Chapter 17
Socio-economic

17.1 Overview

This chapter provides an assessment of the social and economic impacts and benefits associated with the construction, operation and decommissioning of the project. The chapter is based on the findings of the social and economic impact assessment (Appendix I), prepared by Ethos Urban Pty Ltd.

The social impact assessment considered a broad range of potential impacts arising from the construction, operation and decommissioning of the project, with these impacts identified principally through the stakeholder consultation process (refer to Chapter 6 – *Stakeholder consultation* for a summary of community engagement to date and key issues identified). The assessment of these impacts was based on guidelines published by the International Association for Impact Assessment, *International Principles for Social Impact Assessment*, and considered the findings of specialist technical reports undertaken for the project.

An economic impact assessment was completed to identify potential local and regional economic benefits and impacts associated with the project. This assessment was based on an analysis of the local and regional population, labour markets, and occupational and business structure, and the capacity of the townships in the study area to participate and service the project. The assessment also included a review of policies that influence investment in the renewable energy sector.

During construction, temporary negative impacts to the current way of life, community, culture, health and wellbeing, and environment and amenity are anticipated. These impacts are associated with the generation of dust, noise and vibration, changes to the visual character of the landscape, increased traffic on local roads, and the presence of a construction workforce that affects the community's sense of place. Potential impacts to environment and amenity, culture and way of life are also predicted during the operation of the project, particularly cumulative noise and visual impacts resulting from the nearby existing and approved wind farms (noting that noise levels are predicted to comply with the relevant standard). However, the project would also support local employment and training opportunities.

The increase and diversification of temporary and ongoing local employment opportunities would provide economic benefits within the region. During construction, it is estimated that $120 million of investment would be retained in the region. Ongoing economic stimulus associated with the operation of the project through the financial returns to host landowners (stakeholders), local wage spending, community fund payments and Moyne Shire Council financial returns is estimated at approximately $158.4 million over 25 years.

Through the design process, the project has sought to avoid and minimise potential impacts to people and the local community by applying buffers between neighbour (non-stakeholder) dwellings and wind turbines, and township zones.

A Neighbour Benefit Sharing Program has been developed that provides 'goodwill' payments to neighbours (amongst other benefits). The program would start upon commissioning of the wind farm and continue annually for as long as the relevant turbines are operational. With the implementation of these and other design and management measures, the social impact significance ratings during both the two-year construction period and operation were assessed to be low-medium, except for impacts associated with 'environment and amenity', which were assessed as high during construction for the community immediately surrounding the site.

17.2 EES objectives and key issues

The EES scoping requirements specify the draft evaluation objective and key issues, outlined in Table 17.1, relevant to social and economic effects that have guided this assessment.

Table 17.1 Draft evaluation objectives and key issues relevant to potential social impacts

Draft evaluation objective	
Land use and socioeconomic: *To avoid and minimise adverse effects on land use (including agricultural and residential), social fabric of the community (with regard to wellbeing, community cohesion), local infrastructure, electromagnetic interference, aviation safety and to neighbouring landowners during construction, operation and decommissioning of the project.*	
Key issues	• Significant disruption to existing and/or proposed land uses, with associated economic and social effects on households and businesses. • Potential adverse effects of wind turbines and associated infrastructure from an aviation perspective, including but not limited to impacts on aerial safety, air traffic control equipment, obstruction and turbulence. • Potential interference with communication systems that use electromagnetic waves as the transmissions medium (e.g., television, radio, mobile reception). • Potential adverse impacts on existing infrastructure, including the high-pressure gas transmission pipelines.

17.3 Legislation, policy and guidelines

Key legislation, policies and guidelines relevant to the social and economic impact assessment are summarised in Table 17.2.

Table 17.2 Relevant legislation, policies and guidelines

Legislation/ policy/guideline	Description	Relevance to project
State		
Planning and Environment Act 1987	The purpose of the *Planning and Environment Act 1987* is to establish a framework for planning the use, development and protection of land in Victoria. This Act sets out the process for obtaining permits under planning schemes, settling disputes, enforcing compliance with planning schemes and permits, and other administrative procedures.	The land within the project site is subject to the requirements of the Moyne Planning Scheme. The Planning Policy Framework and Municipal Strategic Statement of the Moyne Shire Planning Scheme contain clauses relevant to social values and the economy.
	Planning Policy Framework	Relevant Planning Policy Framework clauses and objectives include: • Clause 13 Environmental Risks and Amenity states that *"planning should identify and manage the potential for the environment and environmental changes to impact on the economic, environmental or social wellbeing of society"* • Clause 17.03-2S Sustainable Industry objective is to *"Provide adequate separation and buffer areas between sensitive uses and offensive or dangerous industries and quarries to ensure that residents are not affected by adverse environmental effects, nuisance or exposure to hazards"* • Clause 19.01-2S Renewable Energy strategy is to *"Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment".*

Legislation/ policy/guideline	Description	Relevance to project
	Municipal Strategic Statement	Relevant Municipal Strategic Statement clauses and objectives include: • Clause 21.07 Economic Development objective is "*to support and facilitate the development of local employment opportunities*".
Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria (Policy and Planning Guidelines) (DELWP, 2021f)	The Policy and Planning Guidelines provide a framework to ensure proposals for wind energy facilities are fully assessed and outline the matters to be assessed.	The Policy and Planning Guidelines outline restrictions to wind energy developments, such as shadow flicker and noise limits, and the minimum distance between a wind turbine and a dwelling (without landowner agreement). The matters to be assessed include social considerations, such as landscape values and noise.
International Principles for Social Impact Assessment (Vanclay, 2003)	The *International Principles for Social Impact Assessment* establish a clear, consistent and rigorous framework for identifying, predicting, evaluating and developing responses to the social impacts of development proposals.	The guidelines for the basis of the social impact assessment, which assesses impacts across a suite of factors including, but not limited to, people's way of life, their community, and their environment and amenity.
Local		
Great South Coast Regional Growth Plan (Victorian Government 2014)	The *Great South Coast Regional Growth Plan* was developed in partnership with local government and state agencies, covering the municipalities of Corangamite, Glenelg, Moyne, Southern Grampians and Warrnambool. The Growth Plan establishes a framework for land use and growth, and identifies important regional economic and community assets to be preserved, maintained or developed over the next 30 years.	This Regional Growth Plan identifies that there is an abundance of energy assets (including renewable resources for wind energy technologies) available in the region, and further development of these opportunities could make the region the primary area in Australia for alternative energy. The Regional Growth Plan notes that planning is required to ensure that utilising these resources to support economic development is undertaken in a sustainable manner, with growth directed away from areas where it may hinder future use of these assets. The project is being developed in regard to the land use policies and strategies outlined in the Regional Growth Plan in relation to alternative energy production.
Council Plan 2021–25 (Moyne Shire Council, 2021c)	The Moyne Shire *Council Plan 2021–25* outlines the vision and values of the shire, and priorities and projects over the next four years to support a prosperous community that is valued and connected.	Key directions and outcomes of the Council Plan relevant to the project include: • maintaining Council roads • providing infrastructure that meets current and future community needs • supporting renewable energy initiatives • community benefits from investment and development in renewable energy projects across Moyne Shire • consideration of cumulative social, environmental and economic impacts by renewable energy projects • protection of valuable agricultural land.

Legislation/ policy/guideline	Description	Relevance to project
Economic Development Strategy 2019 – 2029 (Moyne Shire Council, 2019c)	The *Economic Development Strategy 2019–2029* outlines the economic challenges and opportunities within Moyne Shire, identifying six economic directions: • people and place • attracting investment • major local industries • role of Moyne Shire Council • sustainability • together as a region. An objective of the Strategy is to "*leverage Moyne Shire's position as a centre of renewable energy production*".	A key challenge outlined in the Economic Development Strategy is the impact of wind farms on social and community wellbeing of surrounding townships. The Strategy outlines that consideration should be given regarding the cumulative impacts of wind farms in Moyne, and local businesses should be engaged in wind farm project construction phases. The social impact assessment considered the potential cumulative effects of the approved Hawkesdale, Woolsthorpe and Ryan Corner wind farms and operating Macarthur, Codrington and Yambuk wind farms in relation to social effects. Consultation with local stakeholders and the community commenced in 2010 and has continued for the duration of the EES process. This consultation has included newsletters, face-to-face meetings and open days, as well as the establishment of a community engagement committee. The consultation activities are detailed in Chapter 6 – *Stakeholder consultation*.

17.4 Investigation area

The primary study (or investigation) area for the social impact assessment represents the local community within a 6-kilometre buffer of the project site. This includes landowners, residents, businesses, workers and other community members, and stakeholders who may be affected by the project. Additional consideration was also given to properties within an approximate radius of 10 kilometres from the project site to account for the potential cumulative effect of the approved Hawkesdale, Woolsthorpe and Ryan Corner wind farms.

A secondary study area, defined by the Moyne Shire boundary, was also considered due to the potential regional social impacts and benefits of the project construction and operation. This secondary study area considers the potential cumulative impacts from the three operating wind farms within 20 kilometres of the project site (i.e., Macarthur, Codrington and Yambuk wind farms), as well as the broader community impacts experienced across the municipality such as access to community services, and potential changes to community character and cohesion.

The project site, and social impact assessment primary and secondary study areas, are shown in Figure 17.1.

As economic effects are likely to be experienced across a regional area, the study area for the economic assessment was defined as the Local Government Area (LGA) of Moyne (where the project is located) and the surrounding LGAs of Southern Grampians Shire (to the north), Warrnambool City Council (to the south-east) and Glenelg Shire Council (to the south-west) (Figure 17.2). These LGAs are likely to experience economic benefits from the project, including locations such as Port Fairy, Warrnambool, Hamilton and Portland.

For the economic impact assessment, local economic benefits and impacts refer specifically to those associated with Moyne Shire, including townships and localities such as Willatook, Orford, Hawkesdale, Macarthur, Koroit and Port Fairy. Regional economic benefits and impacts refer to those associated with the remainder of the economic study area (i.e., Glenelg Shire, Southern Grampians Shire and Warrnambool City).

