project's operational phase are anticipated to be concentrated in Victoria.

5.2.1 Output

During the operational phase, the Project will lead to direct and indirect output growth of approximately \$10 million per annum for the Victorian economy and approximately \$2.5 million per annum for the Loddon Campaspe Region. Over the operational phase of 20 years, the Project will lead to a total (direct and indirect) output growth of \$196 million for the Victorian economy and total output growth of over \$49 million for the Loddon Campaspe Region, as shown in Table 5-4.

Table 5-4 Victoria Output growth (Operation) (\$M)

Output Benefits	Loddon Campaspe Region		Victoria	
	<i>\$M/year</i>	<i>\$M over operational phase</i>	<i>\$M/year</i>	<i>\$M over operational phase</i>
Direct	\$0.98	\$19.52	\$3.90	\$78.06
Indirect	\$1.47	\$29.49	\$5.90	\$117.98
Total	\$2.45	\$49.01	\$9.80	\$196.04

5.2.2 Employment creation

Operational spending associated with the Project is projected to support a total of 7 FTE person-years of employment per annum across Victoria. Over the operational phase of 20 years, the Project will result in the creation of 140 FTEs (direct and indirect) person-years in Victoria. Table 5-5 outlines the distribution of these employment impacts by region and the remainder of the state.

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Table 5-5 Victoria employment growth (Operation) (FTE person-years)

Employment Benefits	Loddon Campaspe Region		Victoria	
	<i>jobs/year</i>	<i>FTEs over operational phase</i>	<i>jobs/year</i>	<i>FTEs over operational phase</i>
Direct	1	20	3	60
Indirect	1	20	4	80
Total	2	40	7	140

5.2.3 Income

In the operational phase, the Project is expected to generate combined direct and indirect annual income increases of \$730,000 for the Victorian economy and \$180,000 for the Loddon Campaspe Region. Over the full 20-year operational period, this equates to a cumulative income uplift of approximately \$14.6 million for Victoria and approximately \$3.6 million for the Loddon Campaspe Region as outlined in Table 5-6.

Table 5-6 Victoria Income growth (Operation) (\$M)

Income Benefits	Loddon Campaspe Region		Victoria	
	<i>\$M/year</i>	<i>\$M over operational phase</i>	<i>\$M/year</i>	<i>\$M over operational phase</i>
Direct	\$0.09	\$1.82	\$0.36	\$7.26
Indirect	\$0.09	\$1.83	\$0.37	\$7.34
Total	\$0.18	\$3.65	\$0.73	\$14.60

6 Social Impact Assessment

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6.1 Social baseline

Table 6-1 contains the social baseline attributed to the population in the SL¹⁰. Datasets for the Macedon Ranges Local Government Area (LGA) and wider Victoria populations are provided for comparative purposes.

Table 6-1 - Locality baseline

Data Point	Macedon SA2	Gisborne SA2	Macedon Ranges LGA	Victoria
Population	3,523	10,142	51,458	6,503,491
Median Age	46 years	39 years	43 years	38 years
Household Income (Weekly Median)	\$2,457	\$2,294	\$2,059	\$1,759
Unemployment Rate	2.5%	3%	3.2%	5%
Education Level (Bachelor Degree and above)	37.4%	26.8%	26.7%	29.2%
Owner-occupied Dwellings (Owned Outright)	43.6%	34.5%	38.5%	32.2%
Born overseas	21.4%	16.1%	18.4%	35%
Average Household Size	2.7	2.8	2.7	2.5

¹⁰ Source: ABS, 2021, <https://www.abs.gov.au/census>

6.1.1 Regional context

The Macedon Ranges LGA encompasses several towns including Gisborne, Woodend, Kyneton, and Macedon. The region is characterised by its rolling hills, forests, and vineyards, making it one of Victoria's most desirable areas for both residents and tourists. Major natural attractions include Hanging Rock, Mount Macedon, and numerous walking trails.

