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# HAZELWOOD NORTH SOLAR FARM

**SOCIOECONOMIC IMPACT ASSESSMENT**

MANTHOS INVESTMENTS PTY LTD | JULY 2023



[www.urbanenterprise.com.au](http://www.urbanenterprise.com.au)

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## GLOSSARY OF TERMS

<b>Direct Impacts</b>	Direct output or value of development or construction activity.
<b>Employment</b>	Employment data represents the number of people employed by businesses/organisations in each of the industry sectors in a defined region. Employment data presented in this report is destination of work data. That is, no inference is made as to where people in a defined region reside. This employment represents full-time equivalent jobs, based on a 38-hour work week.
<b>Indirect Impacts</b>	<u>Supply-Chain effects</u> – The increased output generated by servicing industry sectors in response to the direct change in output and demand; and <u>Consumption effects</u> – As output increases, so too does employment and wages and salaries paid to local employees. Part of this additional income to households is used for consumption in the local economy which leads to further increases in demand and output region
<b>Output</b>	Represents the gross revenue generated by businesses / organisations in each of the industry sectors in a defined region. Gross revenue is also referred to as total sales or total income.
<b>Gross Regional Product</b>	The total value of final goods and services produced in the region over the period of one year.
<b>Regional Exports</b>	Represents the value of goods and services exported outside of the defined region that have been generated by businesses / organisations in each of the industry sectors within the region.

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## EXECUTIVE SUMMARY

Manthos Investments Pty Ltd engaged Urban Enterprise to prepare a socioeconomic impact assessment for the proposed Hazelwood North Solar Farm project (**the project**). The assessment identifies and assesses the social and economic impacts that are expected to be delivered by the project.

### PROJECT SUMMARY

The proposed Hazelwood North Solar Farm project will include the following key features:

- Solar energy generation capacity of 450 MWp AC;
- 450 MW battery storage capacity (1800 MWh);
- Ancillary infrastructure including sub-stations; and
- Agricultural grazing accommodating approximately 7,000-7,800 head of sheep.

The project is proposed to be constructed on a 1,079 ha site south of Princes Highway between Morwell and Traralgon.

### POLICY CONTEXT

- Gippsland has historically generated a substantial share of Victoria and Australia's electricity largely through coal fired power stations in the Latrobe Valley.
- Federal and state policy is accelerating the need to transition to renewables, including more ambitious targets for renewable energy generation and reduction in greenhouse emissions.
- Renewable energy targets, incentives and investment are driving major shifts in the way energy is produced, stored and transported throughout Victoria. New sources of energy and forms of production are planned to complement or replace traditional equivalents. Solar energy is considered a critical part of the energy transition and is recognised as a key growth area to support future energy needs.
- Gippsland is one of six Renewable Energy Zones (REZ) in Victoria. REZ's are priority areas with the greatest potential for renewable energy generation.
- Given the historical role that Gippsland has played in Victoria's energy industry, the region possesses an existing network of infrastructure and labour that can support an important growth phase for the state's renewable energy sector.

It is within this context that the Hazelwood North Solar Farm proposal has been developed. This project seeks to respond to the urgent need to transition to cleaner energy production, leverage the region's existing economic specialisations in traditional energy generation, and support the state's ongoing transition to renewables.







### STRATEGIC & ECONOMIC CONTEXT

- The project aligns and satisfies key environmental, economic and social objectives at a local, regional and state level.
- Renewable energy projects such as the proposal typically generate a range of economic benefits, with the most substantial impacts generated during the construction phase.
- Agrisolar projects create the unique advantage of co-locating solar energy production with agricultural uses, in-turn maximising the productive use of the land.
- Traditional energy generation (namely coal) is highly specialised in Latrobe City's economy, with a well-developed supply-chain. There are synergies with the old and new energy supply-chain, particularly general construction activities such as civil construction and site works, trade workers and labourers, machinery operators, transport and logistics.






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- Not all construction phase jobs will be sourced or generated within Latrobe City. It is likely that solar panel manufacturing capabilities will be drawn from outside of Gippsland. Specialised technicians (design, engineering) are also likely to be imported to support construction and installation.
- Increased investment in renewable energy projects will encourage and support the long term transition of the local economy. A critical mass of renewable energy projects will increase the appeal for new business investment to locate in Latrobe City and Gippsland, and encourage agglomeration.

## SOCIOECONOMIC IMPACT SUMMARY

No.	Impact	Summary	Main stakeholders/ and industries affected
<b>SHORT TERM</b>			
1	 <b>Economic stimulus construction phase</b>	The estimated construction investment of \$646 million is estimated to generate \$1.89 billion in total output (i.e. direct and indirect) and support 1,695 (FTE) jobs during the construction phase, including up to 500 direct jobs.	Regional and state construction industry: civil trades, labourers, machinery operators, technicians.
2	 <b>Construction amenity impacts</b>	Amenity impacts such as noise and traffic may arise during the construction phase. The findings from the technical studies indicate that impacts will be minimal. Appropriate management and mitigation measures are proposed to minimise impacts (see relevant technical studies).	Local residents (proximate), passing travellers.
3	 <b>Competition for labour force</b>	Several renewable energy projects are planned in Latrobe City, and a diverse range of projects in the broader Gippsland region.  Labour requirements during the construction phase for HNSF will be sourced from a local, regional and state catchment. Specialised skills are anticipated to be imported from outside of the municipality and region such as technicians. More general trades and construction skills could be sourced from within the local and regional area, given that there is a strong base of construction workers to draw from in Latrobe City, with close to 3,000 jobs (~9% of all employed persons).  Some jobs and skills required to deliver other renewable energy projects with similar timing of delivery could overlap with the construction phase for HNSF. If this occurs, it has the potential to increase competition for local labour, and lead to tensions and delays across projects.	Major projects planned in-region.
4	 <b>Cumulative demand for housing and accommodation</b>	Jobs attracted from outside of the region will likely require a mix of rental housing and commercial accommodation within reasonable proximity to the project. Viewing HNSF in isolation, Morwell and Traralgon will have adequate rental property and commercial room capacity to meet need during the construction phase. However, if all renewable projects are delivered across Gippsland (as planned), servicing the cumulative housing needs could present a challenge, particularly for rental housing.	Local accommodation businesses, and local residents (housing market only)
<b>LONG TERM &amp; ONGOING</b>			
1	 <b>Ongoing economic impacts Operational phase</b>	The ongoing operation of the solar farm is estimated to generate \$69 million in total economic output and support 41 (FTE) jobs per annum, which includes 11 direct jobs (FTE).	Local and regional economy
2	 <b>Loss of agricultural production value</b>	Although there is expected to be a slight reduction in the quantum of land used for agricultural purposes, the proposed agrisolar project will allow grazing to prevail on site. The land used for cropping land will effectively be replaced with grazing, accommodating around 7,000-7,800 sheep. The economic impact is expected to be marginal.	Local and regional agriculture industry

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3		<b>Assist in state and national energy transition</b>	450 MWh AC of solar energy capacity will assist Victoria's transition to new energy, delivering more affordable, reliable and secure electricity to consumers. The energy capacity is equivalent to powering around 130,000 homes.	State and national economy.
4		<b>Support local economic transition</b>	Traditional energy (coal mining, power) is critical to the local economy, but will continue to be phased out over time Supporting cumulative investment in new energy will encourage local economic transition in a related sector; encouraging a 'pivot' for the energy supply-chain and skills base alongside opportunities for new business investment. A critical mass of renewable energy projects such as solar and wind in Latrobe City and Gippsland will encourage agglomeration, which could lead to further supply-chain maturity and integration.	Local economy
5		<b>Community funds</b>	The proponent proposes to establish a community fund to support local projects and programs that deliver community benefits. Estimated funds that will flow to community programs is between \$65-\$400k per annum.	Local community
6		<b>Municipal revenue</b>	Council will receive revenue in the form of an annual charge associated with solar energy generation. The estimated revenue delivered to Council in year 1 is in the order of \$0.59 million (at full generation capacity).	Latrobe City Council. Local economy and community.
7		<b>Operational amenity impacts</b>	Once built and operational, the physical infrastructure of the solar farm will create minimal long term amenity impacts relating to visual amenity, noise, traffic and so on. Appropriate management and mitigation measures are proposed to minimise impacts (see relevant technical studies).	Local residents (proximate), passing travellers.

## IMPACT EVALUATION

The significance of impacts are evaluated by considering the expected magnitude (low, moderate and high) and the likelihood of the impact occurring during the lifecycle of the project.

Planned and recommended management measures have been included (where relevant) to optimise benefits and minimise negative impacts.

## Construction Phase Impact Evaluation & Management Measures

No.	Impact	Magnitude of Impact	Likelihood	Management measure(s)	Recommendations
1	<b>Economic stimulus construction phase</b>	Moderate	Likely	None identified.	Advocate for use of local suppliers (where possible) using platforms such as the Industry Capability Network.  Liaise with regional education and training providers to notify of job and skill requirements for HNSF.
2	<b>Amenity disruptions from construction activities</b>	Low	Likely	Provide regular updates and notifications about the project and potential disruptions to nearby landowners.  Public community consultation sessions held in-region.	Refer to other technical studies for planned and recommended management measures relating to amenity impacts during the construction phase.
3	<b>Competition for labour force</b>	Moderate	Possible	None identified.	Liaise with other renewable energy project proponents to discuss synergies with jobs and skills and potential for resource sharing (if required).

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					Liaise with regional education and training providers to notify of job and skill requirements for HNSF.
4	Cumulative demand for housing and accommodation	Moderate	Possible	None identified.	None.

## Operational Phase Impact Evaluation & Management Measures

No.	Impact	Magnitude of Impact	Likelihood	Planned management measure(s)	Recommendations
1	Ongoing economic impacts Operational phase	Low	Highly likely	None identified.	Advocate for the use of local suppliers (where possible) using platforms such as the Industry Capability Network.  Liaise with regional education and training providers to notify of job and skill requirements and opportunities for HNSF.
2	Loss of agricultural production value	Low	Highly likely	The project proposes to replace land currently used for cropping with sheep grazing (7,000-7,800), which will allow some agricultural production and the associated value to prevail.	None.
3	Assist in state and national energy transition	Low - Moderate	Highly likely	None identified.	None.
4	Support local economic transition	Moderate	Likely	None identified.	Advocate for use of local suppliers for operation and maintenance requirements (where possible) using platforms such as the Industry Capability Network.  Liaise with education and skills providers to notify of potential job opportunities at HNSF.
5	Community funds	Low	Likely	The proponent proposes to establish a community fund to support local projects and programs that deliver community benefits.	None.
6	Municipal revenue	Low	Highly Likely	None identified.	None.
7	Amenity impacts	Low	Likely	Technical studies prepared to assess potential amenity impacts and recommend management measures.  Public community consultation sessions held in-region.	Refer to other technical studies for planned and recommended management measures relating to ongoing amenity impacts.