Figure 17.1 **Project site, and primary and secondary study areas**

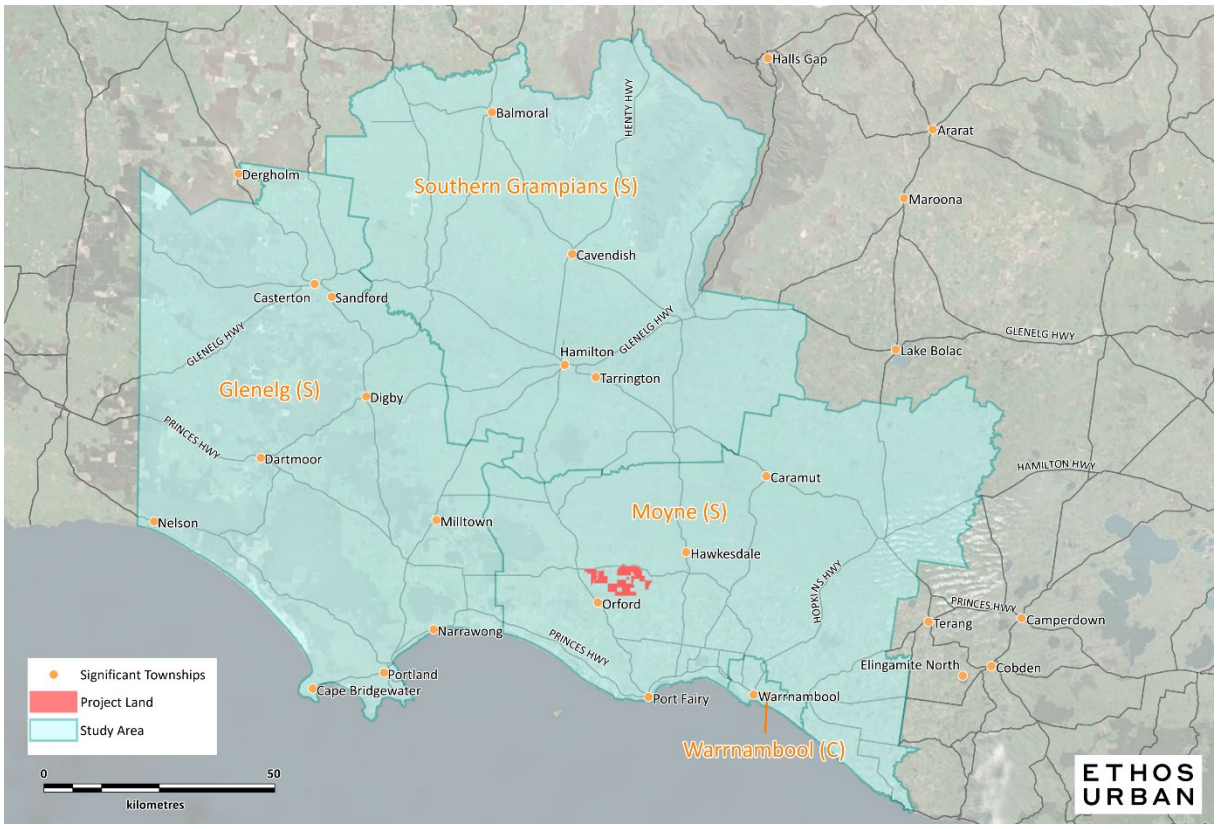

Figure 17.2 **Regional economic study area in relation to the project site**

17.5 Method

The social and economic impact assessment applied an assessment approach that has utilised baseline data along with data gathered by the proponent during stakeholder engagement activities.

The assessment approach has involved a number of steps, including:

- baseline analysis of the existing socio-economic environment, involving the study area definition and identification of geographic areas likely to be impacted
- demographic analysis of the community profile, including socio-economic characteristics of current communities and population forecasts
- review of social facilities and services likely to be accessed by communities and temporary construction workforce during construction, operation, and decommissioning of the project
- review of stakeholder and community engagement findings from consultation undertaken for the project since 2010, and identification of broader community issues, perspectives and aspirations that may be relevant to the assessment
- analysis of potential social and economic impacts and benefits during project construction, operation, and decommissioning
- identification of strategies for mitigation of potential social and economic impacts, as well as the enhancement of benefits.

17.5.1 Existing conditions

The following are the key data sources and policy documents used to identify the baseline and background data for the social and economic impact assessment:

- Australian Bureau of Statistics data, including:
  - Census of Population and Housing 2016
  - Business Counts 2020
  - Tourism Accommodation, 2015–16
  - Average Weekly Earnings, May 2021
  - Household Expenditure Survey, 2015–16
- *Regional Partnerships Great South Coast: Outcomes Roadmap* (2019)
- Moyne Shire Council plans and strategies, including:
  - *Municipal Health and Wellbeing Plan, 2017–2021*
  - *Council Plan 2017–2021*
  - *Open Space Strategy 2020–2035*
  - *Economic Development Strategy 2019–2029*
  - *Environmental Sustainability Strategy, 2015*
- *Moyne Warrnambool Rural Housing and Settlement Strategy* (CPG Australia 2010)
- Airbnb and Vrbo databases, April 2021
- Cordell Connect databases, 2021 – a database of projects in various phases of development
- *Renewable Energy Action Plan* (DELWP, 2017a)
- *Victoria in Future 2019: Population Projections 2016 to 2056* (DELWP, 2019c)
- Payment in Lieu of Rates: Information for Local Government Authorities and Renewable Energy Generators (DELWP, 2018)
- *Small Area Labour Markets, December Quarter 2020* (National Skills Commission, 2020)
- Willatook Wind Farm consultation to date (refer to Chapter 6 – *Stakeholder consultation*)
- Willatook Wind Farm Neighbour Benefit Program brochure, 2020
- previous research into the effect of wind farms on property prices.

17.5.2 Stakeholder consultation

Throughout the project development and EES processes a variety of methods, materials and tools were used to engage with affected parties. This included:

- doorknock of neighbouring dwellings within 3 kilometres of a proposed wind turbine location in 2010 and 2017, and a follow-up doorknock of neighbouring properties within 6 kilometres of a proposed wind turbine location in 2019 and 2020
- face-to-face meetings with members of the community and participating landowners
- establishment of a community engagement committee to provide a forum for direct engagement between the project team
- community information sessions, attended by specialist noise, aviation, and flora and fauna consultants
- webinar, with specialist presentations on ecology, wind farm noise, and the landscape and visual impact assessment
- drop-in centre, hosted in Koroit for 12 weeks (one day per week) between October and December 2019
- project information sheets and newsletters, posted to landowners within 10 kilometres of the project site.

Community engagement activities are further discussed in Chapter 6 – *Stakeholder consultation*.

A media scan of local newspapers and social media was also undertaken as part of the social impact assessment to determine broader community perspectives regarding the project.

17.5.3 Impact assessment

Social impact assessment

The assessment of social impacts was based on guidelines published by the International Association for Impact Assessment, *International Principles for Social Impact Assessment* (Vanclay, 2003), which defines Social Impact Assessment as:

> *'The process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.'* (2003, p.5).

The guidelines establish a clear, consistent and rigorous framework for identifying, predicting, evaluating and developing responses to the social impacts of development proposals. They are recognised as best-practice and are used as the basis for standardised assessments by several authorities, including the NSW Department of Planning, Industry and Environment. There is no Victorian Government framework or prescribed methodology for social impact assessments.

The International Association for Impact Assessment guidelines classify social impacts in the following way, which forms the basis of this assessment (Figure 17.3).

Figure 17.3 International Association for Impact Assessment guidelines classifications

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

To assess the potential negative impacts, a social significance assessment was carried out to determine the overall significance of the potential social impact (firstly without mitigation). As part of this assessment, consideration was given to the following:

- likely population to be affected
- timing of the potential social impact
- characteristics of social impact, including extent and duration (temporary or ongoing)
- potential level of social impact significance (Figure 17.4), considering the likelihood (Table 17.3) and magnitude level (Table 17.4) of the social impact.

Table 17.3 Definition of likelihood levels for social impacts

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Table 17.4 Definition of magnitude levels for social impacts

Magnitude	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, amenity, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly either lasting for an indefinite time or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	No noticeable change experienced by people in the locality.

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

Source: NSW Government technical supplement to support the Social Impact Assessment Guideline for State Significant Projects, November 2021

Figure 17.4 Social impact significance matrix

Economic impacts

The economic impact assessment included an assessment of the following:

- project investment (retainment of investment in the immediate region was determined through examining available construction cost data from a number of built and operating wind farm projects located in regional areas)
- project employment (direct and indirect) for construction and operational phases based on the following:
  - industry-standard multipliers for the electricity industry (based on Australian Bureau of Statistics Type B multipliers), which were used to assess the number of additional jobs that would be indirectly supported during the construction operation of the project
  - data sourced from similar-sized constructed and operational wind farms, which was used to estimate the direct construction and operational workforce requirement, as well as the source of these jobs (i.e., within or outside the study area)
- business and industry participation opportunities, based on a review of construction firms and businesses associated with activities likely to be required for the project within the study area
- agricultural impacts
- accommodation and housing impacts
- impacts on property values, based on previous research undertaken to isolate the impacts of wind farms on property prices
- cumulative impacts
- economic stimulus impacts (construction and operation phases), based on the Australian Bureau of Statistics Household Expenditure Survey.

17.6 Existing conditions

17.6.1 Local profile

This section describes the demographic and economic profile of Warrnambool City and Moyne Shire. The focus is on Moyne Shire, with a more detailed profile contained within the social and economic impact assessment (Appendix I).

Warrnambool City is surrounded by Moyne Shire to the north, east and west, with the Southern Ocean coastline forming the City's southern border. It is the largest coastal regional city in Victoria and the fastest growing economy in south-west Victoria. Warrnambool City covers an area of approximately 120 square kilometres and contains the large regional city of Warrnambool, as well as the smaller townships of Allansford, Bushfield and Woodford.

The regional population (i.e., comprising of Warrnambool City, Glenelg and Southern Grampians) was forecast to reach 71,400 persons by June 2021, with Warrnambool City accounting for 50% (35,720 persons) of the total population (DELWP, 2019c).

Moyne Shire is bordered by approximately 90 kilometres of coastline to the south and extends approximately 80 kilometres north to the Lake Bolac district. Warrnambool City is located near the centre of the shire on the coast and is a separate municipality. Approximately 60% of the shire's population live in the southern coastal region where the main tourist and dairying areas are found. Larger towns near the coast within Moyne Shire are Koroit, Port Fairy and Yambuk, with the main inland towns being Macarthur, Hawkesdale and Mortlake.

Social demographics

Social demographic characteristics for Moyne Shire are summarised in Table 17.5. The age profile of the shire is shown in Figure 17.5.