The economy of the Macedon Ranges LGA is characterised by a blend of agricultural, retail, and service industries. The region's agricultural sector is particularly robust, with many local farms producing premium produce, including fruits, vegetables, and wines. The growth of boutique vineyards has also established the Macedon Ranges as a key player in Victoria's wine industry.

The average age of residents is 43 years, reflecting a diverse demographic profile that includes families, retirees, and young professionals seeking a rural lifestyle while remaining within commuting distance of Melbourne.

Financially, households in the Macedon LGA experience a median weekly income of around \$2059, which is above the Victorian average of \$1,759.

The community is served by essential amenities, including primary and secondary schools, health care facilities, and recreational parks, supporting a family-friendly environment. Public transport options, including train services to Melbourne, enhance connectivity, allowing residents the convenience of urban access.

6.1.2 Local social infrastructure and context

Key social infrastructure in the SL includes:

- **Educational Institutions:** The SL has a range of primary and secondary schools, including Macedon Primary School, Gisborne Primary School, and Gisborne Secondary College.
- **Early Childhood Education:** Several daycare and early learning centres are available in the area, including Gisborne Kindergarten and the Macedon Early Learning Centre, supporting families with young children.
- **Health Services:** The SL is served by a variety of health facilities, including Gisborne Medical Centre, Macedon Ranges Health, and local pharmacies, offering general practice and allied health services to residents.
- **Community Facilities:** Key community venues include the Gisborne Community Hall and Macedon and Mount Macedon Community House, providing spaces for events and gatherings that foster social connections within the community.
- **Sports and Recreation:** The SL has numerous sporting facilities, including the Macedon Ranges Sports Precinct, which features sports fields, playgrounds, and walking tracks. Additionally, the Macedon Ranges offer access to various outdoor recreational activities such as hiking and cycling trails, particularly in areas like Mount Macedon.
- **Places of Worship:** A variety of places of worship are located throughout the SL, including the Gisborne Uniting Church, St. Paul's Anglican Church, and the Gisborne Church of Christ.

Key areas of community interest within the SL include:

- **Gisborne Village:** Located at the heart of the community, Gisborne Village offers a mix of retail shops, cafés, and essential services, fostering local commerce and providing a vibrant community atmosphere.
- **Macedon Ranges:** This natural feature, prominent in the SL, offers stunning scenery and a variety of outdoor activities. The range attracts visitors for hiking, picnicking, and enjoying the picturesque views, contributing to local tourism and recreation.
- **Botanical Gardens:** The SL is home to a number of private and public gardens known for their beautiful landscapes. These areas promote environmental appreciation and offer recreational opportunities for residents and visitors.

- **Macedon Ranges Wine Region:** Renowned for its vineyards and wineries, this region not only contributes to local agriculture but also serves as a popular leisure destination for wine enthusiasts and tourists, enhancing the area's economic profile.
- **Walking and Cycling Trails:** The SL is interconnected by an extensive network of walking and cycling trails, promoting active lifestyles and providing opportunities for recreation among residents and visitors alike.
- **Gisborne Olde Time Market:** Held regularly, this market showcases local produce and artisan goods, supporting local farmers and small businesses while fostering community engagement.

6.1.3 Major projects and development

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Key major projects located within or proximal to the SL include:

- **Gilbert Gordon Oval netball court:** Gilbert Gordon Oval is undergoing a project to develop two new netball courts, valued at \$1,351,210 and scheduled for completion by 30 June 2025. This initiative follows a successful funding application to the Victorian Government's Local Sports Infrastructure Fund.
- **Gisborne Fields Landscape Plan implementation:** The Gisborne Fields Landscape Plan 2018 is guiding the development of a three-acre community park, with several stages already completed, including playground installation and shared pathways. While stages 6, 7, and 8 remain unfunded, recent improvements in stages 4 and 5 have introduced picnic facilities and play area expansions, enhancing the reserve's offerings for local residents.
- **Kyneton Showgrounds Master Plan implementation:** The Kyneton Showgrounds is undergoing upgrades valued at around \$2.8 million, including the development of new netball and little athletics facilities, following the adoption of the Master Plan in March 2023. Funded by a \$1.5 million pledge from the Victorian Government and approximately \$1.3 million from the Council, the project will enhance infrastructure with two new netball courts, lighting, female-friendly change rooms, and the relocation of little athletics facilities.
- **Macedon Kindergarten bathroom facilities upgrades:** Next year, Macedon Kindergarten will upgrade its bathroom facilities to enhance privacy and accessibility from the outdoor play area, promoting outdoor learning. The project, funded by the Victorian Government's Building Blocks Improvement Grant, aligns with contemporary design guidelines and will necessitate a temporary relocation of the kindergarten program in early 2026.
- **Macedon Ranges Sports Precinct Project:** On 28 June 2024, the first stage of the Macedon Ranges Sports Precinct officially opened after years of community advocacy and planning, providing a versatile space for various local sports and community groups. The upcoming second stage is in detailed design, with a budget of \$17 million, supported by a \$15 million contribution from the Australian Government.
- **New Lancefield kindergarten and Maternal and Child Health service:** The Lancefield Kindergarten and Maternal and Child Health (MCH) Centre project is underway to address the rising demand for these services in the Lancefield/Romsey area. Funded by the Victorian Government's Victorian School Building Authority with a \$3 million Building Blocks Capacity Grant, the initiative includes the construction of a three-room kindergarten and MCH facility. Additionally, the Council has allocated \$16,000 for furnishings and over \$120,000 to enhance environmental and sustainable design features, ensuring comfort for children and staff while promoting long-term efficiency and cost-effectiveness.
- **Woodend Community Centre Redevelopment:** The Woodend Community Centre Redevelopment aims to transform the existing facility into a modern, flexible, and sustainably-designed civic space based on the completed Master Plan and Business Case. The new centre will cater to various community users and will include a proposed library, a multi-purpose indoor performance space, a community and visitor information hub, a multi-purpose foyer and gallery space, a café and produce kiosk, and a village green for outdoor events. Community consultation on the concept design concluded on 29 July 2022, and schematic designs for the site are currently in progress.
- **Woodend to Riddells Creek Shared Trail Project:** The Woodend to Riddells Creek Shared Trail Project aims to enhance safe walking and cycling opportunities within the Macedon Ranges community. The \$12.24 million initiative will create a 24-kilometre trail extending from Woodend in the north to

Riddells Creek in the south, accommodating walking, running, low-volume cycling, and commuting. Construction is already underway in various sections of the trail and the project is slated for completion by December 2025.

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6.2 Media scan

A high-level media and social scan were undertaken to inform this study by identifying existing areas of community interest or concern that have been raised regarding BESS projects to date. A summary of the articles and social media posts used to inform this research, including references, are in Appendix A.

6.2.1 Environmental Concerns

Land Use and Biodiversity: Articles highlighted concerns about the impact of BESS installations on local ecosystems and land use, citing the displacement of flora and fauna due to the construction of large storage facilities.

Agricultural Impact: Several communities in regional Victoria highlighted concerns about the impact of BESS projects on productive agricultural land, citing fears of the flow-on effects of significant renewable energy developments.

6.2.2 Community Health and Safety

Toxic Materials: Media discourse highlights concern on the materials used for BESS projects, such as lithium, cobalt, and nickel. Communities expressed concerns about potential leaks or accidents that could release these substances into the environment, leading to health risks.

Manufacturing and Disposal Concerns: There are fears about the manufacturing process for batteries emitting harmful pollutants and the management of any waste.

Battery Fires: There have been incidents where BESS developments have caught fire, generating significant community concern regarding the safety of living near such installations. There are significant concerns about how fires will be prevented and managed and the impacts if a fire were to occur, such as toxic smoke inhalation.

Emergency Preparedness: Communities cited concerns about the adequacy of local emergency services to respond to incidents involving BESS projects, as specialised knowledge and equipment may be necessary to manage battery-related incidents safely.