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# 1. BACKGROUND

## 1.1. INTRODUCTION

The Hazelwood North Solar Farm (HNSF) project is a proposed agrisolar farm, situated on a 1,079 hectare site between Traralgon and Morwell in Latrobe City. The project is estimated to generate around 450 MWp AC of electricity, and includes 450 MW capacity of battery storage. The project will also allow large areas of agricultural uses on the site to continue in the form of sheep grazing.

## 1.2. ENGAGEMENT & SCOPE

Manthos Investments Pty Ltd engaged Urban Enterprise to prepare an assessment of socioeconomic impact for the proposal. The purpose of this report is to identify and assess the suite of socioeconomic impacts that could be delivered by the project.

Economic impacts relate to the direct and indirect economic activities that are generated through the construction and operational phase of the project.

Social impacts relate to changes (both positive and negative) that may occur to the way people live and the environment during the project's lifecycle.

The scope of this analysis includes the following:

- Provide an overview of the proposal, including location, description of key elements, construction investment and development timeline;
- Assess the existing economic, strategic and policy context that is relevant to the proposal to determine the extent of alignment;
- Complete a literature review, case study analysis and review other relevant technical studies to identify potential socioeconomic impacts generated by solar farm (and Agrisolar) projects;
- Prepare an impact framework that identifies and describes the expected socioeconomic impacts that may arise during the construction and operational phase of the project;
- Estimate the economic impact of benefits (where possible) using the input-output (I-O) method of analysis;
- Assess the magnitude and likelihood of impacts, and identify planned management measures (where relevant) to optimise benefits and minimise negative impacts.

## 1.3. INFORMATION SOURCES

The following sources of information have been used to inform this assessment:

- Latrobe City economic profile, Remplan 2021;
- Census of Population & Housing ABS, Latrobe City, 2021;
- Business Counts, Latrobe City 2022;
- Unemployment rate, National Skills Commission, 2022;
- HNSF Landscape and Visual Impact Assessment, Moir Landscape Architecture, 2023;
- HNSF Noise Impact Assessment, SLR, 2023;
- HNSF Glint and Glare Assessment, SLR, 2023;
- HNSF Agricultural Assessment, Ag-Challenge Consulting, 2023;
- HNSF Flora and Fauna Assessment, Nature Advisory, 2023;
- HNSF Fire and Bushfire Assessment, Nature Advisory, 2023;

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- HNSF Safety Management Study, Riskcon Engineering, 2023;
- HNSF Traffic Engineering Assessment, Traffix Group, 2023;
- HNSF Aviation Assessment, Rehbain Airport Consulting, 2023;
- HNSF Aboriginal Cultural Heritage Impact Assessment, Tardis Archaeology, 2023; and
- HNSF Hydrology and Flood Impact Assessment, Venant Solutions, 2023.

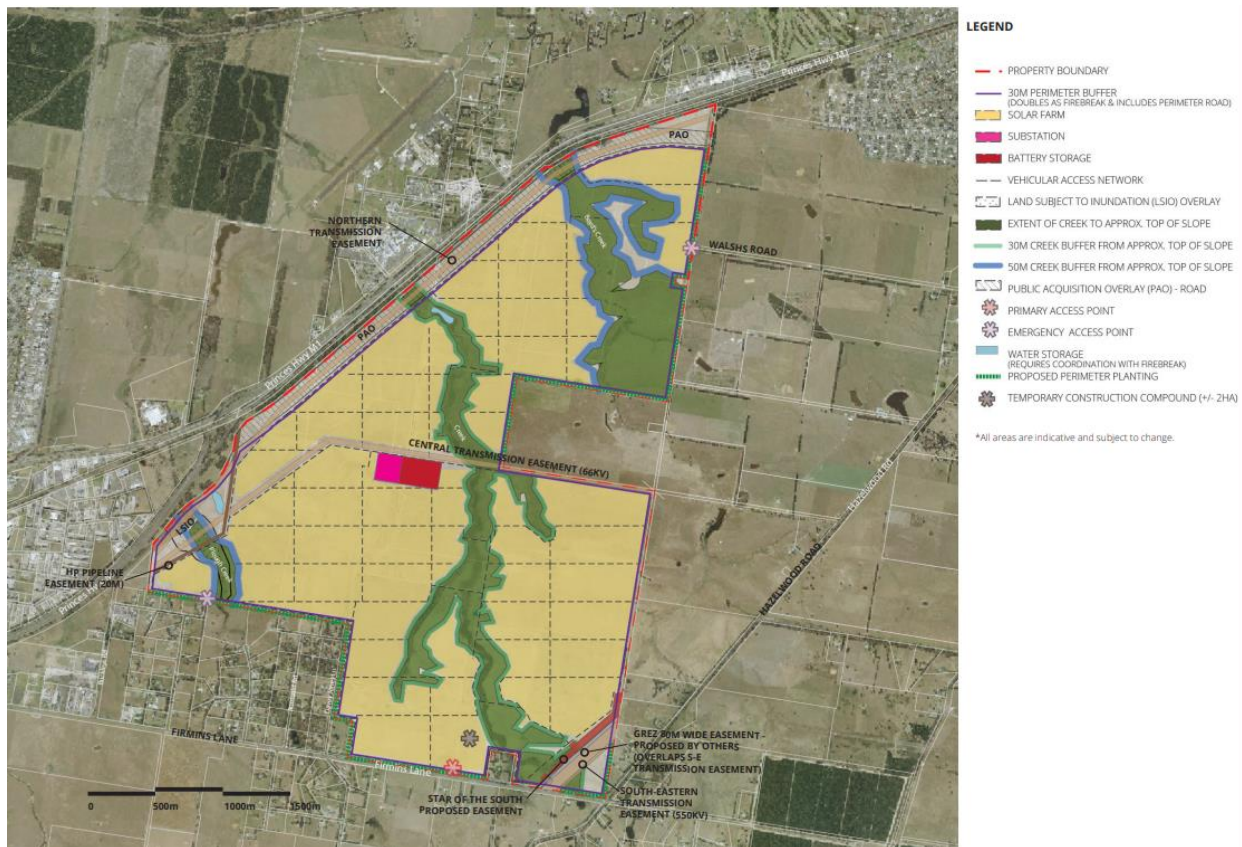
## 1.4. PROJECT PROPOSAL

The proposed HNSF project includes the following key features:

- Solar energy generation capacity of 450 MWp AC;
- 450 MW battery storage capacity (1800 MWh);
- Agricultural grazing with around 7,000-7,800 head of sheep.

The facility is proposed to be built on a 1,079 ha site south of Princes Highway between Morwell and Traralgon, as shown in Figure 1.

### F1. HNSF PRELIMINARY MASTERPLAN



Source: Urban Fold, 2023

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## 2. STRATEGIC & ECONOMIC CONTEXT

### 2.1. INTRODUCTION

This section summarises the strategic and economic context for the project, including local and state objectives for renewable energy investment, generation and regional economic development.

This section also profile's Latrobe City's economy to assess the extent to which the local supply-chain could integrate and benefit from the HNSF investment.

### 2.2. WHY IS THE PROJECT NEEDED?

- **Historically Gippsland has generated a substantial share of Victoria electricity largely through coal fired power stations in the Latrobe Valley.**
- **Renewable energy targets, incentives and investments are driving major shifts in the way energy is produced, stored and transported throughout Victoria. New sources of energy and forms of production are planned to complement or replace traditional equivalents. Solar energy is considered a critical part of the energy transition and is recognised as a key growth area to support future energy needs.**
- **Federal and state policy is accelerating the need to transition to renewables, including more ambitious targets for renewable energy generation and reduction in greenhouse emissions.**
- **Gippsland is one of six Renewable Energy Zones (REZ) in Victoria. REZ's are priority areas with the greatest potential for renewable energy generation.**
- **Given the historical role that Gippsland has played in Victoria's energy industry, the region possesses a substantial level of existing network infrastructure and labour that is well-suited to supporting growth in the state's renewable energy sector.**

### 2.3. STRATEGIC ALIGNMENT

Government policy is accelerating the transition to renewables, including more ambitious targets for renewable energy generation and greenhouse gas emissions reduction. Table 1 outlines the state, regional and local policies and strategies that support the delivery of the project, including alignment with environmental, economic, social and community objectives.

The state government is steadfast on expediting the clean energy transition, recently committing to reach 95 per cent renewable electricity in the state by 2035, and net zero emissions by 2045.

At the regional level, there is strong support for ongoing development of the renewable energy industry, with a focus on pursuing opportunities for economic, employment and supply-chain transition from old traditional energy to renewable energy.

*"The international and domestic focus on renewable energy and climate change mitigation is driving opportunities to activate clean energy and carbon capture and storage potential, and positions the region to supplement existing strengths in energy production."*<sup>1</sup>

<sup>1</sup> Gippsland Regional Economic Development Strategy, 2022

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Local policy is also focused on opportunities for the local economy to capitalise on growth in the renewable energy industry. The planning scheme identifies a key objective to enable the community to prosper from the transition to a low carbon future by supporting the diversification of employment opportunities.

## T1. STRATEGIC & POLICY SUMMARY & ALIGNMENT

	Relevant Objectives & Actions	Project alignment
<b>State</b>		
Victoria's Climate Change Act (2017)	<ul style="list-style-type: none"> <li>Aim to achieve net zero greenhouse gas emissions by 2050 and a climate-resilient community and economy</li> </ul>	<ul style="list-style-type: none"> <li>The project will assist the state in achieving its emissions target through the provision of additional renewable energy</li> </ul>
Victorian Renewable Energy Zones Development Plan Directions Paper (2021)	<ul style="list-style-type: none"> <li>Promote transmission upgrades in areas identified for renewable energy projects</li> </ul>	<ul style="list-style-type: none"> <li>The project is located within the Gippsland Renewable Energy Zone (G-REZ)</li> </ul>
Victoria's Climate Change Strategy (2021)	<ul style="list-style-type: none"> <li>Accelerate Victoria's transition to a clean and efficient energy future.</li> </ul>	<ul style="list-style-type: none"> <li>The project will provide clean energy into the grid once complete</li> </ul>
<b>Regional</b>		
Gippsland Regional Economic Development Strategy (2022)	<ul style="list-style-type: none"> <li>Pursue economic opportunities emerging from energy transition.</li> <li>Accelerate advanced manufacturing capabilities in the region.</li> </ul>	<ul style="list-style-type: none"> <li>The project will assist in the clean energy transition in Gippsland and also has the potential to support the regional advanced manufacturing and food and fibre industries</li> </ul>
Gippsland Regional Plan 2020-25 (2019)	<ul style="list-style-type: none"> <li>Renewable, clean, and community energy initiatives identified as game changers for the local economy</li> </ul>	<ul style="list-style-type: none"> <li>The project will generate substantial direct and indirect economic benefits for the local economy</li> </ul>
Latrobe Valley New Energy Jobs and Investment Prospectus (2018)	<ul style="list-style-type: none"> <li>New energy identified as one of Gippsland's future growth industries.</li> </ul>	<ul style="list-style-type: none"> <li>The project will support the development of the clean energy industry in Gippsland</li> </ul>
<b>Local</b>		
Latrobe City Council Plan 2017-2021	<ul style="list-style-type: none"> <li>Support job creation and industry diversification to enable economic growth in Latrobe City.</li> </ul>	<ul style="list-style-type: none"> <li>The project will generate substantial local employment and assist in diversifying the local economy</li> </ul>
Latrobe City Council EDS 2016-2020	<ul style="list-style-type: none"> <li>Actively pursue long term economic prosperity for Latrobe City.</li> <li>Actively pursue further diversification of business and industry in the municipality.</li> <li>Support long term job security and creation of new employment in Latrobe City.</li> </ul>	<ul style="list-style-type: none"> <li>The project will generate substantial direct and indirect economic benefits for the local economy, including local employment opportunities</li> </ul>
Latrobe Planning Scheme	<ul style="list-style-type: none"> <li>Enable the community to prosper from the transition to a low carbon future by supporting the diversification of employment opportunities.</li> <li>Encourage alternative energy industries, including renewable energy and clean coal in locations with convenient access to existing energy distribution infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>The project will assist in the clean energy transition in Latrobe and will leverage existing transmission infrastructure.</li> </ul>

Source: Urban Enterprise, 2022

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## 2.4. ECONOMIC CONTEXT

This section provides an overview of Latrobe City’s existing economic and employment capabilities to understand the potential for local supply-chain integration, and determine the extent to which the economy is positioned to support and capitalise on the renewable energy investment.