Table 17.5 Social demographics for Moyne Shire and Victoria

Demographic		Moyne (S)	Victoria
Persons per dwelling	Two persons	27.9%	23.3%
	Four persons	18.8%	23.0%
	Three persons	14.0%	17.3%
Household composition	One family	68.0%	65.5%
Languages	English	90.9%	67.9%
Birth country	Australia	85.2%	64.9%
	Overseas	6.0%	28.4%
	Not stated	8.8%	6.8%
Education	University	10.9%	19.9%
	Certificate level	17.4%	13.8%
Age	Largest cohort	50–59 years (15.7%) 60–69 years (14.3%) 10–19 years (14.0%)	20–29 years (14.4%) 30–39 years (14.4%) 40–49 years (13.6%)
Disadvantage	Socio-Economic Indexes for Areas (SEIFA) Index	1016	1010

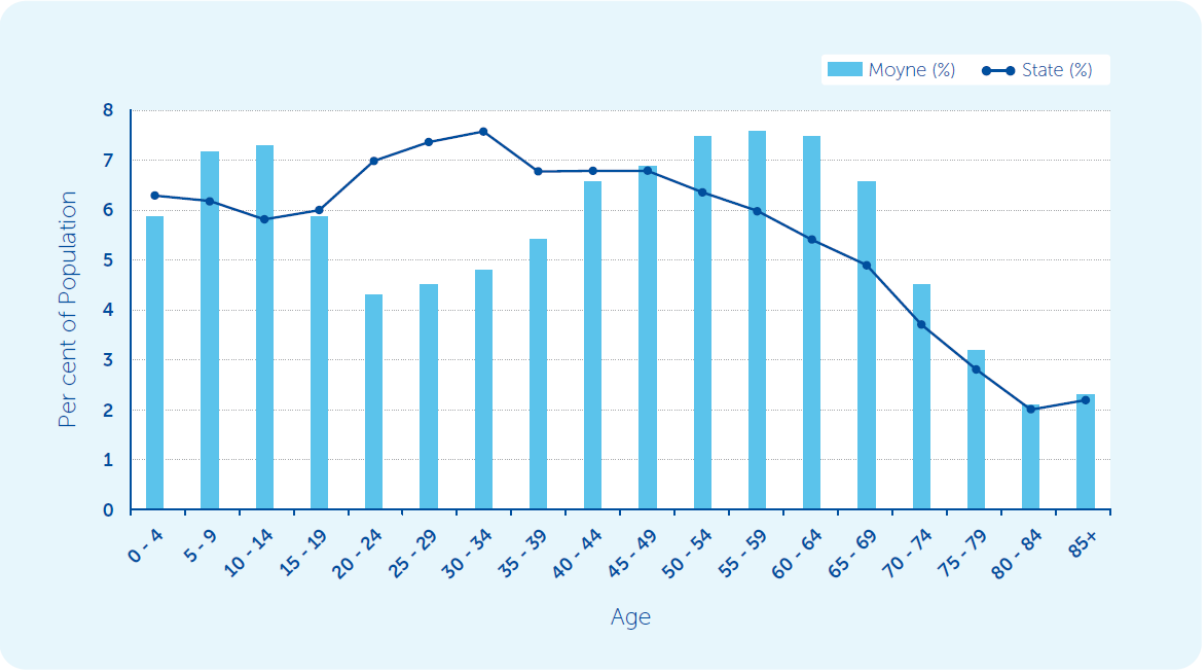

Figure 17.5 **Age profile of the Moyne Local Government Area against the Victorian average (2016 Census data)**

Economic demographics

Moyne Shire has a relatively small population of approximately 17,000 people. Over the period 2021–2036, population levels in Moyne Shire are expected to increase by 0.7% per annum (DEWLP, 2019c). This forecast growth is lower than Regional Victoria (1.3%) and Victoria (1.6%) (Table 17.6).

As of December 2020, Moyne Shire had an unemployment rate of 2.5%, which is significantly below the rate for Victoria at 6.4%, even allowing for the impacts of COVID-19 (Table 17.6). This indicates a tight local labour market.

Table 17.6 **Economic demographics for Moyne Shire and Victoria**

Demographic		Moyne (S)	Victoria
Population^	2021	17,210	6,861,920
	2036	19,030	8,722,770
	Change (2021 to 2036)	1,820	1,860,840
	Annual average growth rate	0.7%	1.6%
Employment*	Employed	9,273	3,332,800
	Unemployment rate	2.5%	6.4%

Source:

^ DELWP 2019c, Victoria in Future

** National Skills Commission Small Area Labour Markets – December Quarter 2020*

Being a predominately rural shire, the key industries of the region are grazing agriculture (wool and lamb production) and dairy and beef production, with around 51% of businesses in the shire associated with the agriculture, forestry and fishing industries. Australian Bureau of Statistics Business Count data for June 2020 in Moyne Shire shows that construction businesses and businesses associated with transport, postal and warehousing service contribute to 364 businesses, or 16% of all businesses located in the shire (Figure 17.6).

The skills base of Moyne Shire is reflected in its occupational structure, as shown in Figure 17.7. Australian Bureau of Statistics Census data for 2016 shows that approximately 33% of workers (2,500 workers) in the shire were occupied in activities generally associated with the types of skills required for the construction of a wind farm. The representation in these occupations in Moyne Shire is significantly higher than the state average of 28%, indicating a suitable occupational base exists to support the proposed project.

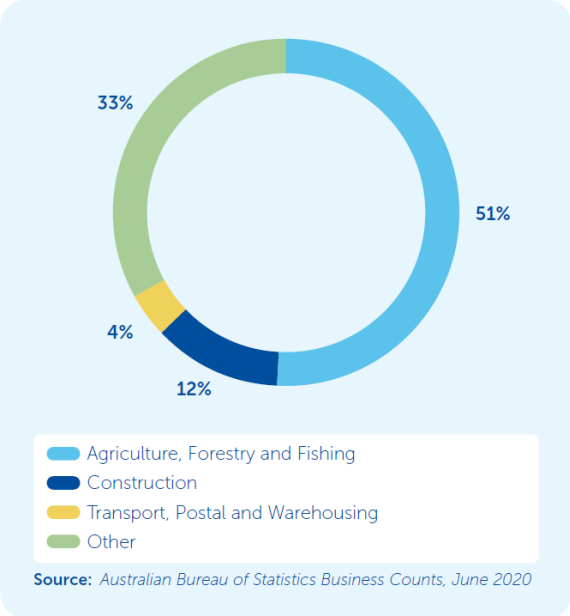

Figure 17.6 **Business structure for Moyne Shire**

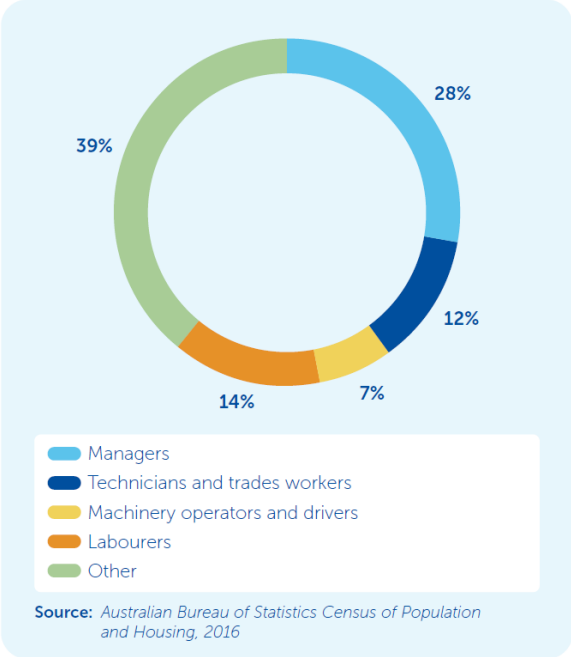

Figure 17.7 **Occupations for Moyne Shire**

17.6.2 Larger regional centres

Larger towns and regional centres within the area include Koroit, Port Fairy, Warrnambool, Portland and Hamilton. Larger regional facilities such as major hospitals with emergency departments and other emergency services are located within Port Fairy, Portland, Warrnambool and Hamilton, most of which are within an hour's drive of the project site. The larger regional towns also provide education facilities and medium- to large-scale retail services (e.g., large supermarkets and other speciality shops), as well as recreational facilities (e.g., sporting clubs, parks and beaches).

An overview of these towns and community services and facilities they provide is included in the following sections. The location of these services is shown in Figure 17.8.

Source: Ethos Urban

Figure 17.8 Community facilities and services within the regional area

Koroit

Koroit is a small rural settlement located approximately 19 kilometres or a 15 minute drive from the southern part of the project site, offering convenience for project workers locating to the town. Koroit has a residential population of 2,055 residents (2016 Census, Koroit State Suburb), but offers a limited range of amenities for workers and little in terms of inputs to the construction process. Key services available in Koroit include small-scale retail, food shops, fuel supplies and health care.

Figure 17.9
Koroit
(*Source: Moyne Shire Council https://www.moyne.vic.gov.au/Your-Council/Advocacy/Koroit-Township-renewal, accessed 22 Sept 2021*)

Port Fairy

Port Fairy is a strategically important township located in the south of Moyne Shire which is very popular as a holiday destination. The township and surrounds have a population of 3,340 residents (2016 Census, Port Fairy State Suburb). Port Fairy is located approximately 22 kilometres from the southern part of the project site, or approximately a 20 minute drive along the Hamilton-Port Fairy Road. The relative proximity of Port Fairy to the project site and the wide range of amenities provided indicate the township will be an important base for non-local workers, as well as providing a limited range of construction and support services to the project. Port Fairy was a popular base for workers during the construction of the Macarthur Wind Farm.

Port Fairy provides a wide-range of amenities, including medium-scale retail services, food shops, medical services and trade supplies. Recreational entertainment includes parks, beach, river and sporting clubs.

Figure 17.10
Port Fairy
(*Source: Visit Victoria https://www.visitvictoria.com/Regions/Great-Ocean-Road/Destinations/Port-Fairy, accessed 22 Sept 2021*)

Warrnambool

Warrnambool is a major regional city and the service centre for Victoria's south-west region. The city and surrounds have a population of 29,660 residents (2016 Census, Warrnambool State Suburb). Warrnambool is located approximately 45 kilometres from the southern part of the project site, or approximately a 40 minute drive along the Princes Freeway. While located further away from the project site than Port Fairy, Warrnambool is likely to be an attractive location for many project workers given the full range of amenities present, while the city is likely to contribute to construction and support services to the project given its strong industry base. Warrnambool was a popular base for workers during the construction of the Macarthur Wind Farm.

Key services in Warrnambool include major transport and freight services, health care (including emergency department), trade supplies, fuel supplies, large-scale retail services, food shops, entertainment (including beaches, parks, arts centre and cinema), and a significant quantity and range of commercial accommodation options.

Figure 17.11
Warrnambool
(*Source: Visit Victoria https://www.visitvictoria.com/regions/great-ocean-road/destinations/warrnambool, accessed 22 Sept 2021*)

Portland

Portland is a regional town located on Portland Bay, approximately 70 kilometres from the southern part of the project site. Today, the population of Portland is 10,800 residents (2016 Census, Portland State Suburb). In view of its strategic port location, Portland would play a key role in the transportation of equipment to the project site. Key services include the Port of Portland and freight services, health care (including emergency department), medium-scale retail services, food shops, fuel supplies, entertainment and trade supplies.

Figure 17.12
Portland
(*Source: Travel Victoria https://www.travelvictoria.com.au/portland/, accessed 22 Sept 2021*)

Hamilton

Hamilton is the service centre of the Southern Grampians Region, with a population of 4,230 residents (2016 Census, Hamilton State Suburb). Hamilton is located approximately 60 kilometres from the northern part of the project site or approximately a 45 minute drive via the Hamilton Highway/ Penshurst-Warrnambool Road. Hamilton, with its country lifestyle and good range of amenities, is likely to be attractive to some project workers including those seeking more affordable accommodation compared with Port Fairy or Warrnambool. Hamilton hosted many project workers during the construction of the Macarthur Wind Farm. Hamilton also has a strong industrial base to support the construction phase of the project.

Services available in Hamilton include health care (including emergency department), medium-scale retail services, food shops, fuel supplies, entertainment (including arts centre and cinema), trade supplies and a reasonable supply of commercial accommodation options.

17.6.3 Smaller towns and localities

Smaller townships and districts within the primary study area include Orford, Hawkesdale, Willatook, Broadwater, Tarrone and Macarthur.

Existing social infrastructure accessible to the local area is shown in Figure 17.8. There is some social infrastructure within the primary study area, limited to four smaller Country Fire Authority stations, two community halls (at Orford and Willatook) and some sporting facilities. Hawkesdale is the largest of the townships within this study area, with community facilities including a school, health care service and general store.