Noise Pollution: Media discourse identified concerns about noise resulting from BESS installations, highlighting that this may disrupt local residents' quality of life, particularly in quieter rural or suburban areas.

Electromagnetic Fields (EMF): With the installation of energy storage systems and related infrastructure such as inverters and transformers, some community members have expressed concerns about potential health risks from electromagnetic fields. Although scientific consensus generally finds that EMF levels associated with such installations are safe, some community members may experience anxiety resulting from this concern.

Long-Term Health Monitoring: There is a call among community members for ongoing health monitoring related to living near BESS installations to identify any long-term health impacts that could arise from exposure to potential hazards.

6.2.3 Economic Impacts

Job Creation vs. Job Displacement: While communities generally react positively to the opportunity for BESS projects to offer potential job creation during construction and operation, there are concerns about the impacts on traditional energy sector jobs, particularly in coal-dependent communities.

Local Investment and Infrastructure: Some articles discuss the potential for local businesses to benefit from the presence of BESS projects, while others express concern that local infrastructure may not be adequately supported or improved.

6.2.4 Community Engagement and Acceptance

Stakeholder Consultation: Several media reports indicate that community support often hinges on effective engagement, highlighting that inadequate consultation processes can lead to mistrust and opposition from local residents.

Transparency and Information Access: Public discourse indicated a strong call for transparent sharing of information regarding the benefits, risks, and details of BESS projects to enhance public acceptance.

6.2.5 Positive Impacts

Alongside community concerns noted in media discourse, there are numerous positive developments and public communications reflecting strong government support, ongoing construction, and commissioning of major battery energy storage projects across Australia.

- **Accelerated Deployment and Construction Momentum:** There is strong ongoing activity in the construction and commissioning of large-scale BESS facilities, reflecting growing industry confidence and investment in energy storage infrastructure. This momentum supports scaling renewable energy integration and enhancing grid reliability.
- **Government Support and Policy Facilitation:** State governments are proactively fast-tracking battery storage projects through streamlined approvals and targeted funding programs that underpin a sustainable and secure energy future. This regulatory backing accelerates project delivery and signals commitment to clean energy transitions.
- **Successful Project Commissioning Demonstrates Operational Benefits:** Projects coming online showcase the practical benefits of BESS, including enhanced grid stability, faster renewable uptake, and support for energy market reliability. Such operational successes build public and stakeholder confidence in the technology's viability.
- **Economic and Clean Energy Impact:** Battery storage projects contribute to economic growth by generating employment opportunities during construction and operation phases and supporting decarbonisation goals by reducing reliance on fossil fuels. These benefits underline the important role of BESS in powering cleaner, more resilient energy systems.

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6.3 Summary of social impacts

This section of the SEIA identifies and assesses the magnitude and likelihood of potential social impacts (positive and negative) relating to the construction and operation of the Project. It also identifies mitigation and enhancement measures, providing a residual social significance rating. Impacts have been identified using data collected for the social baseline, media scan, stakeholder engagement records, academic research, other BESS SIAs and relevant government and agency reports. These findings can be found below in Table 6-2 - Summary of social impacts.

Table 6-2 - Summary of social impacts

Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
Potential positive impacts							
The Project could enhance network reliability and security, ensuring a more stable power supply. It is expected to support the faster and more cost-effective delivery of energy storage in the distribution network. This improvement could help lower overall energy costs, placing downward pressure on wholesale electricity prices. The community may benefit from reduced energy expenses, fostering economic stability and improving overall quality of life through more affordable and reliable energy access.	Way of life	Operation	Likely and Minimal	Low	Nil identified.	Likely and Minimal	Low
The economic assessment revealed the project will likely create 137 FTE roles during construction and 140 FTE roles during operation. This may provide direct income, improving financial stability and quality of life for workers. This increase in employment opportunities could boost economic stability, reduce unemployment, and contribute to the overall wellbeing of the community.	Livelihoods	Construction and operation	Likely and Minor	Medium	Investigate opportunities to use local contractors and suppliers of material and services.	Likely and Moderate	High

Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
Construction activities will likely increase the number of workers in the area and could boost local businesses. Local shops, restaurants, and services may see an increase in customers, resulting in higher sales. This increased economic activity could support the livelihoods of local business owners and workers, contributing to the overall economic stability and vitality of the community during the construction period.	Livelihoods	Construction	Possible and Minor	Medium	Consider utilising local business service providers during construction and operation.	Likely and Minor	Medium
The cost of undertaking the Project is expected to generate a total (direct and indirect) output increase of \$88 million for the Victorian economy. This growth includes a total output of \$22 million for Loddon Campaspe Region. This would be expended on a broad array of equipment, products and services, some of which may be procured from within the local and regional area. Such an injection of wealth would serve to further sustain and stimulate local economic growth within the region.	Livelihoods	Construction and operation	Likely and Minor	Medium	Consult with businesses, peak bodies and industry groups to provide opportunities for local procurement. Create an Accommodation and Employment Strategy which prioritises local procurement. Implement a benefits fund in consultation with the community to support the local economy and ensure they receive a share of the financial benefits.	Likely and Moderate	High
Potential negative impacts							

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Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
One of the most noticeable forms of amenity impacts through construction, relates to noise and vibration. Noise can interfere with daily life and cause a nuisance. The noise from construction has the potential to impact amenity for nearby residents.	Way of life	Construction	Likely and Moderate	High	Implement Construction Management Plan (CMP) and Communications and Engagement Plan (CEP) prior to the start of construction. Work within standard construction hours and perform high impact noise after 9:00am wherever possible and provide periods of respite. Use quiet machines where possible, turn off equipment when not in use. Consult with neighbours and clearly communicate likely impacts. Consider providing respite options for neighbours if required during construction (such as offering to pay for temporary alternate accommodation).	Likely and Minor	Medium

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Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
An increase in traffic and the delivery of components for the BESS may cause short temporary delays and inconveniences to local businesses and residents. The Traffic Impact Assessment has identified that during the peak construction period, the Project is estimated to generate 50 inbound light vehicle movements in the AM peak and 50 outbound movements in the PM peak, along with 30 inbound and 30 outbound heavy vehicle trips per day during construction hours outside peak periods. The increase in traffic during the construction phase is not expected to notably impact the operation of these roads.	Accessibility	Construction	Likely and Minor	Medium	Develop a Traffic Management Plan in consultation with relevant authorities, to minimise road and traffic disruptions for residents and business. Provide advance communication (i.e. signage, notification materials) about changes to local access and potential road hazards. Proactively communicate with nearby residents about traffic control measures and likely impacts through construction. Maintain a complaint process during construction.	Possible and Minor	Medium
Community members may feel alienated from decisions that impact them if they are not effectively engaged prior to and during construction. Furthermore, ineffective communications during construction can exacerbate frustrations from local community members and residents.	Decision making systems	Construction and operation	Likely and Moderate	Medium	Implement an ongoing engagement and communications strategy to build positive relationships with nearby residents, ensuring they receive timely notification of any impacts. Proactively manage issues with nearby residents to avoid escalation to complaints.	Likely and Minor	Medium

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Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
There will likely be some visual impacts resulting from the construction and operation of the BESS. The Land and Visual Impact Assessment identified that visual impact ratings during the construction phase would be negligible across most viewpoints, while there would be low to very low impacts on adjacent rural residences. During the operational phase, visual impact ratings would be low to very low for rural residences and motorists on Black Forest Drive and negligible from other viewpoints assessed.	Surroundings	Construction and operation	Likely and Moderate	Medium	Maintain the existing vegetation along the Project boundaries to ensure full growth and longevity. Develop a landscape maintenance plan that includes replacement of any existing vegetation that may serve as screening if required.	Likely and Minor	Medium
The development of BESS projects is known to cause concern in communities surrounding fire hazards. These fears may cause stress and anxiety for nearby residents and communities. The Bushfire Impact Assessment identified the risk factors involved with the operation of BESS equipment including, but not limited to, electrical faults and the storage of chemicals and flammable materials. The Project is located on a site at magnified bushfire risk due to its landscape characteristics comprising unmanaged grassland, forest patches and shrubland. The broader Macedon region is identified to have limited road access routes, increasing the danger of fire escape by vehicle.	Health and wellbeing	Operation	Likely and Moderate	Medium	Proactively communicate the protective systems in place to prevent fires resulting from the BESS with residents and local communities. Engage closely with the Country Fire Authority (CFA) to ensure the site adheres to any emergency safety requirements (i.e. road widths and water available). Develop and implement a site maintenance plan that ensure the BESS adheres to safety requirements during operation.	Likely and Minor	Medium