### 2.4.1. ECONOMIC CAPABILITIES

Latrobe City is a critical component of the Gippsland<sup>2</sup> economy, making the largest contribution of any municipality across key economic indicators including employment, Gross Regional Product (GRP), output and regional exports.

The primary drivers of Latrobe City’s economy are the energy sector, farming (coal resource), agriculture, forestry and rural-service industry. Latrobe’s traditional energy sector underpins its economy with major power generators producing approximately 90 per cent of Victoria’s electricity. Secondary drivers are in manufacturing, population services (retail, health, education) and tourism.

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With the ongoing transition away from coal fired power and traditional sources of energy generation, there is a need for Latrobe City’s economy to also ‘pivot’ to diversify the industry composition and skills base.

New energy is a clear opportunity to utilise existing transmission infrastructure, as well as business supply-chain and skills that are transferrable. Many renewable energy are already proposed in the G-REZ pipeline, including solar, wind, battery and hydrogen in the Latrobe Valley. A critical mass of renewable energy projects will encourage new business in the region, and present economic opportunities for Latrobe City.

### F2. LATROBE CITY ECONOMY AT A GLANCE

<b>Gross Regional Product</b> \$6.17 Billion (32% of Gippsland region)	<b>Output</b> \$14.13 Billion (35% of Gippsland region)	<b>Population</b> 77,318	<b>Unemployment Rate (June 2022)</b> 6.6%
<b>Regional Exports</b> \$6.52 Billion (46% of Gippsland region)		<b>Businesses</b> 4,339	<b>Jobs</b> 32,244
<b>Top 5 Exporting Industries</b> <ol style="list-style-type: none"> <li>Electricity, Gas, Water &amp; Waste</li> <li>Manufacturing</li> <li>Mining</li> <li>Public Administration &amp; Safety</li> <li>Construction</li> </ol>		<b>Top 5 Output Industries</b> <ol style="list-style-type: none"> <li>Electricity, Gas, Water &amp; Waste</li> <li>Manufacturing</li> <li>Construction</li> <li>Rental, Hiring &amp; Real Estate</li> <li>Mining</li> </ol>	

Source Remplan 2021, Census of Population & Housing ABS, 2021, ABS Business Counts 2022, National Skills Commission, 2022

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<sup>2</sup> This region includes the municipalities of Latrobe, Wellington, Baw Baw, South Gippsland and East Gippsland.



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## 2.4.2. RENEWABLE ENERGY SUPPLY-CHAIN NEEDS

Supply chain opportunities will present for Latrobe City businesses in activities that primarily support the construction and operational phase of the project. A summary of direct project supply-chain opportunities associated with a generic solar and wind farm project is outlined in Table 2.

There will also be indirect economic opportunities for population service industries on the back of worker demand for retail, hospitality and accommodation.

### T2. SUPPLY-CHAIN OPPORTUNITIES, RENEWABLE ENERGY

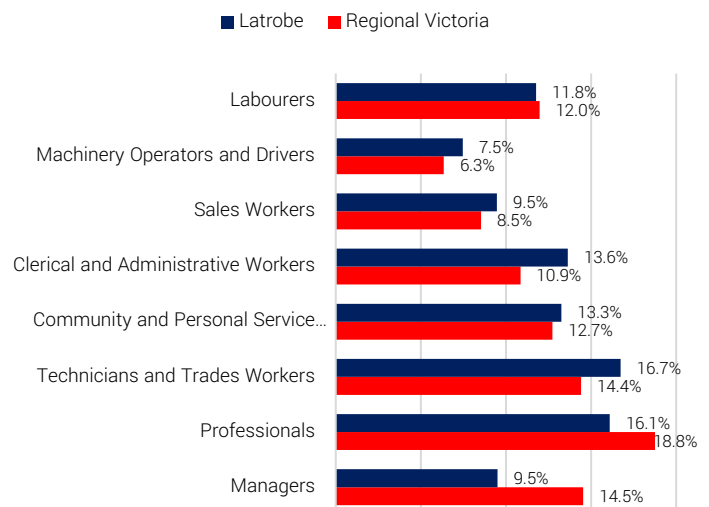
Phase	Industry Sector	Activity & Jobs
Pre-development & Planning 	<b>Professional and technical services</b>	<ul style="list-style-type: none"> <li>Engineering and surveying</li> <li>Planning, legal and financial services</li> <li>Environmental services</li> <li>Project management and administration</li> </ul>
Construction & Operation 	<b>Construction and trades</b>	<ul style="list-style-type: none"> <li>Electricians and technicians</li> <li>Metal workers, welders and fitters</li> <li>Labourers</li> <li>Machinery operators</li> <li>Site preparatory and civil construction works</li> </ul>
	<b>Manufacturing and wholesale trade</b>	<ul style="list-style-type: none"> <li>Parts and materials</li> <li>Equipment</li> <li>Machinery</li> </ul>
	<b>Transport and logistics</b>	<ul style="list-style-type: none"> <li>Truck drivers</li> <li>Machinery operators</li> <li>Machine and equipment servicing</li> </ul>

Source: Urban Enterprise, 2022

## 2.4.3. OCCUPATIONS

Analysis of occupations held by Latrobe employed residents indicates an alignment of local skills with several jobs required during the construction phase of the projects. This includes a higher share of technicians and trade workers compared with regional Victoria.

### F3. OCCUPATIONS, LATROBE CITY, 2021



Source: Census of Population & Housing, ABS, 2021

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## 2.4.4. EMPLOYMENT

The unemployment rate in Latrobe City was 6.6% as at June 2022, which is more than double the rate in the Gippsland region (3.0%). The higher rate of unemployment suggests that there is some capacity to increase participation within the existing labour market.


Latrobe’s employment mix is well-matched to some of the general construction activities required to deliver and maintain renewable energy projects. Construction, manufacturing and electricity, gas, water and waste services support a substantial share of employment in Latrobe. There is opportunity for these industries to support the delivery, operation and maintenance requirements of HNSF.

Currently, solar manufacturing capabilities do not exist in Latrobe City or the Gippsland region, thus will be required to be supplied from elsewhere. Further, more specialised technicians and engineers that will be required during the development phase are unlikely to originate from Latrobe City meaning that these types of jobs and skills will need to be imported.

### T3. EMPLOYMENT BY INDUSTRY, LATROBE CITY

Industry	Employment (2021)
Health Care and Social Assistance	6,308 20%
Retail Trade	3,330 10%
Public Administration and Safety	2,955 9.2%
 <b>Construction</b>	2,765 8.6%
Education and Training	2,746 8.5%
 <b>Electricity, Gas, Water and Waste Services</b>	2,335 7.2%
 <b>Manufacturing</b>	2,138 6.6%
Accommodation and Food Services	2,100 6.5%
Other Services	1,290 4.0%
 <b>Professional, Scientific and Technical Services</b>	1,080 3.3%
 <b>Transport, Postal and Warehousing</b>	1,064 3.3%
Administrative and Support Services	762 2.4%
Agriculture, Forestry and Fishing	651 2.0%
 <b>Wholesale Trade</b>	559 1.7%
Financial and Insurance Services	526 1.6%
Information Media and Telecommunications	477 1.5%
Mining	422 1.3%
Rental, Hiring and Real Estate Services	394 1.2%
Arts and Recreation Services	342 1.1%
<b>Total</b>	<b>32,244 100%</b>

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Source: Census of Employment, Place of Work, ABS, 2021 |  key renewable energy supply-chain sectors.

## 2.5. KEY POINTS

- **The project aligns and satisfies key environmental, economic and social objectives at a local, regional and state level.**
- **Renewable energy projects such as the proposal typically generate a range of economic benefits, with the most substantial impacts generated during the construction phase.**
- **Agrisolar projects create the unique advantage of co-locating solar energy production with agricultural uses, in-turn maximising the productive use of the land.**
- **Traditional energy generation (namely coal) is highly specialised in Latrobe City’s economy, with a well-developed supply-chain. There are synergies with the old and new energy supply-chain, particularly in activities that support generic construction, trade, machinery and transport.**

- Solar panel manufacturing capabilities will be drawn from outside of Gippsland. Specialised technicians (design, engineering) are also likely to be imported to support construction and installation.
- Increased investment in renewable energy projects will encourage and support the long term transition of the local economy. A critical mass of renewable energy projects will increase the appeal for new business entrants to locate in Latrobe City and Gippsland.

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## 3. SOCIOECONOMIC IMPACT ASSESSMENT

### 3.1. INTRODUCTION

This section identifies and assesses the potential socioeconomic impacts that could arise during the construction phase and operational phase of the project.

### 3.2. POTENTIAL SOCIOECONOMIC IMPACTS OF SOLAR FARMS

To assist with identifying potential impacts, the following approach has been adopted:

- Review existing literature and case study socioeconomic impact assessments (refer to Appendix B) for comparable solar farm projects across Australia; and
- Review technical studies prepared for the HNSF to identify relevant social impacts.

#### 3.2.1. LITERATURE REVIEW

The findings from the literature review and case study analysis are as follows:

- The most substantial economic impacts such as direct and indirect job creation and business supply-chain generally occur during the construction phase.
- Economic impacts during the operational phase include cumulative demand for on-site employment to service and maintain the infrastructure.
- The state-wide benefits primarily relate to long term cost savings associated with renewable energy sources of generation and environmental benefits of renewable energy production.
- Isolated local and private beneficiaries include landowners who provide the right to use their land, and an increase in municipal rate revenue collected by Council, which is ultimately re-directed for community benefit.
- In many cases, renewable energy developers and components provide funds to support local community programs and initiatives.
- Social impacts typically relate to:
  - Amenity impacts such as noise, visual and traffic during construction;
  - Community concerns around property rights and potential impacts to the natural environment, health and wellbeing.
  - Increased pressure on local infrastructure and services due to cumulative demand from seasonal labour and major projects undertaken concurrently.