Although there are no shops within the primary study area, there are shops in Macarthur (12 kilometres to the north of the project) and Hawkesdale (7 kilometres to the east of the project). Beyond this, the nearest towns with numerous shops are Koroit, approximately 19 kilometres to the south-east, and Port Fairy, approximately 22 kilometres to the south.

Orford

The township of Orford is located approximately 3.2 kilometres south-west from the project site, consisting of predominately farming properties, with sheep and cattle grazing the main land uses. The closest hub to Orford for retail and education is Port Fairy, with the closest secondary schools in Warrnambool and Hawkesdale.

First European settlement in Orford dates to 1856. The town has seen a progressive decline in population since the early 20th century, with the only primary school having closed in 1949. Today, Orford has a population of 102 residents and minimal community facilities, which include Orford Memorial Hall (Figure 17.13), Orford Recreation Reserve and Orford Country Fire Authority. The community hall is used by the local Orford Table Tennis Association and for community meetings and events. The recreation reserve serves as a hub for outdoor recreation, and a starting point for some horse trail riding gatherings.

The *Moyne Warrnambool Rural Housing and Settlement Strategy* (CPG Australia, 2010) identifies that Orford has low growth potential.

Figure 17.13
Orford Memorial Hall

Hawkesdale

Hawkesdale is a historic hamlet located approximately 13 kilometres north-east of Willatook. The town centre features subdivision into a number of small lots, while the town is surrounded by farming properties. The population is not expected to grow notably. The town is within commuting distance of Mortlake, Port Fairy and Warrnambool – all within about half an hour's drive – which provide numerous retail, education and employment opportunities.

Key community facilities and services within Hawkesdale include the Hawkesdale Racecourse and Recreation Reserve (Figure 17.14), outdoor swimming pool, golf club, football and netball club, education facilities (Hawkesdale P12 College and Hawkesdale and District Pre-school), churches, playground and barbeque area, and post office and general store. The population of Hawkesdale at the 2016 census was 319.

The Hawkesdale P12 College has 169 students (2020 enrolment) aged between 5 and 18 years. A school bus program provides transport to the school, which is free for eligible students (refer to Chapter 15 – *Traffic and transport* for school bus route details).

Figure 17.14
Hawkesdale Recreation Reserve
(*Source: Australia 247, by Phil Martin*)

Willatook

Willatook is a small settlement of 55 people, predominantly farming properties, with sheep and cattle grazing and plantation forestry being common land uses. Due to its very small size, the settlement is not referenced in the Moyne Warrnambool Rural Housing and Settlement Strategy. The nearest educational opportunities are Macarthur Primary School to the north-west, and Hawkesdale P-12 College to the east. Koroit, to the east, also offers a primary school. Port Fairy and Warrnambool further afield also offer primary and secondary school options.

Key community facilities in Willatook include the Willatook Community Hall (Figure 17.15), Willatook Recreation Reserve (tennis courts), and Country Fire Authority station on Willatook-Warrong Road. Willatook Community Hall is used to host community gatherings and events and is managed by a volunteer committee. The closest educational facilities are in Macarthur (primary school) and Hawkesdale (primary and secondary school).

Figure 17.15
Willatook Community Hall

Broadwater

Broadwater is a small settlement of 90 people located to the west of Willatook. The area is predominately characterised by farming properties. Port Fairy is closest hub for retail and education, being 25 minutes' drive, with direct access via the Hamilton-Port Fairy Road. Hamilton provides another hub, at 35 minutes' drive. Broadwater's closest schooling options are to the south (Port Fairy, Koroit, Hawkesdale), though Hamilton schools are also a possibility.

Community facilities in Broadwater are limited to tennis courts (Figure 17.16), used by the Broadwater Tennis Club, and the Broadwater Recreation Reserve.

Figure 17.16
Tennis court in Broadwater
(google 2022)

Tarrone

Tarrone is a small settlement of 69 people, predominantly characterised by farming properties, and located approximately 14 kilometres to the north of Port Fairy. With Port Fairy within about 10 minutes' drive, this provides the main retail and education hub for the settlement. Moyne River is located within close proximity to the Tarrone township district.

Macarthur

The Macarthur township region is located approximately 12 kilometres north of the project site. In the 2016 Census, Macarthur (State Suburb) was recorded to have a population of 522 residents. Community facilities provided in Macarthur include sporting facilities (golf club, bowls club, swimming pool and recreation reserve), accommodation, postal service, general store, church, preschool and primary school, small-scale retail stores, pharmacy and community health care, and emergency services.

Figure 17.17
Macarthur Township

17.6.4 Accommodation

The regional area has a good supply and mix of accommodation including motels, hotels, guest houses and caravan/holiday parks (including cabins). Most accommodation options are located in Warrnambool, Portland, Port Fairy and Hamilton, which are within relatively close proximity to the project site and provide a good range of support services for relocating workers. This includes (as of April 2021):

- 1,506 hotel, motel and serviced apartment rooms
- 256 cabins (caravan/holiday parks).

There are also accommodation options in smaller townships including Cobden and Terang, which are likely to be attractive for project workers.

Private accommodation is often used to support construction worker needs. For example, this could be through leasing of residential homes, either privately or through real estate agents. The Australian Bureau of Statistics Census data for 2016 indicates the local and regional area has an above-average level of unoccupied dwellings (16.1% in comparison to the Victorian state average of 11.7%). This includes approximately 1,055 unoccupied dwellings (or 36.1% of total dwellings) that are located in settlements within an hour's drive of the project site.

17.7 Community attitudes

As part of the doorknock engagement in 2019 and 2020 of dwellings within 6 kilometres, neighbours were asked for their opinions about the proposed project. The doorknock recorded 143 opinions of the owners of habitable dwellings within this area, with 94 respondents either supportive or neutral towards the project, and 49 objecting to the project. There were 21 landowners who were not able to be contacted during the doorknock, so their opinions are unknown. A significant portion of the community also see a range of benefits that the project would bring. These include the advancement of renewable energy and associated reduction in carbon dioxide emissions, the implementation of the Neighbour Benefit Sharing Program and community development program, as well as broader economic benefits and job creation (Figure 17.18).

Not all respondents provided reasons for their opinion about the proposed project. However, where they did provide a response, their comments were noted and the results of the survey identifying the key concerns of neighbouring landowners are presented in Figure 17.19. The most commonly reported concerns related to noise, visual, cumulative and traffic impacts, and to impacts on property values.

The key issues and concerns raised by stakeholders during the engagement activities, as well as findings of the media scan of local newspapers and social media, are summarised in Table 17.7. Responses to these issues and concerns and how they were considered as part of the project are further discussed in Chapter 6 – *Stakeholder consultation*.