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Impact	Social Factor	Timing	Likelihood and Magnitude	Social Impact Significance Rating	Mitigation or Enhancement Measure	Revised Likelihood and Magnitude	Residual Social Impact Significance Rating
Research demonstrates that some residents living near BESS projects have concerns about the effects of EMF and long-term health impacts. These concerns may cause anxiety and negatively impact the level of comfort residents feel living at their homes.	Health and wellbeing	Operation	Likely and Minor	Medium	Proactively address any concerns as required raised from residents and the local community about the impacts of EMF and/ or long-term health impacts. It is noted that electrical infrastructure already exists in the area, specifically the Gisborne Zone Substation located adjacent to the Project site. Offer residents living nearest to the Project site a briefing about EMF and any studies undertaken on the matter, including any assessments undertaken specific to the Project (if available).	Possible and Minor	Medium

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6.4 Social Impact Assessment Conclusion

The SEIA for the Project has identified several potential positive and negative social impacts associated with the project during its construction and operational phases.

6.4.1 Potential Positive Social Impacts

- **Improved Energy Reliability:** The project is anticipated to enhance the stability and reliability of energy supply, potentially reducing energy costs for local residents and businesses.
- **Job Creation:** The SEIA estimates the creation of approximately 137 FTE jobs during construction and 140 FTE positions during operation, which will contribute to local economic stability and improve the quality of life for workers.
- **Economic Boost:** Increased local business activity during the construction phase may stimulate economic growth as local shops and services experience higher patronage. As noted in Section 4, the Project is anticipated to generate \$22 million for the Loddon Campaspe Region during construction and a further \$49 million during operation.

6.4.2 Potential Negative Social Impacts

- **Noise Pollution:** Construction-related noise could adversely impact the amenity of nearby residents, causing nuisance and disruption during Project activities.
- **Traffic Disruptions:** An increase in vehicles for construction could lead to short-term traffic congestion affecting local communities and accessibility to services.
- **Health and Safety Concerns:** Community anxieties may arise regarding the environmental impact of battery components, EMF, fire hazards, and the adequacy of local emergency services to manage incidents.

6.4.3 Mitigation and enhancement measures

To address these concerns, several mitigation and enhancement measures have been proposed, including:

- **Construction Management Plan:** To regulate construction activities, minimise noise, and ensure that works are conducted within standard hours while providing respite options for affected neighbours.
- **Traffic Management Plan:** To minimise road disruptions and provide advance notice to residents, along with a complaint process to address any issues that arise.
- **Community Engagement Strategy:** Ongoing communication with local stakeholders to build trust, share information proactively, and ensure community voices are heard throughout the project lifecycle.

This report accompanies a range of other technical assessments which have provided mitigation measures to address the impacts of their respective topics. This SEIA supports the mitigations measures identified in these studies to promote positive social outcomes. Particular assessments of note include:

- Landscape and Visual Impact Assessment
- Traffic Impact Assessment
- Arboriculture Impact Assessment
- Bushfire Impact Assessment

In conclusion, while the Project offers significant potential benefits in terms of enhanced energy stability, job creation, and local economic stimulation, it also poses challenges that must be managed effectively. Implementing the recommended measures will be crucial in minimising negative impacts and fostering positive community relationships to ensure Project success.