Key socioeconomic impacts of solar farms, derived from the literature review, are summarised in Table 4.

#### T4. KEY SOCIOECONOMIC IMPACTS, SOLAR FARMS

Impact category	Description
Agrisolar	Agrisolar projects include special solar panels that allow for existing agricultural grazing to continue on-site. While research into agrisolar is an emerging field, a number of international studies conducted in recent years have suggested strong synergies in the co-location of agriculture and solar energy production for farming productivity, water conservation and higher renewable energy production. <sup>3</sup> The integration of solar energy and grazing within a single site provides the opportunity for renewable energy operators and landholders/farmers to work in partnership to maximise the productive use of rural land and reduce operating costs for all parties.

<sup>3</sup> Barron-Gafford et al. (2019) Agrivoltaics provide mutual benefits across

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<b>Construction phase impacts</b>	<p>Output and jobs associated with the construction phase of a project. These are typically substantial and there is scope for local benefits if there is alignment with the local business and employment profile.</p> <p>Other impacts associated with the construction phase include:</p> <ul style="list-style-type: none"> <li>▪ Amenity disruptions from construction activities (noise, traffic etc).</li> <li>▪ Cumulative uplift in demand for worker housing, accommodation, retail and services.</li> <li>▪ Competition for skills and labour between other renewable energy and major projects.</li> </ul>
<b>Operational phase impacts</b>	<p>Output and jobs during the life of the project. These are often substantially lower than the construction phase impacts, albeit over a much longer period.</p>
<b>Energy consumption</b>	<p>The capacity to generate renewable energy for state consumers (e.g., housing). The power that is generated from renewable energy projects typically gets exported into the national energy market, and therefore benefits all consumers of electricity.</p>
<b>Remuneration for landowners</b>	<p>Landowners are remunerated for the right to use their land for the construction and operation of a renewable energy project, in-turn delivering financial benefits to the private landowner(s).<sup>4</sup></p>
<b>Council rates</b>	<p>Local government receives annual payments from renewable energy generators under state government legislation. The payment combines a fixed charge with a variable charge based on a power station's capacity.<sup>5</sup></p>
<b>Community fund</b>	<p>Renewable energy projects often offer to provide a community fund associated the operational phase of a facility. This typically takes the form of an annual payment that can be used to support local projects and programs.</p>
<b>Property values*</b>	<p>To date, there are extremely limited domestic studies measuring the impact that proximity to solar farms has on surrounding property values. This includes the effect that visual amenity impacts caused by solar farm development has on surrounding residential property prices.</p> <p>Research undertaken by Urbis in 2016 sought to isolate the impacts of wind farms on property prices.<sup>6</sup> The report states that there is insufficient sales data to provide a definitive answer to whether wind farm development in NSW impacts on surrounding land values. The potential impacts of wind farms and solar farms on property values should not be compared given the fundamental difference in infrastructure scale and characteristics.</p> <p>Regular fluctuations in property values are subject to a number of variables including cyclical market forces, fiscal and economic conditions, financial capacity of individuals, and site/location and amenity characteristics of the property and surrounding area.</p>
<b>Social impacts</b>	<p>Social impacts typically include the following:<sup>7</sup></p> <ul style="list-style-type: none"> <li>▪ Amenity impacts such as noise, visual and traffic;</li> <li>▪ Community concerns around property rights and potential impacts to the natural environment, health and wellbeing.</li> <li>▪ Increased pressure on local infrastructure and services due to cumulative demand from seasonal labour and major projects undertaken concurrently.</li> </ul>

Source: Refer to footnotes. \*Given the lack of research that is available, an assessment of this impact has been excluded.

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<sup>3</sup> the food energy water nexus in drylands. Nature Sustainability, Vol 2, Sep 2019, 851.

<sup>4</sup> Host Landowner Negotiations, Australian Energy Infrastructure Commission, 2020

<sup>5</sup> Section 94 (6A) Electricity Industry Act 2000

<sup>6</sup> Review of the Impact of Wind Farms on Property Prices, Urbis, 2016 for the NSW Government

<sup>7</sup> Findings from case study analysis, Urban Enterprise, 2022

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## 3.2.2. REVIEW OF TECHNICAL STUDIES

Several technical studies have been prepared for the HNSF that are relevant to the SEIA. Findings and conclusions are summarised in this section.

### AGRICULTURAL ASSESSMENT

- The current agricultural uses includes sheep and cattle grazing, fodder production and dryland cropping.
- Approx. 400ha hectares is used for cropping and 700ha for pasture.
- The current stock numbers are around 3000 crossbred ewes, and 100 cows with calves at foot which are grazed on 700 hectares.
- The soils are not high quality or niche soils, the rainfall is moderate and variable with a pronounced dry season each year, and there is no specific farm or public infrastructure which makes the land inherently productive or special from an agricultural perspective.
- The combined parcel of land is not significant agricultural land, in that it is not unique, not highly productive, not highly versatile for a multiple range of uses, and not located within an irrigation district.
- The proposed change of primary land use to solar energy production will mean that the current agricultural versatility (cropping or grazing) will be reduced in favour of energy production.
- The proposal will alter the nature of the farm. Cropping will no longer be practical. With appropriate design of the panels and improvement of stock water availability, sheep will be able to graze beneath the panels, thus retaining some agricultural productivity.

### LANDSCAPE AND VISUAL IMPACT ASSESSMENT

- The project will likely be visible from areas along the Princess Highway. Due to their proximity, residential settlements to the south of the Project along Groppi Road, Romuald Road, Firmins Lane and Hazelwood Road will potentially have direct views of the Project.
- The project will result in minor modifications to the existing visual landscape.
- Limited prospect to view the project from publicly accessible land (within the study area).
- No accessible viewing locations to view the Project in its entirety (within the study area).
- Publicly accessible viewing locations are limited to public roads which transverse the landscape. These roads have a high frequency of use providing access to dwellings or connecting towns.
- The highest visual effect is likely to be experienced from areas within close proximity to the site. A total of 199 dwellings located within 2,000 metres of the project.
- Approximately 31 dwellings were identified as having a 75-100% potential visibility towards the project.
- Approximately 37 dwellings were identified as having only 1-25% potential visibility towards the project.
- Proposed vegetation to the eastern boundary of the Project will significantly reduce the overall impact from the east and southeast of the Project. Additionally, mitigation planting along the southern boundary of the Project would reduce the potential visual impact along Romuald Road, Groppi Road, Malcolm Way and Firmins Lane. This mitigation will be effective in integrating the development into the surrounding landscape.
- The proposed development could be undertaken whilst maintaining the core landscape character of the area, and have a minimal visual impact on the surrounding visual landscape.
- The landscape has the capacity to absorb low scale visual changes associated with the Project if the recommended mitigation strategies are adopted and managed effectively. Although alteration to the existing visual landscape is possible during the construction stage, over time the Project would present as a minor alterations to the regional landscape.

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## TRAFFIC ENGINEERING ASSESSMENT

### Car parking

- The car parking demands for the site are likely to be limited to staff, with only a minor level of visitor demand associated with contractors.
- Car parking should be provided at a rate of least one car space per employee on the site at the peak time. 13 car spaces should be provided on-site to accommodate the peak employee demand (11 spaces) plus occasional visitor parking demands during the operational phase.
- A small number of car spaces should be provided for the Agrisolar component, but car parking demands are expected to be low; consistent with existing agricultural operations.

### Day to day operations

- There would be no more than 11 vehicle movements generated in any one hour, and no more than 22 vehicle movements per day.
- Infrequent truck visits expected each month to pick-up repairs and replace spare solar panels will have negligible impact.
- Additional daily traffic generated will increase by less than 1% of existing daily average volumes.

### Construction phase:

- Up to 400 staff vehicle movements (arrivals and departures) per day would be generated during the construction phase.
- Construction staff arrival and departures to be spread throughout the morning and afternoon peak periods and therefore won't entirely coincide with the road network commuter peak hours.
- Anticipated daily volumes of trucks will be in the order of 100 per day (200 total movements), but spread out throughout the day.
- The construction phase will generate approximately 600 vehicle movements per day, confined to Firmins Lane (i.e. arrivals and departures). The existing infrastructure of Firmins Lane has sufficient capacity to accommodate this level of temporary traffic.

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### Conclusions

- A total of 13 car spaces should be provided on-site to accommodate the predicted peak staff parking demands and occasional visitors during the operation period of the solar farm. In addition, a small number of car spaces should be provided for the Agrisolar component, noting associated car parking demands are expected to be low as consistent with existing agricultural operations.
- The proposed primary vehicle access connection with Firmins Lane should be upgraded at the commencement of the construction stage to include auxiliary left-turn (AUL) and channelised right-turn treatments (CHR).
- The existing vehicle access to Walshs Road is to be suitably retained as a secondary access for limited staff and service vehicle access during the ongoing operation period.
- Emergency vehicles will access the site via the Firmins Lane or Walshs Road access connections. Furthermore, a vehicle access gate is to be provided in the southwest part of the site for emergency vehicle access only via Groppi Road.
- Loading activities can be appropriately accommodated within the site via the network of internal service roads.
- There is no statutory requirement or anticipated demand to provide bicycle parking.
- The traffic impact assessment requirements of the Solar Energy Facilities Design and Development Guideline associated with the construction stage of the project have been sufficiently addressed for the purposes of town planning approval with further details to be provided in the future as part of condition(s) of permit.

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- There are no traffic engineering reasons why a planning permit for the proposed Hazelwood North Solar Farm, should be refused, subject to appropriate conditions.

## NOISE IMPACT ASSESSMENT

- **Noise from construction activities:** Scheduling construction activities to the EPA normal working hours (e.g. day period 7.00 am to 6.00 pm), community engagement and best practice noise management controls, regular maintenance, broadband reversing beepers etc. will minimise residual risk of impact or harm to nearby receptors.
- **Noise from operational activities:** Compliance with the Noise Protocol is expected at all sensitive receptors for all time periods, provided that any special audible character is adequately controlled.
- The operational assessment is conservatively based on the assumption that all operational noise sources are operating at full load (Solar array inverters, BESS, substation etc.). Noise emissions from the solar array inverters are unlikely to be significant during the night period (10pm to 7am) when there is very limited or no solar influx.
- It is recommended to update the noise model during detailed design once final equipment has been selected and specify any required noise mitigation to ensure compliance with the noise limits.

## GLINT AND GLARE

### Motorist and Rail Traffic 'Disability' Glare

Due to the terrain, solar geometry and surrounding vegetation there will be minimal glare surrounding road and rail users. One section at the west end of Walshs Road was identified as having the potential for moderate glare impact.

### Residential Nuisance Glare

105 Romuald Road, Hazelwood North was identified as having the potential for low glare impact from the project. Further investigation of the duration and intensity of the glare was undertaken. It is expected that the sun itself will dominate any view of the receiver location and the glare should not be an issue. No glare was found at all other modelled locations.

### Night-Time Illumination Glare

Night-time security/emergency lighting will be incorporated at various parts of the site infrastructure. For any 24/7 lighting implemented at the site for operational purposes, there should be negligible impact, assuming that lighting design is in accordance with relevant controls. It is noted that equipment such as the batteries are located in the middle of the site making them even less obtrusive.