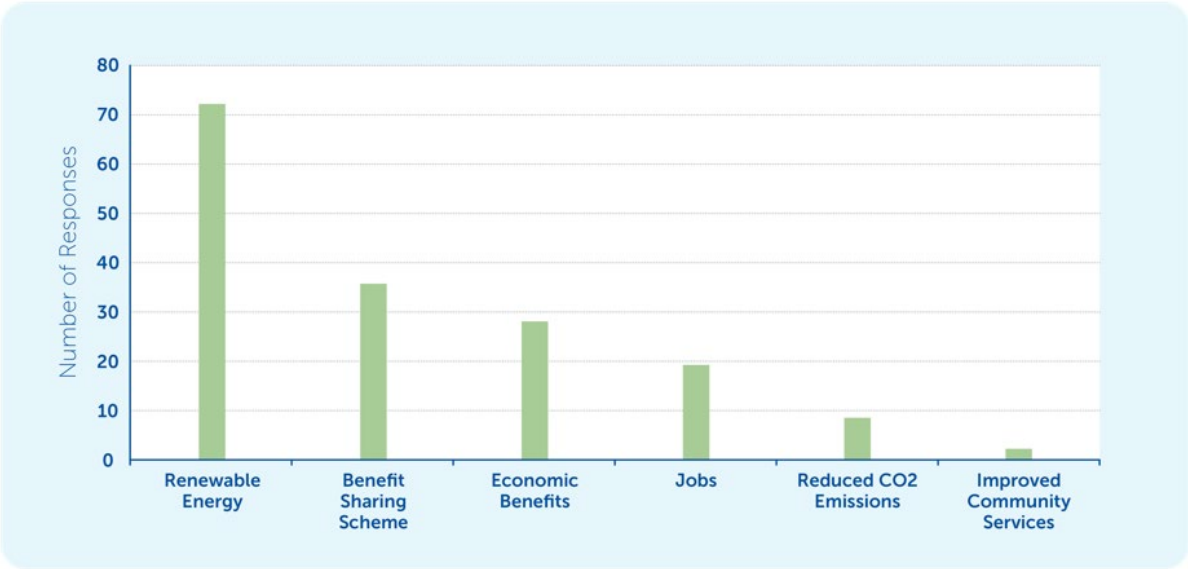

Figure 17.18 Positive community responses about the project benefits

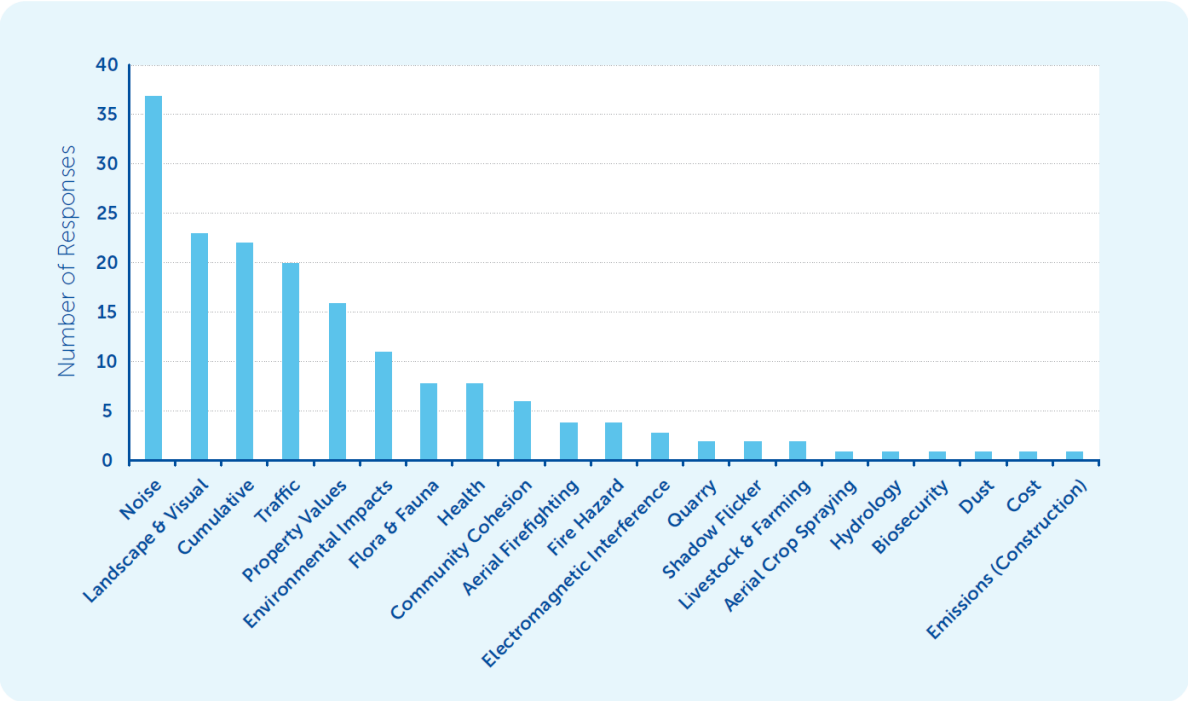

Figure 17.19 **Concerns raised by survey respondents**

Table 17.7 **Summary of key issues and concerns raised by stakeholders**

Matter	Key issues raised	Supporting chapter/ technical assessment
Noise	Concerns about noise associated with the operation of the project, including cumulative impacts from the Macarthur Wind Farm. Some residents are also concerned about the potential noise impacts during the construction phase of the project.	Chapter 13 – *Noise and vibration* Appendix E1 – *Noise and vibration* Appendix E3 – *Noise and vibration independent peer review*
Visual and landscape impacts	Some local residents, particularly around the north-east area of the project site, raised concerns that with existing and proposed neighbouring wind farms, there will be too many wind turbines and overhead powerlines visible in the local area that could change the character of the area, making it more of an industrial landscape.	Chapter 14 – *Landscape and visual* Appendix F1 – *Landscape and visual impact*
Damage to roads	Some local residents and Moyne Shire Council raised concerns that construction of the project could damage roads and create safety risks.	Chapter 15 – *Traffic and transport* Appendix G – *Traffic and transport impact*
Property values	Some local residents are concerned the project will devalue their properties and consider their properties to be 'their super'. That is, the sale of their properties would fund their retirement.	This chapter Appendix I – *Economic and social*
Cumulative impacts	Some members of the local community are concerned about potential cumulative impacts from the development of the project and existing and approved wind farm projects in Moyne Shire.	Chapter 24 – *Cumulative effects* Potential cumulative impacts have been assessed in relation to: • noise (Appendix E1) • biodiversity (Appendix D) • landscape and visual (Appendix F1) • traffic (Appendix G).

Matter	Key issues raised	Supporting chapter/ technical assessment
Aviation and fire risk	Some local residents are concerned about the potential impact of the project on their ability to apply fertiliser and weed and pest control via aerial application, and also the potential impact on aerial firefighting.	Chapter 23 – *Aviation* Appendix O – *Aviation*
EMI / TV reception	Some community members raised concerns relating to electromagnetic interference from the wind farms on TV and phone reception.	Chapter 22 – *Electromagnetic interference* Appendix N – *Electromagnetic interference*
Biodiversity	Some residents are concerned about the potential changes to the landscape will result in changes to local flora and fauna impacts, in particular the local brolga population.	Chapter 11 – *Brolga* Chapter 12 – *Biodiversity and habitat* Appendix D – *Biodiversity*
Health	The media scan identified community concerns that the constant noise will negatively impact the health of landowners and neighbours.	This chapter Appendix I – *Economic and social*
Neighbour Benefit Sharing Program	The project could be divisive in the local community. Various respondents noted that the Neighbour Benefit Sharing Program would provide important support for local communities within Moyne Shire.	This chapter Appendix I – *Economic and social*

17.8 Impact assessment

The social and economic impact assessment outlines potential effects of the project construction, operation and decommissioning on social values and the local economy, including measures to enhance social benefits and manage potentially negative impacts. The assessment by Ethos Urban is primarily a desktop study, informed by a review and analysis of publicly available documents relevant to the area, as well as information provided by Wind Prospect.

17.8.1 Impact pathways

Social impact pathways described below have been aligned to the classification of social impacts described in Figure 17.3.

Construction

Potential social and economic impact pathways during construction may include:

- earthworks and construction of project components, which may:
  - impact cultural connections to the land
  - impact the environment
- generation of dust, noise and vibration, and changes to the visual character of the landscape, which may:
  - impact local amenity
  - raise concerns about the community's health and safety
  - impact cultural connections to the land
  - raise concerns about impacts to property values
- increased traffic on local roads (including more heavy vehicles) and temporary changes to the road network affecting access and movement on local roads. This may:
  - impact way of life
  - impact local amenity
  - raise concerns about the community's health and safety

- arrival of construction workforce, which may:
  - temporarily change community composition
  - affect the community's sense of place
  - impact on availability of housing and other accommodation
- economic benefits associated with:
  - an increase and diversification of temporary local employment opportunities (both direct and indirect jobs)
  - increased spending within the region.

Further details about these impact pathways are included in technical chapters including:

- Chapter 2 – *Project rationale and benefits* for economic benefits from project construction
- Chapter 5 – *Project description* for details of the construction workforce
- Chapter 13 – *Noise and vibration*
- Chapter 14 – *Landscape and visual*
- Chapter 15 – *Traffic and transport*
- Chapter 18 – *Aboriginal cultural heritage*
- Chapter 19 – *Historical cultural heritage*
- Chapter 20 – *Air quality*.

These chapters are cross-referenced within the chapter where relevant.

Operation

Once operating, potential social and economic impact pathways mostly relate to the physical presence of wind turbines.

Potential social and economic impact pathways associated with the operation of the project include:

- generation of noise, shadow flicker and changes to the visual character of the landscape, which may:
  - impact local amenity
  - impact cultural connections to the land
  - raise concerns about the community's health and safety
  - result in environmental impacts
  - raise concerns about impacts to property values
- interference with communication systems, television, and wireless internet, which may:
  - influence the current way of life
- presence of wind turbines and supporting infrastructure, along with the presence of a small operational workforce, which may:
  - change community composition for the life of the project
  - affect the community's sense of place
  - create concerns about safety
- economic benefits associated with:
  - diversification of ongoing local employment opportunities (both direct and indirect jobs)
  - revenue/compensation.

These potential impact pathways are discussed in the following sections:

- Chapter 2 – *Project rationale and benefits* for economic benefits from project operation
- Chapter 5 – *Project description* for details of the operations workforce
- Chapter 12 – *Biodiversity and habitat*
- Chapter 13 – *Noise and vibration*
- Chapter 14 – *Landscape and visual*
- Chapter 15 – *Traffic and transport*
- Chapter 16 – *Land use and planning*
- Chapter 21 – *Shadow flicker and blade glint*
- Chapter 22 – *Electromagnetic interference*
- Chapter 23 – *Aviation*.

These chapters are also cross-referenced within the chapter where relevant.

Decommissioning

Decommissioning would have similar impact pathways to construction, associated with large equipment and transport of project components away from the site, but would be of lower magnitude and for a shorter duration. Given that these impacts would be experienced in more than 25 years time, there is some uncertainty as to the significance of these impacts to the community; however, they would be anticipated to be substantially lower than construction impacts.

17.8.2 Design mitigation

Avoidance and minimisation of impacts has been central to the development of the project. The approach has been to avoid potential impacts first, then minimise the severity of the impact, followed by the application of targeted management measures that protect people and the environment.

The project has its origins in 2009, when a thorough assessment for suitable wind farm sites in Victoria was completed. The assessment targeted sites with a strong wind resource, good access to grid capacity, relatively low population density, and a sufficiently large area to enable an economical grid connection (refer to Chapter 2 – *Project rationale and benefits*).

Once the project location had been chosen, the initial wind turbine layout design was gradually refined based on landowner interest and improved understanding of the site's social and environmental values. Design changes were made in response to this improved understanding, which often involved establishing buffer (or setback) distances between wind farm infrastructure (and associated construction works) and these values. The locations of the on-site substation and temporary quarry were also determined through careful consideration of potential impacts to social and environmental values. These design mitigations are described in more detail below.

Setback distances

From the earliest stage, a range of environmental and social factors have been incorporated into the project's geographic information system (i.e., digital mapping program) as constraints that influenced the siting of infrastructure (including wind turbines). Several of these constraints involved creating a setback from specific features, such as dwellings, townships, wetlands and roads. The purpose of incorporating these setbacks was to make sure that potential impacts could either be avoided or minimised.

The primary design measures to minimise impacts from noise, air quality, shadow flicker and changes to the visual character of the landscape has been to:

- implement a 1.5-kilometre turbine free buffer of most non-stakeholder dwellings and a 2-kilometre turbine free buffer at some non-stakeholder landowner dwellings in direct response to feedback from those neighbouring residents
- implement a 3-kilometre buffer around the Orford township zone.

To prevent wind turbine blade overhang into neighbouring properties or adjoining public land the following turbine-free buffers have been applied:

- 100 metres from the perimeter of the project site
- 100 metres from public roads
- 25 metres from access tracks on Crown land (also known as paper roads).

See Chapter 2 – *Project rationale and benefits* for more details about these buffers. Buffers that relate to other constraints, such as ecology, heritage and electromagnetic interference, can be found in those chapters.

On-site substation

In 2019 more land was included to the project site. The addition of this land to the central part of the site enabled the proposed on-site substation to be moved next to the Tarrone Terminal Station area. This resulted in a more efficient internal cable route design and removed the need for 5 kilometres of overhead transmission line between the on-site substation and the grid connection point at the Tarrone Terminal Station. The original transmission line would have resulted in greater visual impacts, which has subsequently been avoided by this relocation.

On-site quarry

Moyne Shire Council requested that wind farms assess the potential for on-site quarries as a means of reducing the impacts on local roads, local traffic volumes and pressure on existing local commercial quarries. The project includes an on-site quarry to provide crushed rock for the construction of the project. While the inclusion of the quarry would remove a large volume of construction related traffic, it does introduce other potential impacts such as on-site generation of noise and dust (see Chapter 13 – *Noise and vibration* and Chapter 20 – *Air quality*).

Neighbour Benefit Sharing Program

A key component of the project development has been the Neighbour Benefit Sharing Program, which was released publicly in 2020. The A Neighbour Benefit Sharing Program has been developed that provides ‘goodwill’ payments to neighbours (amongst other benefits). The program would start upon commissioning of the wind farm (i.e., once it starts exporting power to the grid) and continue annually for as long as the relevant turbines are operational. The Community Benefit Fund component of the program would be governed by an elected committee that represents the community. The program is explained in more detail in Chapter 2 – *Project rationale and benefits*. While not strictly an engineering design, the program is a key element of the project and is therefore categorised as design mitigation.

17.8.3 Management controls

Where feasible, design measures have been included to avoid potential social and economic impacts (see Section 17.8.2). To further minimise potential impacts, management controls would be implemented during the design, construction, operation and decommissioning of the project. Committed social and economic management measures are outlined in Table 17.8. A broad range of management measures have been proposed to minimise potential impacts to amenity, culture and the environment, and are presented within other technical chapters of this EES.