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- Macedon Regional Context - <https://www.visitmacedonranges.com/village/macedon/>
- Gisborne Regional Context - <https://www.visitmacedonranges.com/village/gisborne/>
- Projects and development: <https://www.mrsc.vic.gov.au/About-Council/Projects-and-works/Projects>

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Appendix A – Media Scan Resources

The resources in Table 6-3 - Media and social media scan resources were used to inform the media and social media scan.

Table 6-3 - Media and social media scan resources

Article title	Link
Tensions flare in neighbouring Victorian communities divided on renewable energy	https://www.abc.net.au/news/2025-03-19/renewables-tensions-federal-election-divided-communities/105062600
Yarra Energy Foundation receives funding for three community batteries in Victoria, Australia	https://www.energy-storage.news/yarra-energy-foundation-receives-funding-for-three-community-batteries-in-victoria-australia/
Groundbreaking access rights for Central-West Orana REZ	https://www.energymagazine.com.au/groundbreaking-access-rights-for-central-west-orana-rez/
New report on management of large-scale battery hazards	https://www.energycouncil.com.au/analysis/new-report-on-management-of-large-scale-battery-hazards/
"Not the right fit." Community fractured as local council votes to oppose big battery project	https://reneweconomy.com.au/not-the-right-fit-community-fractured-as-local-council-votes-to-oppose-big-battery-project/
Landowners push plan for Tasmania solar and storage project	https://www.pv-magazine-australia.com/2025/04/22/landowners-push-plan-for-tasmania-solar-and-storage-project/
Alpine Shire urges residents to have say on BESS proposal	https://insidelocalgovernment.com.au/alpine-shire-urges-residents-to-have-say-on-bess-proposal/
'No place here': battery project charges forward despite ice-cold reception	https://www.moreechampion.com.au/story/8947182/kingswood-bess-sparks-debate-over-safety-and-community-benefit/
Marine Park Residents Are Outraged Over New Battery Storage Facility	https://www.bkreader.com/featured-news/marine-park-residents-are-outraged-over-new-battery-storage-facility-10347107
Construction begins on 200MWh SEC Renewable Energy Park in Victoria, Australia	https://www.energy-storage.news/subjects/market-analysis/
Victoria fast-tracks battery storage project for a sustainable energy future	https://www.invest.vic.gov.au/news-and-events/news/2025/may/victoria-fast-tracks-battery-storage-project-for-a-sustainable-energy-future
Koorangie battery now operational	https://www.energymagazine.com.au/koorangie-battery-now-operational/
EnergyAustralia's Wooren Battery project shines light for clean energy	https://business.nab.com.au/energyaustralias-wooreen-battery-project-shines-light-for-clean-energy/
Social media	
Let's talk about Battery Energy Storage Systems (BESS)	https://x.com/techAU/status/1891070192299766037
Tearing up farmland to put in battery storage facilities.	https://www.facebook.com/DaveBondy25/posts/tearing-up-farmland-to-put-in-battery-storage-facilities/1167262704761859/
Post-Rally Update: Let's RETHINK Reckless Renewables	https://x.com/jim_willmott1/status/1893601697353855054

Save Kurnell - No Battery Storage Systems	https://www.facebook.com/profile.php?id=61575219970721
Armour Township: Say NO to Lithium Battery Storage in Our Community	https://www.facebook.com/groups/4069792796587028/
Stop Reckless Renewables	https://www.facebook.com/groups/647208810809488/
Wimmera Mallee Alliance	https://www.facebook.com/groups/634935628464023/
Western Victoria Community Alliance	https://www.facebook.com/MCHPoweralliance
Wimmera Mallee Environmental & Agricultural Protection Association	https://www.facebook.com/profile.php?id=61570964219675

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Document prepared by

Aurecon Australasia Pty Ltd

ABN 54 005 139 873

Aurecon Centre

Level 8, 850 Collins Street

Docklands, Melbourne VIC 3008

PO Box 23061

Docklands VIC 8012

Australia

T +61 3 9975 3000

F +61 3 9975 3444

E melbourne@aurecongroup.com

W aurecongroup.com

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