## AVIATION

- The project would remain below the 1 in 35 surfaces as per Guideline B: Managing The Risk Of Building Generated Windshear And Turbulence At Airports. No further assessment is required in accordance with Guideline B.
- The solar farm as a land use does not relate to land uses with 'high' or 'moderate' wildlife attraction risk as per Guideline C: Managing The Risk Of Wildlife Strikes In The Vicinity Of Airports. However, the planned vegetation to be planted on the perimeter of the solar farm site must be submitted to the airport operator to ensure the proposed vegetation is not a wildlife (in particular bird) attraction.
- Is within the 6 km radius of the Latrobe Regional Airport and as such any lighting that may be proposed within this area should not infringe the provision of regulation 94 of the Civil Aviation Regulations 1988
- The proposed solar panels as identified in this report would not infringe the Latrobe Regional Airport Obstacle Limitation Surfaces or the PANS-OPS surfaces.
- Proposed perimeter planting vegetation mature height at maximum 12 m must remain below the Latrobe Regional Airport Obstacle Limitation Surfaces and the PANS-OPS surfaces.

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- Is outside the lateral extents of the public safety areas for Latrobe Regional Airport as per Guideline I: Managing The Risk In Public Safety Zones At The Ends Of Runways, as such no further assessment in accordance with Guideline I is required.
- Solar glare hazard analysis predicts 'yellow glare' (glare with potential for temporary after image) may be produced on the approach paths to Runway 03, Runway 27 and Runway 09. The analysis results should be submitted to the airport operator and the local planning authority.

## FLORA AND FAUNA ASSESSMENT

- Existing fauna habitat within the study area includes grassland, scrub, treed vegetation and aquatic habitat.
- 88 patches of native vegetation, totalling 27.072 hectares (including 14 large trees in patches); and
- 38 scattered trees (11 large scattered trees and 27 small scattered trees).
- The current solar farm and battery footprint will result in the loss of a total extent of 1.887 hectares of native vegetation. This comprised the following:
  - 1.747 hectares of native vegetation in patches (including no large trees in patches);
  - Two large scattered trees, equating to an area loss of 0.140 hectares.
- Offsets required to compensate for the proposed removal of native vegetation from the study area are:
  - 0.633 general habitat units, with following offset attribute requirements:
    - A minimum strategic biodiversity value (SBV) of 0.417
    - Located within the West Gippsland CMA boundary or the Latrobe municipal district.
    - Include protection of at least two large trees.

## Application Requirements

1. Information about the native vegetation to be removed.
2. Topographic and land information relating to the native vegetation to be removed.
3. Recent, dated photographs of the native vegetation to be removed.
4. An avoid and minimise statement.
5. An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines.
6. A site assessment report of the native vegetation to be removed, including the following:
  - A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status.
  - The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches.
  - The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.
7. Information about impacts on rare or threatened species habitat, including the following:
  - The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset.
  - For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps:
    - the species' conservation status;
    - the proportional impact of the removal of native vegetation on the total habitat for that species; and
    - whether the habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat.

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## CULTURAL HERITAGE

- There are six previously recorded Aboriginal cultural heritage places located within the activity area, all of which are stone artefacts scatters and Low Density Artefact Distributions (LDADs).
- There are statutory areas of archaeological potential being land within 50m of a registered Aboriginal place and 200m of a named waterway.
- It is likely that additional Aboriginal cultural heritage is present on level land located on elevated rises adjacent to creeklines.
- Away from the creeklines, the entire activity area has the potential for Low Density stone Artefact Distributions.
- Part of the activity area is an area of cultural heritage sensitivity and the activity is a high impact activity, a mandatory CHMP is required prior to the commencement of the activity.
- 30m-50m buffers from the top of slope on either side of each of the three creek lines, will assist in the protection of currently unknown Aboriginal cultural heritage.
- Subsurface testing will be required for areas with high archaeological potential to ensure no previously unidentified Aboriginal cultural heritage is present.

## FIRE & BUSHFIRE

- A 20 metre wide fire break is required around the perimeter of the site in accordance with the Design Guidelines for Renewable Energy Facilities (CFA 2022).
- Due to the presence of higher threat vegetation (scrub and treed) within creeks and along the northern and western boundary of the site, a fire break of 30 metres is recommended in recognition of the heightened threat this poses.
- The vegetation within the fire breaks is to be managed to a low-threat state (i.e., grass slashed to a maximum height of 10 centimetres) and will include a 10m wide non-vegetated area.

## HYDROLOGY

- The assessment found that there are no significant flood risks, that cannot be managed with standard mitigation measures, that will inhibit further development of the solar farm.
- It is also not expected that there will be any significant risks to surface water quality or groundwater.

## SAFETY MANAGEMENT STUDY

- The proposed development would have a minimal impact to the existing gas pipeline as the development is aboveground and doesn't require earthworks.
- Ancillary equipment that could impact the pipeline is located a substantial distance away, and the pipeline is underground, which would prevent adverse effect on the pipeline itself.
- The development would not result in a substantial increase in risk of the existing pipeline than that which currently exists; therefore, it is considered that the risk associated with the pipeline would be reduced to as low as reasonably practicable.

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### 3.3. IMPACT FRAMEWORK

A socioeconomic impact framework has been prepared to outline and justify the suite of expected impacts that could be generated by the project. For each impact, the main stakeholder groups and industries affected are identified.

For short term impacts, the economic impacts are expected over a finite period and will be achieved beyond the 18 month construction phase of the project.

For ongoing impacts, the economic impacts are expected to be delivered once the proposal is delivered and operational, and will incur either on an ongoing basis or over a long term horizon.

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### T5. ECONOMIC & COMMUNITY BENEFIT FRAMEWORK

No.	Impact	Rationale	Main stakeholders/ and industries affected
<b>SHORT TERM</b>			
1	<b>Economic stimulus: construction phase</b>	The direct investment to construct the solar farm and associated infrastructure will stimulate the construction industry through additional output and jobs created during the construction period.	Regional and state construction industry: civil trades, labourers, machinery operators, technicians.
2	<b>Construction amenity impacts</b>	Amenity impacts such as noise and traffic may arise from associated construction activities.	Local residents (proximate), passing travellers.
3	<b>Competition for labour force</b>	If major projects with high employment needs are delivered concurrent with HNSF, competition for labour force may increase and create tensions between major projects. Conversely, if there is adequate capacity, the local labour force will benefit from an increase in participation.	Local and regional labour force, major projects.
4	<b>Cumulative demand for housing, accommodation and services</b>	The importation of workers during the construction phase will create additional demand for local infrastructure and services such as commercial accommodation, rental housing, retail and hospitality. Insufficient availability of housing and accommodation may increase competition between residents, visitors and other temporary workers. Conversely, if there is adequate availability, local businesses will benefit from the short term uplift in demand.	Local businesses and local residents (housing only)
<b>LONG TERM &amp; ONGOING</b>			
1	<b>Economic stimulus: Operational phase</b>	The facility will require ongoing maintenance and operations that will support direct and indirect jobs and expenditure.	Local and regional economy
2	<b>Loss of agricultural production value</b>	Although there is expected to be a slight reduction in the quantum of land used for agricultural purposes, the replacement of cropping land for grazing purposes will ensure agricultural uses and associated production value will prevail.	Local and regional agriculture industry
3	<b>Assist in state and national energy transition</b>	The project will assist in meeting state and national policy objectives for renewable energy generation and emissions reductions.	State and national economy.
4	<b>Support local economic transition</b>	Traditional energy (coal mining, power) is critical to the local economy, but will continue to be phased out over time Supporting investment in new energy will encourage local economic transition in a related sector; encouraging a 'pivot' for the energy supply-chain and skills base.	Local economy
5	<b>Community funds</b>	The proponent will establish a community fund associated the operational phase of the facility. This will take the form of an annual payment that can be used to support local projects and programs that achieve positive community outcomes.	Local community



6	<b>Municipal revenue</b>	Under section 96(6A) of the Electricity Industry Act 2000, the Payment in Lieu of Rates (PiLoR) framework allows Councils to collect annual payments from solar energy generating projects. The financial returns to Council from renewable energy projects are considerably higher than revenue associated with rateable agricultural activities. The payment combines a fixed charge with a variable charge based on the facility's energy generation capacity.	Latrobe City Council. Local economy and community.
7	<b>Operational Amenity impacts</b>	Once built and operational, the physical infrastructure of the solar farm may create long term amenity impacts such as visual, flora, fauna and traffic.	Local residents (proximate), passing travellers.

Source: Urban Enterprise, 2023

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## 3.4. SOCIOECONOMIC IMPACTS

This section assesses and quantifies (where possible) socioeconomic impacts expected to arise from the HSNF proposal. Impacts are assessed for the short term construction phase, as well as the ongoing phase (i.e. once the project is complete and operational).

This assessment adopts the input-output method of analysis (I-O). The I-O method is based on the interdependencies and relationship between industry sectors and is widely used across the public and private sector to estimate the direct and flow on economic impacts of a project or activity to an economy.

The Productivity Commission of Australia states that "*input-output tables can be used to compute output, employment and income multipliers. These multipliers take account of one form of interdependence between industries – that relating to the supply and use of products. The numbers add up the direct and indirect impacts of a change in final output of a designated industry on economic activity and employment across all industries in an economy.*"

The impact area adopted for this assessment is Victoria, with discussion around potential economic impacts generated within Latrobe City. Definitions of economic terms can be found in the glossary of terms.

### 3.4.1. CONSTRUCTION PHASE (SHORT TERM)

During the construction phase, the following socioeconomic impacts are expected:

1. Economic stimulus generated from construction investment.
2. Amenity disruptions from construction activities.
3. Competition for labour force.
4. Cumulative demand for housing and accommodation.

#### 1. ECONOMIC STIMULUS GENERATED FROM CONSTRUCTION INVESTMENT

To derive the scale of economic impacts (jobs and investment) during the construction phase of the project the following sources of information have been referenced:

- Findings from case study analysis of large-scale solar projects across Australia (**Appendix A**); and
- The Renewable Energy Transition Modelling Tool (RETMT), developed by Remplan.

In total, 14 solar farm projects were reviewed, including one solar farm project in Numurkah that is complete and operational, with employment figures provided in retrospect. These job impacts represent 'actual' figures and have been adopted for the purpose of this assessment.

Based on the above, the construction phase of the project is estimated to generate:

- **\$1.89 billion in total economic output**, including:
  - \$646 million in direct output; and
  - \$1.25 billion in indirect output.
- **1,695 jobs (FTE)**, including:
  - 500 direct jobs; and
  - 1,195 indirect jobs.

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These economic impacts are expected to endure over the 18-month construction period. Indirect impacts also account for flow-on expenditure from wage stimulus associated with labour imported from outside of Latrobe City.

Not all of the direct jobs generated by the project will occur in Latrobe City. A proportion of jobs from outside of the local and regional area will be required, given the specialised nature of skills (e.g. solar technicians).