Table 17.8 Social and economic management measures

Social/ economic impact	Project phase	Management measures	Number
All potential impact pathways	Pre-construction, construction and operation	Implementation of an overarching Communications and Engagement Strategy to facilitate ongoing consultation between the proponent and the broader community. The strategy would: • provide an approach for ongoing engagement with the broader community about the long-term benefits and opportunities of the project • outline how the proponent will maintain a stakeholder database throughout the life of the project to assist identifying and resolving project issues experienced by stakeholders efficiently, to put stakeholder ease of communication and issue resolution at the heart of stakeholder relations • outline procedures and mechanisms for the regular distribution of accessible information about or relevant to the project • identify opportunities to provide timely, useful and accurate information regularly about construction activities, schedules and milestones • include measures to notify affected landowners and neighbours well in advance about any specific construction issues with direct impacts on properties (e.g., traffic management, out-of-hours work) and how they can easily reach the project team with questions • detail the mechanisms for advising the community in advance of upcoming works (where necessary) and how the proponent will work with community to mitigate the negative impacts of construction whenever possible • be reviewed and adapted based on community feedback so that the communications and engagement approach is fit for purpose and meets the needs of the community. The notification process for landowners in proximity of the quarry and wind turbines that require blasting would be contained within the Blast Management Plan (NV07).	SE01
	Pre-construction	Consultation would continue to be carried out with the affected communities to understand their preferences for mitigation and management measures, including: • consulting with local schools regarding bus routes and timetables to identify suitable windows for project inactivity (curfew times), or other measures to minimise or avoid impacts to school buses • proactively engaging with highly impacted landholders through one-on-one methods like kitchen table sit downs or phone calls to discuss upcoming disruptions and how they can be managed minimise impacts when possible • holding regular meetings with neighbouring residents to discuss any issues or concerns • engaging with local farmers to minimise disruptions to farming activities, and creating a forward plan for managing disruptions around farming cycles • maintaining the project website to provide up-to-date information on the status of the project during construction and operation, as well as provide a means for the community to contact the project's team.	SE02

Social/ economic impact	Project phase	Management measures	Number
	Construction	A complaints management procedure (including noise complaints response process) would be developed within the Communications and Engagement Strategy that: • outlines the process for making and recording complaints • provides a range of avenues (e.g., direct phone number, email) for community members to express their concerns or ask questions • specifies response and resolution procedures to ensure timely responses are provided to complaints raised • outline roles and responsibilities within the project team for the receipt, handling and escalation of complaints • outlines how community members can escalate their concerns should they not receive a response that meets their expectations.	SE03
Economic effects associated with an increase and diversification of employment opportunities and increased expenditure	Operation	Implementation of the Neighbour Benefit Sharing Program to promote community understanding and make a positive contribution to the potentially affected communities. The program would include the following payments for those with a dwelling located within 6 kilometres of a constructed wind turbine (excluding stakeholder landowners): • a one-off payment of $1,000 at the substantial commencement of construction • a neighbour benefit payment of: – $3,500 per constructed turbine located within two kilometres of the dwelling – $1,000 per constructed turbine located between two kilometres and three kilometres of the dwelling – $100 per constructed turbine located between three kilometres and six kilometres of the dwelling • the neighbour benefit payment would be a minimum of $1,000 and maximum of $30,000 per year • an energy cost offset plan to help the occupants of neighbouring dwellings with the cost of electricity, with an annual value of up to $2,000 • a Community Benefit Fund that contributes $1,000 per year per wind turbine upon commissioning of the wind farm. Further engagement and involvement with the affected communities would be carried out to determine how the Neighbour Benefit Sharing Program, and in particular the Community Benefit Fund, would be set up, managed and spent.	SE04
	Construction	A business register has been established for the project, which is expected to grow as awareness of the project increases through EES exhibition. Companies can register their interest in providing a range of goods or services through the website; https://www.willatookwindfarm.com.au/contractors. Preference will be given to local companies and businesses, where possible.	SE05
	Decommissioning	Develop a Decommissioning Strategy for the site to facilitate its rehabilitation/adaptive reuse as farmland or natural environment. Also consider opportunities to utilise the revenue generated (and/or as part of the Community Benefit Fund) from the project for habitat restoration or other environmental initiatives.	SE06

Social/ economic impact	Project phase	Management measures	Number
	Construction and operations	Develop partnerships with businesses, local employment agencies, training and education providers to maximise local employment and contract opportunities. Measures could include: • partnering with education and training organisations such as South West TAFE to offer special apprenticeships and programs • developing a local procurement strategy for employment or contracts that gives preference to local and regional residents and businesses, including incorporating local content requirements into key project contracts to maximise local employment opportunities.	SE07
Establishing connections with the local community	Construction and operation	Integrate ongoing workers with the community through partnerships with existing community groups and/ or through local events.	SE08
	Operation	Facilitate visits to the site with local residents, community groups, and other organisations throughout the operation stage to help build relationships and community understanding and ownership of the project, and ensure ongoing engagement with landowners and other stakeholders.	SE09
	Operation	Explore strategies to promote the tourism and employment opportunities arising from the project to foster a transitioning community identity and sense of pride.	SE10
	Construction and operation	Provide incentives for workers (both construction and ongoing) to become emergency services volunteers or get involved in local community groups.	SE11
Change in cultural values and connections	Construction and operation	Ongoing engagement with the local community and Aboriginal organisations to explore ways in which connections to local cultural heritage can be preserved and enhanced.	SE12
	Construction and operation	Celebrate the site's history as well as its transition, for example using visual signage that communicates information about the project and/or highlights local stories and reflects local values.	SE13
	Construction and operation	Incorporation of high-quality pre-construction and ongoing education of on-site staff (e.g., via inductions) about Aboriginal history and current connection to land, as well as the more recent agricultural history and community information to encourage respectful behaviours.	SE14
Housing and commercial accommodation availability	Construction	Construction Workforce Accommodation Strategy would be developed prior to the construction phase of the project commencing. The Construction Workforce Accommodation Strategy, which would reflect local market conditions at the time, would aim to minimise impacts on the community especially for those reliant on low-cost housing as well as ensuring sufficient accommodation is available to service the tourism sector. The Construction Workforce Accommodation Strategy would be prepared in conjunction with local councils, commercial accommodation providers, private accommodation providers, the real estate sector and other relevant stakeholders.	SE15

17.8.4 Residual effects

Residual effects are described based on the method described in Section 17.5.2. While all construction impacts would be temporary, potential impacts during operation may last for the life of the wind farm (i.e., 25+ years). Residual effects related to decommissioning, associated with large equipment and transport of project components away from the site, would have similar impacts to the construction phase but would be of lower magnitude and for a shorter duration. The significance of resulting social impacts are anticipated to be substantially lower than construction impacts, noting that there is some uncertainty as they would be experienced in more than 25 years time.

Way of life

People's way of life in terms of how they live, work, play and interact with one another on a day-to-day basis has the potential to be impacted by the project. These impacts may result from changes in amenity (such as noise and air quality) and the visual character of the landscape, as well as temporary disruptions to normal patterns of movement and access within the project site.

Construction

The scale of construction is substantial in the context of the site's rural setting, and therefore there is the potential for some construction activities to impact on the local way of life, particularly for surrounding landowners. During construction, the main impact to people's way of life in and surrounding the project site would be interaction with the project construction activities. Project construction would involve the presence of construction vehicles and machines (such as cranes), construction compounds, a quarry and concrete batching plants. Construction activities may cause some dust, noise, vibrations, light pollution and visual impacts that are disruptive to the local way of life.

Over size and over mass vehicle movements associated with construction activities, particularly the transport of wind turbine blades and tower segments, may disrupt normal patterns of movement, requiring temporary closures or diversions on local roads and/or resulting in increased traffic volumes on local roads. This may lead to feelings of frustration and inconvenience among local residents and farmers, as well as increased travel times.

The presence of an on-site quarry would reduce the number of trucks moving to and from the site, in comparison to off-site quarrying, and therefore would mitigate some of the potential traffic impacts of construction activities. Other measures to limit potential interaction with over size and over mass vehicle movements, and from construction related activities more generally, include the successful implementation of the Traffic Management Plan and Communications and Engagement Strategy (SE01). These would include requirements to notify affected landowners and neighbours about specific construction issues that may impact properties. These measures are described in Table 17.8 and further discussed in Chapter 15 – *Traffic and transport* as they relate to traffic.

The project would require upgrading of local roads and intersections for plant, materials and equipment deliveries, and the removal of materials from the site. Part of the Woolsthorpe-Heywood Road would be upgraded to a two-lane sealed road, and intersection upgrades are also proposed at project access points to minimise traffic impacts from project vehicles. Upgrades to Riordans Road and McGraths Road are also proposed (Appendix G – *Traffic and transport*). These upgrades may be seen as beneficial for community members, particularly in the longer term.

Temporary disruption to way of life for the local community may occur during construction due to potential amenity impacts (e.g., noise and visual impacts) and changed access (associated with heavy vehicle movements). Impacts would be limited to the community within the immediate vicinity of the project (i.e., project site and primary study area). Ethos Urban predict that impacts to way of life during construction would be likely, with a minor magnitude (i.e., mild deterioration in conditions for a reasonably short time for a small number of people) resulting in a medium social impact significance rating during the two-year construction period.

Operation

Way of life is predicted to largely return to the current (pre-wind farm) conditions during wind farm operation. Once constructed, hosts of wind turbines and supporting infrastructure typically return to their existing practices, with only slight changes.

Through appropriate turbine design and siting, impacts to communication systems that use electromagnetic waves (due to electromagnetic interference), and concerns regarding health and safety associated with access to emergency services, are likely to be minimal. A pre-construction television and radio reception strength survey would be conducted to allow pre- and post-construction reception strength to be compared. If any impacts are recorded through this process, corrective measures would be implemented (Appendix N – *Electromagnetic interference*).

The impact of the project on agricultural activity is likely to be minimal as project infrastructure would occupy only a small proportion of agricultural land, estimated at approximately 99.5 hectares or 2.4% of the project site. As turbine infrastructure does not significantly disrupt other farming practices (such as sheep and cattle grazing and dairy farming), activities are anticipated to only be marginally impacted. New and improved access tracks between turbines may facilitate more efficient movement around the farms. Turbines and infrastructure would be spread across 16 stakeholder landowners, providing income returns to these farming families. Securing a guaranteed 25-year income stream allows farming families more flexibility in the long-term planning for their farming operations, including succession planning.

During operation, appropriate visual screening is likely to mitigate visual impacts to some extent. Regular meetings with neighbours and residents would be held to discuss any concerns. However, negative impacts are likely to be experienced by some community members, including to their peaceful enjoyment, farming activities and recreation. Ethos Urban identified that impacts to way of life during project operation are possible for the community within the project site and primary study area, with a moderate magnitude resulting in a medium social impact significance rating.

Community

Impacts to ‘community’ are broad and can be influenced by a wide range of factors, including:

- changes to the composition of community
- changes in social elements including community cohesion and stability
- people’s sense of place and changes to physical community elements, including its character, services and facilities, and how it functions.

Construction

During construction the composition of the community would be affected by the presence of a large workforce. The average size of the workforce over the construction period was predicted to be 180 people, with peaks potentially up to 270 people. Of this workforce, approximately 60% (or 110 people) are predicted to live locally (based on similar sized wind farm projects), with the remainder coming from other regions of Victoria (and interstate). Given the proximity to regional towns and the city of Warrnambool, this workforce would be accommodated locally in Port Fairy, Warrnambool and Koroit, with daily travel to and from the site, potentially visiting local businesses and interacting with the local community on a day-to-day basis. Even a small influx of workers would significantly impact the size and composition of the surrounding townships and localities. The relationship between the construction workers and local residents and farmers may result in a temporary impact to how the community functions.

The increase in employment would have a positive effect on local and regional businesses, with increased expenditure on services such as accommodation, hospitality, retail and medical from local wage spending. This is estimated to equate to $6.1 million in wages (2022 dollars) earned by project workers coming in from outside the region. An estimated $3.5 million of those wages (2022 dollars) would be spent locally. This would benefit local and regional businesses and service providers during the construction period.

The presence of a construction workforce from outside the region has the potential to result in tensions between the construction workforce and the local community. These effects would most likely be experienced in areas where the workforce is accommodated or towns that they access for services (e.g., Koroit, Warrnambool and Port Fairy). The construction phase may also impact the community's sense of place and belonging due to changes in how the area looks and feels, with a temporary presence of construction equipment, materials, increased noise and heavy vehicles.

Disruption to community due to potential changes in character from construction and the influx of unfamiliar workers can be limited to an extent through proposed social management measures, including the successful implementation of a Communications and Engagement Strategy (SE01) and complaints management procedure (SE03).

Ethos Urban predict that following the implementation of management measures temporary impacts to sense of place during construction would be possible for the community within the primary and secondary study areas, with a moderate magnitude resulting in a high social significance rating.

Operation

Once in operation, the project has the potential to influence community cohesion by creating divisions between those who support the project and those who do not, and between community members who have received different benefit program entitlements from the project or no direct benefit at all.

The Neighbour Benefit Sharing Program (SE04) has been developed to share benefits more broadly and fairly. While this is likely to alleviate some of the conflict within the community, there is a portion of the community that would be likely to remain opposed to the project.

Ethos Urban also note that as more wind farms become operational in the region there may be changes to character and sense of place. There is the potential to somewhat mitigate the potential negative ongoing impacts to the community's sense of place and enhance the positive benefits of the project by ensuring measures are put in place to maintain cultural connection, values and stories to the site and area, as well as measures to foster connections between workers and the existing community. The Community Benefit Fund may assist in providing community input into projects that provide long-term benefit to the community.

Other measures that would be implemented include forming partnerships with existing community groups and/or through local events, facilitating visits to the wind for local residents, community groups, and other organisations, and encourage workers to volunteer or participate with community organisations. These measures are described in Table 17.8.

During operation, the likelihood of impacts to sense of place and character are possible for the community within the primary and secondary study areas, with a moderate magnitude resulting in a medium social impact significance.

Culture

Culture is defined as people's shared beliefs, customs, values and stories, and connections to land, places, and buildings. Impacts to culture may result from changes to the community's cultural connection to the landscape.

The Aboriginal cultural heritage of the region is described in Chapter 18 – *Aboriginal cultural heritage* and historic heritage of the region is described in Chapter 19 – *Historical cultural heritage*.

Construction

Potential impacts to known Aboriginal cultural heritage places and areas likely to contain Aboriginal cultural heritage have been minimised through design mitigation. However, there remains the possibility that a currently unknown Aboriginal cultural heritage is discovered during project construction. Protective measures, included as management conditions in the CHMP, would be implemented during project construction.

The community's cultural connections to the land within the primary and secondary study areas, particularly to intangible values, may be temporarily impacted by the land use change during the construction phase. Impacts to these values are unlikely with the implementation of management measures and contingency measures contained within the CHMP. With these measures, Ethos Urban assessed the social significance for cultural impacts during construction as low.

Operation

Once operational, some members of the local community may experience impacts to their cultural connections to the land due to the presence of new wind turbines within a largely agricultural setting. These impacts would be associated with the transition of both the project site and broader area from one that is predominantly agricultural in character to one that is characterised by a mix of wind farms and agricultural uses. In contrast, the presence of wind turbines may also be perceived as a positive cultural change by contributing to government targets for renewable energy production and the reduction of greenhouse gas emissions.

During operation, there is potential to mitigate some potential negative impacts by maintaining and celebrating cultural connections to the land. There would be opportunities to minimise changes to, or even enhance, community cultural connection through local storytelling or art projects (related to Aboriginal and/or non-Aboriginal heritage), which could be funded through the Community Benefit Fund.

Some sensitivities could remain during operation, particularly in relation to concern from some residents/landowners about the transition of the site and broader area from agricultural uses to a perceived concentration of wind farms. As such, Ethos Urban determined that impacts to cultural values and connections during operation are possible within the secondary study area, with a noticeable change anticipated. The social significance was rated as medium.

Health and wellbeing

Health is a state of complete physical, mental, social and spiritual wellbeing. During construction and operation, impact pathways with the potential to influence health and wellbeing relate to the reduction in amenity (e.g., from the generation of noise and dust), shadow flicker and visual appearance.

Construction

Potential changes in amenity during construction from decreased air quality from the generation of dust, increased noise levels and vibrations may impact physical and mental wellbeing.

A key design measure to minimise noise and reduced air quality was the creation of adequate separation distances between construction areas (including the quarry) and dwellings. To minimise the impact of construction noise on the local community, construction activities would generally occur during normal working hours of Monday to Friday, 7 am to 6 pm and Saturday, 7 am to 1 pm. Works outside of these normal hours could be required throughout construction and these occurrences would be communicated in advance to Council and local residents, in accordance with the Communications and Engagement Strategy (SE01).

The assessment of air quality during construction concluded that the operation of the quarry would be the most significant source of dust emissions (Chapter 20 – *Air quality*). Modelling indicated that predicted emissions at the nearest sensitive receptor site to the on-site quarry (1.4 kilometres away) were below the project standards for all air pollutants. Dust emissions generated from other construction work areas were predicted to be significantly less. Dust impacts across the project site are not expected with management measures in place.

While there may be periods when construction noise is audible at nearby dwellings and dust is visible, it is unlikely to result in a reduction in health, but may be a source of annoyance or frustration, particularly for those that oppose the project. The assessment of construction noise concluded that noise was predicted to be within regulated limits to avoid unreasonable disturbance to people (Chapter 13 – *Noise and vibration*).

With the implementation of management measures, the social impact assessment considered that temporary impacts to community health and wellbeing from a reduction in amenity (predominantly from noise and visual impacts) during construction are possible within the primary study area, however there would be no noticeable change experienced by the community. As such, the social significance is low.

Operation

During operation of the wind farm, impact pathways with the potential to influence health and wellbeing relate to operational noise, shadow flicker and visual appearance. There are concerns within the community that there are negative health impacts to people living near wind turbines. The National Health and Medical Research Council assessed the evidence on wind farms and human health, under the guidance of a reference group, and concluded that there is no consistent evidence that wind farms cause adverse health effects in humans (NHMRC, 2015).

While noise from operating wind turbines is predicted to be within regulated limits (Chapter 13 – *Noise and vibration*), the possibility remains for annoyance for some people living in proximity to the wind farm.

The visual prominence of wind turbines at the site may have negative mental wellbeing impacts for those who perceive their presence to be a blight on the previously uninterrupted landscape.

Shadow flicker may also contribute to negative mental wellbeing (during daytime hours). The maximum occurrence of shadow flicker at non-stakeholder dwellings is less than the maximum specified in the Policy and Planning Guidelines (DELWP, 2021f) (Chapter 21 – *Shadow flicker and blade glint*).

A key measure to limit potential health and wellbeing impacts is to create separation distances between wind turbines and non-stakeholder dwellings of 1.5 to 2 kilometres, and 3 kilometres to the Orford township boundary. Additional measures are also outlined in Chapter 13 – *Noise and vibration* and Chapter 14 – *Landscape and visual*.

The social impact assessment considered that, with the implementation of management measures, impacts to community health and wellbeing within the primary and secondary study areas from a reduction in amenity (predominantly from noise and visual impacts) during operation are possible, however the magnitude was considered minimal. As such, the social impact significance is rated as low.

Environment and amenity

Environment and amenity values include the quality of the air and water people use, the level of hazard or risk, dust and noise they are exposed to, and their physical safety.

Construction

Impacts relating to construction noise and air quality discussed in the health and wellbeing section above also apply to the discussion of amenity, therefore are not discussed again here.

During construction, impacts to land, water and air and associated changes in amenity may be experienced by the community. Based on stakeholder engagement feedback, the most reported concerns related to changes in noise and visual amenity. Environmental impacts and impacts to flora and fauna were raised, but less frequently.

During construction there would be increased traffic volumes on local roads, including heavy vehicles. There would also be construction works at access points off public roads, and some road upgrades. These are described in detail in Chapter 15 – *Traffic and transport*.

The project has been designed avoid native vegetation and trees, as such construction of the project would result in the loss of up to 4.6 hectares of native vegetation and 6 large trees (representing 0.5% of existing native vegetation mapped within the project site).

Ethos Urban assessed the magnitude of construction impacts to the local community within the primary study area because of changes to the environment and amenity as moderate, with a noticeable (temporary) change anticipated. As such the social impact significance rated as high.

Operation

Impacts relating to operational noise discussed in the health and wellbeing section above also apply to the discussion of amenity, therefore are not discussed again here. Potential impacts to amenity (primarily noise and visual) have been addressed via several design mitigations, as described in Section 17.8.2.

The existing landscape, including volcanic landforms, would be altered with the introduction of large wind turbines and a network of access tracks across the site. Following rehabilitation of construction areas no longer required, project infrastructure would occupy an area of up to 100 hectares (or 2.4% of the site). From the perspective of some community members this may impact the environmental and amenity values of the site. For some landowners and community members, the presence of the project turbines and other nearby wind farms may result in cumulative impacts to environment and amenity.

While changes to the landscape were not predicted to significantly change the character of the area, the landscape and visual impact assessment (Appendix F1) notes that perceived impacts to individuals varies and those who do not like the appearance of the wind farms would likely experience high visual impacts. Some non-stakeholder dwellings (and their private open space) orientated to take in views of the landscape features would have the wind farm within their views.

With the implementation of management measures during operation, impacts to environment and amenity are possible and there may be a moderate deterioration to environmental values and amenity (e.g., noise environment and visual character of the landscape) within the primary and secondary study areas. Ethos Urban assessed the overall significance of these impacts as medium.

Decision-making systems

Decision-making systems refers to the extent to which people can participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose. In the context of the project, the key aspect of decision-making systems is whether the community feels they have been involved in the assessment, planning and decision-making process of the project, but also during construction and operation of the project.

Construction

Some individuals may perceive negative impacts regarding their ability to influence decision-making during construction. The Communications and Engagement Strategy (SE01) would provide clear process to inform communities in advance about planned construction works. Potential adjustments to the strategy could be made through close consultation and clear communication with communities through the complaints management process.

Ethos Urban identified that negative impacts in relation to people's ability to influence decisions relating to the project during construction were possible for the community within the primary and secondary study areas, but the magnitude of impact would be minimal. As such, the social significance was rated as low.

Operation

If the project proceeds, it would be developed while maintaining the open approach to stakeholder engagement that has been followed throughout its development to date. The project Communications and Engagement Strategy (SE01) would guide the project's ongoing community and stakeholder engagement throughout the development and operation of the project. Opportunities to maximise potential longer-term benefits would be achieved through the Neighbour Benefit Sharing Program, and specifically the Community Benefit Fund (SE04). A key aspect of this project would be independent governance led by the community to shape the focus of funding decisions.

Ethos Urban concluded that, while it is possible that individuals within the primary study area may perceive some negative impacts in relation to their ability to influence decisions relating to the operation of the project, there would be minimal effect on the overall local community. As such, the social significance was rated as low.