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The greatest opportunity for Latrobe City businesses and workers to support the construction phase is through more general construction activities such as civil construction and site works, trade workers and labourers, machinery operators, transport and logistics.

## T6. ECONOMIC IMPACTS, CONSTRUCTION PHASE

	Direct	Indirect	Total
Output (\$M)	\$646	\$1,246	\$1,892
Jobs (FTE)	500	1,195	1,695

Source: Urban Enterprise, 2022

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## 2. AMENITY DISRUPTIONS FROM CONSTRUCTION ACTIVITIES

Amenity impacts such as noise and traffic may arise from associated construction activities. The findings from the technical studies indicate that impacts will be minimal and appropriately managed.

- The impact of traffic will be minimal:
  - Anticipated daily volumes of trucks will be in the order of 100 per day (200 total movements), but spread out throughout the day.
  - The construction phase will generate approximately 600 vehicle movements per day, confined to Firmans Lane (i.e. arrivals and departures). The existing configuration of Firmans Lane has sufficient capacity to accommodate this level of temporary traffic.
- Noise from construction activities will be confined to the EPA normal working hours (e.g. day period 7.00 am to 6.00 pm). Community engagement and best practice noise management controls, regular maintenance, broadband reversing beepers will minimise residual risk of impact or harm to nearby receptors.

## 3. COMPETITION FOR LABOUR FORCE

There are several renewable energy projects planned or underway in Latrobe City and the broader region. Examples of nearby projects that may overlap with the construction phase of HNSF include:

- Morwell Solar Farm (70 MW) – approved with construction expected to commence in 2023.
- Yallourn Latrobe Valley-Battery Energy Storage System (350 MW) – approved with construction expected to commence in 2024.
- Fulham Solar Farm (80 MW) – approved with construction expected to commence in 2024.
- Frasers Solar Farm (75 MW) – approved with construction expected to commence in 2023.
- Delburn Wind Farm (200 MW) – approved with construction expected to commence in 2023.
- Loy Yang Battery Storage (200 MW) - approved with construction expected to commence in 2023.

There is a strong base of local construction workers to draw from in Latrobe City. The construction industry is the third highest employing sector in Latrobe City, with close to 3,000 jobs (~9% of employed persons).

Outside of Latrobe City, there are a diverse range of renewable energy projects proposed across Gippsland, including onshore wind, offshore wind, solar, battery and hydrogen. If all projects were to be delivered as planned, the cumulative job impacts would be significant.

Some of the jobs and skills required to deliver these projects, and anticipated timing of construction may overlap with HNSF. The overlap has the potential to increase competition for local labour, and could lead to conflicts and delays across projects.

## 4. CUMULATIVE DEMAND FOR HOUSING, ACCOMMODATION AND SERVICES

The project is estimated to require up to 500 direct jobs during the construction phase. Not all of these workers will be drawn from Latrobe City. A proportion of jobs from outside of the local and regional area will be required, given the specialised nature of skills (e.g. solar technicians).

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For imported labour, an uplift in demand for local infrastructure and services can be expected during the construction phase such as temporary housing, accommodation, retail and hospitality. Given the subject site's close proximity to Traralgon and Morwell, demand will largely be concentrated to these townships.

At this stage it is too difficult to determine the distribution of local, regional and imported labour. However, temporary workers are likely to use a combination of commercial accommodation and rental housing when staying in-region.

## Commercial Accommodation

To determine whether there is adequate commercial accommodation room capacity relative to demand, an assessment of room supply relative to average room demand has been undertaken for Morwell and Traralgon.

Across Morwell and Traralgon there are 24 accommodation providers, with a total room capacity of 558 and 89 sites/cabins (confined to caravan/holiday parks). In addition, there are 62 active Air Bnb listings in Morwell and Traralgon.

On average, Morwell and Traralgon attract approximately 160,000 visitors per annum, with around 41% staying in commercial accommodation (on average). Based on different occupancy scenarios, this translates to average room demand of:

- 107 rooms per night at 60% occupancy;
- 143 rooms per night at 80% occupancy; and
- 179 rooms per night at 100% occupancy.

This assessment shows that there is sufficient room capacity within commercial accommodation supply to serve an uplift in overnight demand. This demonstrates that:

- Imported workers seeking overnight accommodation proximate to the subject site can be accommodated;
- Accommodation providers are likely to benefit from an increase in demand associated with the project; and
- Existing overnight visitor markets (holiday & business market etc) will not be displaced.

## T7. ACCOMMODATION SUPPLY, MORWELL & TRARALGON

	Morwell	Traralgon	Total
Accommodation providers	8	16	24
Rooms	197	361	558
Cabins and sites	0	89	89

Source: Accommodation audit, Urban Enterprise, 2023

## T8. ROOM DEMAND, COMMERCIAL ACCOMMODATION

	Morwell	Traralgon	Total
Domestic overnight visitors p.a. (ave) <sup>1</sup>	44,427	114,452	158,879
Commercial accommodation % <sup>1</sup>	18,134	47,028	65,162
Room demand @ 100% occupancy (ave)	50	129	179
Room demand @ 80% occupancy (ave)	40	103	143
Room demand @ 60% occupancy (ave)	30	77	107

Source: Urban Enterprise, 2023,

**Note 1:** Based on a 5-year average (2017-21 calendar years), source: domestic visitation, National Visitor Survey (NVS), Tourism Research Australia (TRA)

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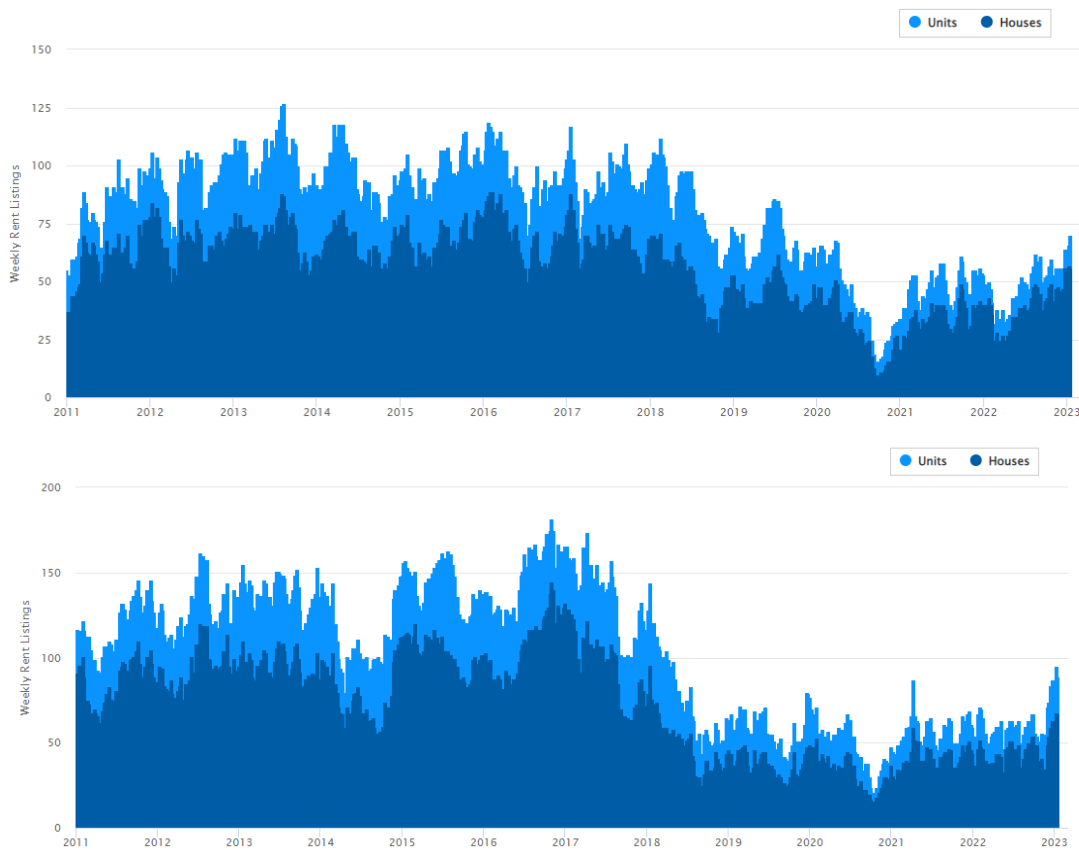
## Rental Market

The overall rental market in regional Victoria is experiencing capacity issues, with vacancy rates at record low levels and in many places, a decline in the number of rental properties available.

In Latrobe City in 2022, there were approximately 6,400 active rental properties with a median rent of \$350 per week. Over the past 5 years, the median rent has increased by 46%, confirming strong underlying demand for rental housing.

Based on major real estate website listings, there are approximately 75 properties in Morwell and 90 in Traralgon for rent in January 2023. Although available rental listings have declined from peaks between 2012 and 2018, current active listings show good availability of rental properties proximate to the site; indicating capacity for rental demand.

### F4. WEEKLY RENTAL LISTINGS, MORWELL (TOP) & TRARALGON (BOTTOM)



Source: SQM research, 2023

As previously mentioned however, there are a diverse range of renewable energy projects proposed across Gippsland. If all projects were to be delivered as planned, the cumulative demand for housing and accommodation would be material, presenting potential challenges for the region to service demand for rental housing and accommodation.

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## 3.4.2. OPERATIONAL PHASE (ONGOING)

Once the project is complete and operational, the following socioeconomic impacts are expected:

1. Ongoing economic impacts generated during the operational phase.
2. Loss of agricultural production value.
3. Assist in state and national energy transition.
4. Support local economic transition.
5. Funds for community programs and initiatives.
6. Municipal revenue from energy generation charges.
7. Amenity impacts.

The above economic benefits are discussed in-turn. Note that benefits have been quantified where possible using an adopted set of assumptions (**Appendix C**).

### 1. ONGOING ECONOMIC IMPACTS GENERATED DURING THE OPERATIONAL PHASE

The estimated economic impacts during the operational phase of the project include:

- **\$69 million in total economic output**, including:
  - \$16 million in direct output; and
  - \$53 million in indirect output.
- **41 ongoing jobs** (FTE), including:
  - 11 direct; and
  - 30 indirect.

The 11 direct jobs exclude employment associated with agricultural uses on the subject site and grid connection. Options for grid connection are currently being explored, and further information will be made available in 2023 as part of a separate planning and engagement process.

### T9. ECONOMIC IMPACTS, OPERATIONAL PHASE

	Direct	Indirect	Total
Output (\$M)	\$16	\$53	\$69
Jobs (FTE)	11	30	41

Source: Urban Enterprise, 2022

### 2. LOSS OF AGRICULTURAL PRODUCTION VALUE

The subject site currently includes 400 hectares of land used for cropping and 700 hectares is used for grazing purposes. The current livestock numbers are approximately 3,000 crossbred ewes, and 100 cows with calves at foot.<sup>8</sup>

The Agricultural assessment states that the combined parcels that make up the subject site are not highly productive or versatile agricultural land, and is not located within an irrigation district.

Although there is expected to be a slight reduction in the quantum of land used for agricultural purposes, the proposed agrisolar project will allow grazing to prevail on site. The land used for cropping land will effectively be replaced with grazing; accommodating around 7,000-7,800 sheep. The economic impact is expected to be marginal.

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<sup>8</sup> Hazelwood North Solar Farm Agricultural Assessment, Ag-Challenge Consulting, 2022

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## 3. ASSIST IN STATE AND NATIONAL ENERGY TRANSITION

The project supports the ongoing state and national transition to renewable energy production by:

- Delivering cleaner and more affordable power to consumers; and
- Contributing to state and national renewable energy generation and greenhouse gas reduction targets.

The 450 MWh AC of solar energy capacity will assist Victoria's transition to new energy, delivering more affordable and secure electricity to consumers. The energy capacity is equivalent powering around 130,000 homes.

## 4. SUPPORT LOCAL ECONOMIC TRANSITION

With the ongoing transition away from coal fired power and traditional sources of energy generation, there is a need for Latrobe City's economy to also 'pivot' to diversify the industry and skills base.

New energy is a clear opportunity to utilise existing transmission infrastructure, as well as business supply-chain and skills that are transferrable. Many renewable energy are already proposed in the G-REZ pipeline, including solar, wind, battery and hydrogen in the Latrobe Valley. A critical mass of renewable energy projects will also encourage new business investment, and present further economic opportunities for Latrobe City.

## 5. FUNDS FOR COMMUNITY PROGRAMS AND INITIATIVES

The proponent proposes to establish a community fund to support local projects and programs that deliver community benefits. The Clean Energy Council suggests that for large-scale solar projects, the community contribution range has been \$130-\$800 per MW per year over 10 to 25 years.<sup>9</sup>

Based on this range, it is expected that the community fund will receive between \$65k to \$400k per annum over the life of the project.

## 6. MUNICIPAL REVENUE FROM ENERGY GENERATION CHARGES

Established under section 96(6A) of the Electricity Industry Act 2000, the Payment in Lieu of Rates (PiLoR) framework allows Councils and electricity generators to negotiate annual payments. The PiLoR framework was amended by the Victorian Government in October 2018 to account for solar generators coming online now and in the future.

In general, financial returns to Council from renewable energy projects are considerably higher than revenue associated with rateable agricultural activities. The 2022-23 PiLoR guidelines include a fixed charge of \$59,372 and a variable charge of \$1,337 per MW (of installed capacity).

Applying the revised PiLoR framework, the annual charge to the project in year 1 is estimated at \$594,000 (at full generation capacity). This is likely to increase over time, as the fixed and variable rates are indexed as was the case for 2022-23 FY.

### T10. INDEXED AMOUNTS FOR PAYMENT IN LIEU OF RATES CHARGES

PiLoR charge component	2021-22	2022-23
Fixed charge	\$56,790	\$59,372
Variable charge (per MW)	\$1,279	\$1,337
<b>Estimate charge Hazelwood North project</b>		<b>\$594,000</b>

Source: Victorian Government Department of Land, Water and Planning, 2022

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<sup>9</sup> A guide to benefit sharing options for renewable energy projects, Clean Energy Council, 2019

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## 7. OPERATIONAL AMENITY IMPACTS

Once built and operational, the physical infrastructure of the solar farm may create long term amenity impacts such as visual, ecology and traffic. The relevant findings from the technical studies are summarised below.

### Visual Amenity

- The project will result in minor modifications to the existing visual landscape, but there is limited view lines from publicly accessible land (within the study area), and no accessible viewing locations in its entirety (within the study area).
- Publicly accessible viewing locations are limited to public roads which transverse the landscape. These roads have a high frequency of use providing access to dwellings or connecting towns.
- The highest visual effect is likely to be experienced from areas within close proximity to the site. Approximately 31 dwellings were identified as having a 75-100% potential visibility towards the project.
- Approximately 37 dwellings were identified as having only 1-25% potential visibility towards the project.

### Traffic

- Additional daily traffic generated will increase by less than 1% of existing daily average volumes.
- On-site car parking will be provided to accommodate daily workers.
- Overall traffic impacts will be minimal.

### Acoustic

- The predicted noise levels indicate are able to meet the night-time noise limit at all receptors without additional mitigation.
- The model results indicate a significant noise impact (3-9dB) at the most exposed noise sensitive receptors to the south-west of the project site.

### Glint and Glare

- There will be minimal glare surrounding road and rail users.

### Cultural Heritage

- There are six previously recorded Aboriginal cultural heritage places located within the activity area, all of which are stone artefacts scatters and Low Density Artefact Distributions (LDADs).
- It is likely that additional Aboriginal cultural heritage is present on level land located on elevated rises adjacent to creeklines.
- A mandatory CHMP is required prior to the commencement of the activity.
- 30m-50m buffers from the top of slope on either side of each of the three creek lines, will assist in the protection of currently unknown Aboriginal cultural heritage.
- Subsurface testing will be required for areas with high archaeological potential to ensure no previously unidentified Aboriginal cultural heritage is present.

### Native Vegetation

- The current solar farm and battery footprint will result in the loss of a total extent of 1.887 hectares of native vegetation:
  - 1.747 hectares of native vegetation in patches (including no large trees in patches);
  - Two large scattered trees, equating to an area loss of 0.140 hectares.
- 0.633 general habitat units of offsets required to compensate for the proposed removal of native vegetation from the study area.

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## Hydrology

- There are no significant flood risks, that cannot be managed with standard mitigation measures, that will inhibit further development of the solar farm.

## Aviation

- Overall, impacts to Latrobe Regional Airport are expected to be minimal.
- Potential for tree plantings and lighting within the subject area would need to be done so in accordance with aviation guidelines, so as to not impact operation of the Latrobe Regional Airport.




## Safety

- The development would not result in a substantial increase in risk of an existing gas pipeline than that which currently exists; therefore, it is considered that the risk associated with the pipeline would be reduced to as low as reasonably practicable.

## 3.5. SUMMARY OF SOCIOECONOMIC IMPACTS









The socioeconomic impacts of the proposal during the construction and operational phase are summarised in Table 11.

T11. SOCIOECONOMIC IMPACT SUMMARY

No.	Impact	Summary	Main stakeholders/ and industries affected
<b>SHORT TERM</b>			
1	 <b>Economic stimulus construction phase</b>	The estimated construction investment of \$646 million is estimated to generate \$1.89 billion in total output (i.e. direct and indirect) and support 1,695 (FTE) jobs during the construction phase, including up to 500 direct jobs.	Regional and state construction industry: civil trades, labourers, machinery operators, technicians.
2	 <b>Construction phase amenity impacts</b>	Amenity impacts such as noise and traffic may arise during the construction phase. The findings from the technical studies indicate that impacts will be minimal. Appropriate management and mitigation measures are proposed to minimise impacts (see relevant technical studies).	Local residents (proximate), passing travellers.
3	 <b>Competition for labour force</b>	Several renewable energy projects are planned in Latrobe City, and a diverse range of projects in the broader Gippsland region.  Labour requirements during the construction phase for HNSF will be sourced from a local, regional and state catchment. Specialised skills are anticipated to be imported from outside of the municipality and region such as technicians. More general trades and construction skills could be sourced from within the local and regional area, given that there is a strong base of construction workers to draw from in Latrobe City, with close to 3,000 jobs (~9% of all employed persons).  Some jobs and skills required to deliver other renewable energy projects with similar timing of delivery could overlap with the construction phase for HNSF. If this occurs, it has the potential to increase competition for local labour, and lead to tensions and delays across projects.	Major projects planned in-region.

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4		<b>Cumulative demand for housing and accommodation</b>	Jobs attracted from outside of the region will likely require a mix of rental housing and commercial accommodation within reasonable proximity to the project. Viewing HNSF in isolation, Morwell and Traralgon will have adequate rental property and commercial room capacity to meet need during the construction phase. However, if all renewable projects are delivered across Gippsland (as planned), servicing the cumulative housing needs could present a challenge, particularly for rental housing.	Local accommodation businesses, and local residents (housing market only)
<b>LONG TERM &amp; ONGOING</b>				
1		<b>Ongoing economic impacts Operational phase</b>	The ongoing operation of the solar farm is estimated to generate \$69 million in total economic output and support 41 (FTE) jobs per annum, which includes 11 direct jobs (FTE).	Local and regional economy
2		<b>Loss of agricultural production value</b>	Although there is expected to be a slight reduction in the quantum of land used for agricultural purposes, the proposed agrisolar project will allow grazing to prevail on site. The land used for cropping land will effectively be replaced with grazing; accommodating around 7,000-7,800 sheep. The economic impact is expected to be marginal.	Local and regional agriculture industry
3		<b>Assist in state and national energy transition</b>	450 MWh AC of renewable energy capacity will assist Victoria's transition to new energy, delivering more affordable, reliable and secure electricity to consumers. The energy capacity is equivalent to powering around 130,000 homes.	State and national economy.
4		<b>Support local economic transition</b>	Traditional energy (coal mining, power) is critical to the local economy, but will continue to be phased out over time Supporting cumulative investment in new energy will encourage local economic transition in a related sector; encouraging a 'pivot' for the energy supply-chain and skills base alongside opportunities for new business investment. A critical mass of renewable energy projects such as solar and wind in Latrobe City and Gippsland will encourage agglomeration, which could lead to further supply-chain maturity and integration.	Local economy
5		<b>Community funds</b>	The proponent proposes to establish a community fund to support local projects and programs that deliver community benefits. Estimated funds that will flow to community programs is between \$65-\$400k per annum.	Local community
6		<b>Municipal revenue</b>	Council will receive revenue in the form of an annual charge associated with solar energy generation. The estimated revenue delivered to Council in year 1 is in the order of \$0.59 million (at full generation capacity).	Latrobe City Council. Local economy and community.
7		<b>Operational phase amenity impacts</b>	Once built and operational, the physical infrastructure of the solar farm will create minimal long term amenity impacts relating to visual amenity, noise, traffic and so on. Appropriate management and mitigation measures are proposed to minimise impacts (see relevant technical studies).	Local residents (proximate), passing travellers.

Source: Urban Enterprise, 2022

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## 3.6. IMPACT EVALUATION

The significance of impacts are evaluated by considering the expected magnitude (low, moderate and high) and the likelihood of the impact occurring during the lifecycle of the project.

The following criteria has been used to assess the magnitude of impacts:

- Duration – The timeframe over which the impact occurs or the frequency of potential impacts.
- Extent – The geographical area or the range and number of stakeholders affected.
- Magnitude – Scale or degree of change from the existing condition as a result of the impact.
- Sensitivity – The extent to which people or assets are considered and provisions to mitigate the impact.

The following categories have been used to assess the likelihood of impacts taking place:

- Highly Unlikely – High improbability that the impact will occur.
- Unlikely – An improbability that the impact will occur.
- Possible – moderate probability that the impact will occur.
- Likely – A good probability that the impact will occur.
- Highly Likely – A very high probability that the impact will occur.

Planned and recommended management measures have been included (where relevant) to optimise benefits and minimise negative impacts.

## T12. CONSTRUCTION PHASE IMPACT EVALUATION & MANAGEMENT MEASURES

No.	Impact	Magnitude of Impact	Likelihood	Management measure(s)	Recommendations
1	<b>Economic stimulus construction phase</b>	Moderate	Likely	None identified.	Advocate for use of local suppliers (where possible) using platforms such as the Industry Capability Network.  Liaise with regional education and training providers to notify of job and skill requirements for HNSF.
2	<b>Construction phase amenity impacts</b>	Low	Likely	Provide regular updates and notifications about the project and potential disruptions to nearby landowners.  Public community consultation sessions held in-region.  It is anticipated that construction and environmental management plans will be prepared as part of a condition on the planning permit.	Refer to other technical studies for planned and recommended management measures relating to amenity impacts during the construction phase.
3	<b>Competition for labour force</b>	Moderate	Possible	None Identified.	Liaise with other renewable energy project proponents to discuss synergies with jobs and skills and potential for resource sharing (if required). Liaise with regional education and training providers to notify of job and skill requirements for HNSF.
4	<b>Cumulative demand for housing and accommodation</b>	Moderate	Possible	None identified.	None.

Source: Urban Enterprise/Cogency, 2023

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## T13. OPERATIONAL PHASE IMPACT EVALUATION & MANAGEMENT MEASURES

No.	Impact	Magnitude of Impact	Likelihood	Planned management measure(s)	Recommendations
1	Ongoing economic impacts Operational phase	Low	Highly likely	None identified.	Advocate for the use of local suppliers (where possible) using platforms such as the Industry Capability Network.  Liaise with regional education and training providers to notify of job and skill requirements and opportunities for HNSF.
2	Loss of agricultural production value	Low	Highly likely	The project proposes to replace land currently used for cropping with sheep grazing (7,000-7,800), which will allow some agricultural production and the associated value to prevail.	None.
3	Assist in state and national energy transition	Low - Moderate	Highly likely	None identified.	None.
4	Support local economic transition	Moderate	Likely	None identified.	Advocate for use of local suppliers for operation and maintenance requirements (where possible) using platforms such as the Industry Capability Network.  Liaise with education and skills providers to notify of potential job opportunities at HNSF.
5	Community funds	Low	Likely	The proponent proposes to establish a community fund to support local projects and programs that deliver community benefits.	None.
6	Municipal revenue	Low	Highly Likely	None identified.	None.
7	Operational phase amenity impacts	Low	Likely	Technical studies prepared to assess potential amenity impacts and recommend management measures.  Public community consultation sessions held in-region.	Refer to other technical studies for planned and recommended management measures relating to ongoing amenity impacts.

Source: Urban Enterprise/Cogency, 2023

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## APPENDICES

### APPENDIX A CASE STUDY SUMMARY, ECONOMIC IMPACTS

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Project	Location	Energy Capacity	Status	Construction impacts	Ongoing impacts
Numurkah Solar Farm	Numurkah - 200km north of Melbourne	128MW	Operational (retrospective)	203 direct jobs in Hume region 87 in rest of Victoria = 290 direct jobs \$122.4m expenditure in Victoria Economic activity of \$317.4m in Hume region	6 direct jobs in Hume region \$4.2m expenditure in Victoria Economic activity of \$12.5m in Hume region
Culcairn Solar Farm	Culcairn - 45km north of Albury	350MW	Planning Approval 2021	350 direct jobs in NSW \$177m direct expenditure 60% spent in Riverina Murray region	6 direct jobs \$15.1m direct expenditure 90% spent in Riverina Murray region
Bookaar Solar Farm	Bookaar - 8km north west of Camperdown	200MW	Planning Approval 2022	150 direct jobs, 105 locally \$280m capital investment - \$28m spent locally	8-12 ongoing jobs nationally, 6 locally Economic stimulus to the Study Area of \$29.5 million over 30 years
Morwell Solar PV Park	Morwell - 160km east of Melbourne	70MW	Planning Approval, 2022	Project cost of \$105m	*
Frasers Solar Farm	Toongabbie - 180km east of Melbourne	75MW	Planning Approval, 2020	250 jobs (direct & indirect) \$110m investment	4 direct ongoing jobs
Fulham Solar Farm	Fulham - 220km east of Melbourne	80MW	Planning Approval, 2022	90 direct jobs	10 direct jobs
Maffra Solar Farm	Maffra - 230km east of Melbourne	30MW	Planning Approval, 2018	100 jobs (assuming direct and indirect) \$50m investment	*
Perry Bridge Solar Farm	Perry Bridge - 250km east of Melbourne	44MW	Planning Approval, 2021	88 direct jobs	2-3 direct jobs
Tragowel Solar Farm	Tragowel - 270km north of Melbourne	510MW	Planning Approval, 2019	\$500m investment	*
New England Solar Farm	Uralla, NSW	720MW (includes 400 MWh battery storage facility)	Under construction	700 direct jobs	15 direct jobs
Western Downs Green Power Hub	Chinchilla, QLD	460MW (includes 150 MWh battery storage facility)	Under construction	400 direct jobs	10 direct jobs
Cultana Solar Farm	Whyalla, SA	280MW	Under construction	700 direct jobs	10 direct jobs
Limondale Solar Farm	Balranald, NSW	249MW	Operational	300-400 direct jobs	7 direct jobs
Darlington Point Solar Farm	Darlington Point, NSW	330MW	Operational	500 direct jobs (25% locals) \$450m investment	*

Source: various online sources | \* information unavailable.

## APPENDIX B CASE STUDY SUMMARY, SOCIAL IMPACTS

Project	Location	Energy Capacity	Socioeconomic impacts identified
Daroobalgie Solar Farm	Daroobalgie, NSW	100 MW	<p>Construction phase:</p> <ul style="list-style-type: none"> <li>Direct investment and employment generated.</li> <li>Flow-on output and employment supported from indirect business and worker expenditure.</li> <li>Local amenity impacts confined to nearby areas (noise, sound, traffic).</li> </ul> <p>Operational phase:</p> <ul style="list-style-type: none"> <li>Direct output and employment generated.</li> <li>Changes to existing rural views and visual characteristics could result in reduced enjoyment of the natural and rural landscape.</li> <li>Agricultural uses would preclude.</li> </ul>
Culcairn Solar Farm	Culcairn, NSW	350 MW	<p>Construction phase:</p> <ul style="list-style-type: none"> <li>Direct investment and employment generated.</li> <li>Flow-on output and employment supported from indirect business and worker expenditure.</li> <li>Increase competition for regional labour force, particularly construction workers.</li> <li>Increase in demand for commercial accommodation.</li> </ul> <p>Operational phase:</p> <ul style="list-style-type: none"> <li>Ongoing employment generated.</li> <li>Loss of agricultural use and value.</li> <li>Funds delivered to local Council and the community.</li> <li>Landowner payments.</li> <li>Support small-scale tourism activities.</li> </ul>
Goorambat East Solar Farm	Near Benalla, VIC	250 MW	<ul style="list-style-type: none"> <li>Direct investment and employment generated.</li> <li>Opportunities for apprenticeship places.</li> <li>CO<sub>2</sub> emission reductions.</li> <li>Community funds.</li> </ul>
West Wyalong Solar Farm	West Wyalong, NSW	90 MW	<ul style="list-style-type: none"> <li>Increased supply of renewable energy and reduction in emissions.</li> <li>Increased employment and economic activity during the project's construction and operation phase.</li> <li>Increased job opportunities for local workers.</li> <li>Increased retail spend, from temporary construction workers.</li> <li>Increased demand on local infrastructure and services during construction.</li> <li>Reduced accommodation capacity during construction.</li> <li>Cumulative impacts on infrastructure and services, from major developments.</li> </ul>

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## APPENDIX C ECONOMIC IMPACT ASSESSMENT ASSUMPTIONS

Impact	Assumption	Source
Construction	1 MW energy generation = 1 direct FTE construction job	Derived from case study analysis (Appendix A), Urban Enterprise, 2022
	500MW solar farm developed in Latrobe City is estimated to generate 1,695 jobs (direct and indirect) with a total investment of \$646 million	Renewable Energy Transition Modelling Tool, Remplan 2022
Operational	1MW energy generation = 0.03 direct FTE ongoing jobs	Derived from case study analysis (Appendix A), Urban Enterprise, 2022

## APPENDIX D ACCOMMODATION AUDIT: MORWELL & TRARALGON

Business Name	Address	Type	No. of Rooms	No. of Cabins	Distance from Subject Site
Cedar Lodge	7 Maryvale Cres, Morwell	Motel	27		7.8km (8min drive)
La Trobe Motel	141 Princes Dr, Morwell	Motel	50		7.9km (8min drive)
Morwell Parkside Motel	245 Princes Dr, Morwell	Motel	18		7.4km (8min drive)
Morwell Motel	259 Princes Dr, Morwell	Motel	23		7.6km (8min drive)
Morwell Hotel	311-327 Princes Dr, Morwell	Hotel	17		6.7km (7min drive)
Farnham Court Motel	24/30 Princes Dr, Morwell	Motel	33		5.7km (7min drive)
503 on Princes Drive Motel	503 Princes Dr, Morwell	Motel	6		6.4km (7min drive)
Mid Valley Motel	14 Chickerell St, Morwell	Motel	11		6.4km (7min drive)
Tandara Caravan Park	9 Village Ave, Traralgon	Caravan Park		30	8.9km (9min drive)
Century Inn Traralgon	5 Airfield Rd, Traralgon	Hotel	33		9.2km (9min drive)
Lifestyle Parks Traralgon	35 Airfield Rd, Traralgon	Caravan/Holiday Park		11	9.5km (9min drive)
BIG4 Traralgon Park Lane Holiday Park	5353 Princes Hwy, Traralgon	Caravan/Holiday Park		48	9.7km (10min drive)
Monfort Manor	35 Hoven Dr, Traralgon	Hotel	5		12.4km (12min drive)
Quality Inn and Suites Traralgon	5601 Princes Hwy, Traralgon	Hotel	61		9.8km (9min drive)
Motel Traralgon	Princes Hwy &, Lodge Dr, Traralgon	Motel	22		9.5km (9min drive)
Connell's Motel	144 Princes Hwy, Traralgon	Motel	14		10.3km (10min drive)
Comfort Inn Traralgon	40 Princes Hwy, Traralgon	Hotel	31		9.5km (9min drive)
Mantra Traralgon	192 Franklin St, Traralgon	Hotel	50		10.5km (12min drive)
Creek Cottage Bed and Breakfast	14 George St, Traralgon	Bed and Breakfast	3		10.9km (12min drive)
Traralgon Serviced Apartments	18A Peterkin St, Traralgon	Serviced Apartments	3		10.5km (11min drive)
The Black Bull Motel	54 Argyle St, Traralgon	Motel	24		10.6km (11min drive)
Best Western Governor Gipps Motor Inn	Unit 59/63 Argyle St, Traralgon	Motel	22		10.8km (12min drive)
City Gardens Motel	80 Argyle St, Traralgon	Motel	13		10.9km (11min drive)
Bridges on Argyle Motel	90 Argyle St, Traralgon	Motel	60		10.9km (11min drive)

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