Personal and property rights

Personal and property rights relate to how people are affected economically, or whether they experience personal disadvantage. Potential impacts to personal and property rights include reduced housing and accommodation availability with the influx of the construction workforce, and impacts to property values and livelihoods (both positive and negative).

Construction

During construction, individuals may perceive negative impacts in relation to construction activities affecting the prosperity and economic livelihood of farming properties. During this period there would also be positive impacts, including the increase and diversity of local construction jobs, and broader economic effects. Measures, such as developing partnerships between local employment agencies, businesses and landowners, would demonstrate positive benefits of the project.

Based on information for similar wind farm projects, Ethos Urban estimate that about 110 full time equivalent jobs or a peak of 160 full time equivalent jobs will be sourced from the primary study area. These staff would comprise a range of occupations and their length of work on the project would vary. A range of accommodation types from short to longer duration rentals would be required.

Ethos Urban estimated that the region currently has around 1,760 commercial rooms and cabins (mainly in Hamilton, Port Fairy and Warrnambool). The estimated required accommodation equates to approximately 6% of total accommodation stock. The influx of these workers would support higher occupancy rates and revenues for local and regional accommodation operators during off-peak seasons, and also provide opportunities for local homeowners to lease properties over the construction period.

The Macarthur Wind Farm project was serviced by commercial and resident accommodation providers in the major townships (Port Fairy, Warrnambool and Hamilton) as well as in local townships/settlements such as Macarthur, Koroit, Hawkesdale and Penshurst, and a similar pattern would be anticipated with regard to the Willatook Wind Farm project.

Ethos Urban identified that negative impacts in relation to construction activities impacting the prosperity and economic livelihood of farming families in the local area (i.e., within the primary study area) was possible, and following implementation of mitigation measures, was of minor magnitude. As such, the social impact significance was rated as medium.

Operation

There is a concern from some landowners that the ongoing presence of the project, or the cumulative impact of the project alongside several wind farms, would negatively impact on property values. Ethos Urban note that this may lead to worry or anxiety that affects their personal wellbeing. This concern was raised by some community members. For example, it was noted by non-stakeholder landowners that the sale of their properties would fund their retirement and therefore any negative impact to their property value was a key concern (see Chapter 6 – *Stakeholder consultation*).

Ethos Urban noted that research from the United States, United Kingdom and Australia shows that land and property values are subject to a range of complex factors and relationships, and are not necessarily impacted by the presence of nearby wind farms. One study of impacts of wind farms on property prices (Urbis, 2016), utilising statistically robust quantitative analysis techniques, concluded that there was insufficient sales data to provide a definitive answer to the question of whether wind farm development in NSW impacted on surrounding land values. They also mention that, based on Australian and international studies, most published reports concluded that there is no impact or a limited definable impact of wind farms on property values.

The availability for neighbours and nearby residents to access the Neighbour Benefit Sharing Program throughout the operation of the project has been designed to maximise broader economic benefits beyond stakeholder landowners.

Ethos Urban identified that operation of the project would possibly impact personal and property rights (associated with economic effects) within the primary and secondary study areas following implementation of mitigation measures, and the magnitude of impact would be minor. The social significance was assessed as medium.

Fears and aspirations

Fears and aspirations relate to the communities' perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

Feedback collected by the project team from stakeholders and non-stakeholders indicates that support for the Willatook Wind Farm is mixed. There are concerns relating to negative effects of noise, changes to visual amenity, and construction related effects relating to traffic and impacts to roads. There was also some apprehension to change and growing concern regarding the potential cumulative impacts of wind farms in the area for those who live nearest to the existing and approved sites.

A portion of the community do, however, see a range of benefits that the project would bring. These include the advancement of renewable energy and associated reduction in carbon dioxide emissions, the implementation of the Neighbour Benefit Sharing Program and community development program, as well as broader economic benefits and job creation.

Construction

Ethos Urban note that the construction period would be the most intense period in terms of site activity and movement. Construction activities may create feelings of fear in some members of the community about the degree of change occurring, for example visual changes to the landscape or natural environment, or increased traffic. In others, increased construction activity might signal a period of optimism with the generation of local jobs. However, some of the fears expressed about wind farms may stem from broader cultural or ideological concerns related to regional development and character, which would not be resolved by this project alone.

These impacts would be limited through the implementation and adherence to the construction management procedures including traffic management (see Chapter 15 – *Traffic and transport*), minimisation and management of construction noise and vibration (see Chapter 13 – *Noise and vibration*), and workforce management and inductions, however effects are still possible and predicted to be of moderate magnitude for the community within the primary and secondary study areas. As such, the social impact significance was rated as medium.

Operation

Most concerns raised during stakeholder engagement relate to the operation of the project, including the potential negative effects of noise created by wind turbines, changes to visual landscape and amenity, and cumulative effects that of the project may have. The key measure to limit these effects has been implementing a 1.5-kilometre turbine-free buffer (or greater) during the project design of all non-stakeholder dwellings, which is more than the 1-kilometre buffer required under the Victoria Planning Provisions (see Chapter 16 – *Land use and planning*). A range of other management measures are outlined in Chapter 13 – *Noise and vibration* and Chapter 14 – *Landscape and visual*.

Engagement with stakeholders regarding these issues would be a focus of the exhibition of the EES. There are opportunities to maximise longer-term social outcomes, which would be delivered through the implementation of the Community Benefit Fund. Based on experiences of other wind farms, the number of complaints received for operating wind farms is significantly lower than proposed wind farms. Notwithstanding this, Ethos Urban considered that continued concerns or fears relating to the project operation are possible with the implementation of management measures, resulting in a minor magnitude of impact. As such, the social impact significance relating to the fears and aspirations of the community within the primary and secondary study areas was rated as medium.

17.8.5 Impact assessment summary

A summary of the social and economic impact assessment is shown in Table 17.9 below, with the full assessment presented in Appendix I – *Economic and social*.

Table 17.9 Residual social impact assessment summary

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
Way of life Impacts may result from changes in amenity and the visual character of the landscape, as well as temporary road disruptions.	Construction	• Use of an on-site quarry to limit the generation of traffic movements on local roads. • Development and implementation of a detailed Traffic Management Plan to limit potential interaction with over size and over mass vehicle movements and from construction related activities (TR01). • Implementation of a Communications and Engagement Strategy to include processes to clearly inform communities in advance about planned construction works (e.g., out of hours work, traffic management etc.) (SE01). • Implementation of a complaints management system to ensure that the community is able to provide feedback on the effectiveness of mitigation measures (SE03).	Disruption to way of life for the local community may occur during construction due to potential amenity impacts (e.g., noise and visual impacts) and changed access (associated with heavy vehicle movements). Impacts would be limited to the community within the immediate vicinity of the project. Impacts to way of life during construction would be likely, with a mild deterioration in conditions for a reasonably short time for a small number of people.	Likely	Minor	Medium
	Operation	• Implementation of a Communications and Engagement Strategy including regular meetings with neighbours and residents to discuss concerns (SE01). • Conducting visual screening for any dwellings within 6 kilometres requesting it (LV03). • A pre-construction television and radio reception strength survey with any negative impacts being remedied (EMI08).	The way of life is predicted to largely return to the current (pre-wind farm) conditions during wind farm operation. There is the potential for negative impacts to be experienced by some stakeholders during the operation phase, including peaceful enjoyment, farming activities, communication and recreation.	Possible	Moderate	Medium

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
Community Impacts to community due to changes in community composition, social cohesion and sense of place.	Construction	• Enhance connections with the community through partnerships with existing community groups and/ or through local events (SE07). • Provide incentives for workers to become involved in local community groups (SE11). • Implementation of a Communications and Engagement Strategy (SE01).	Disruption to community due to potential changes in character from construction and the influx of unfamiliar workers. The presence of a construction workforce from outside the region has the potential to result in tensions between the construction workforce and the local community.	Possible	Moderate	Medium
	Operation	• Implement Neighbour Benefit Sharing Program to share benefits more broadly and fairly (SE04). • The Community Benefit Fund could assist in providing community input into projects that provide long term benefit to the community (SE04). • Enhance connections with the community through partnerships with existing community groups and/ or through local events (SE07). • Encourage workers to become involved in local community groups (SE08 and SE11).	As more wind farms become operational in the region there may be changes to character and sense of place. There is potential to somewhat mitigate the potential negative ongoing impacts and enhance the positive benefits of the proposed wind farm by ensuring measures to maintain cultural connection, values and stories to the site and area, as well as measures to foster connections between workers and the existing community.	Possible	Moderate	Medium
Culture Impacts to culture may result from changes to the community's cultural connect to the landscape.	Construction	• Implement the Cultural Heritage Management Plan for the project (AH01-03). • Education of construction staff (e.g., via inductions) about the history and connection to land (SE14). • Implement a complaints management system would ensure that the community is able to provide feedback on any potential impacts to cultural heritage during the construction phase (SE03).	The community's cultural connections to the land, particularly to intangible values, may be impacted by the land use change during the construction phase. However, with management measures in place, these are predicted to be minimal.	Unlikely	Minimal	Low

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
	Operation	• Education of operational staff (e.g., via inductions) about the history and connection to land (SE14). • Continue engagement with the local community and Aboriginal organisations to explore ways in which connections to local cultural heritage can be preserved and enhanced (SE12). • Celebrate the site's history that highlights local stories and reflects local values (SE13). • Implementation of the Community Benefit Fund, which could fund local storytelling or art projects (SE04).	Some members of the local community may experience impacts to their cultural connections to the land due to the presence of new wind turbines within a largely agricultural setting.	Possible	Moderate	Medium
Health and wellbeing Impact pathways relate to the reduction in amenity, shadow flicker and visual appearance	Construction	• The key design measure to minimise noise and reduced air quality was the creation of adequate separation distances between construction areas (including the on-site quarry) and dwellings. • Implement traffic management measures outlined in Chapter 15 – *Traffic and transport*). • Implement measures to limit impacts to air quality – Chapter 20 – A*ir quality.* • Implement measures to limit impacts to noise – Chapter 13 – *Noise and vibration.* • Implement a Communications and Engagement Strategy to ensure clear and effective communications, for example, notifying residents in advance about planned works (SE01). • Implement complaints handling process to ensure community feedback on potential construction impacts are followed up and mitigation measures are reviewed and amended if required (SE03).	Noise and air quality are predicted to be within regulated limits to avoid unreasonable disturbance to people. While there may be periods when construction noise is audible at nearby dwellings and dust is visible, it is unlikely to result in a reduction in health, but may be a source of annoyance or frustration, particularly for those that oppose the project.	Possible	Minimal	Low

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
	Operation	• The key design measure to minimise noise and reduced air quality was the creation of adequate separation distances between construction areas (including the on-site quarry) and dwellings. • Conducting visual screening for any dwellings within 6 kilometres requesting it (LV03).	Noise and shadow flicker are predicted to be within regulated limits to avoid unreasonable disturbance to people, however it is possible that there would be some residual impact for some landowners.	Possible	Minimal	Low
Environment and amenity Changes in the quality of the air, water, and noise that people are exposed to, and their physical safety	Construction	• The key design measure to minimise noise and reduced air quality was the creation of adequate separation distances between construction areas (including the on-site quarry) and dwellings. • Implement measures to limit impacts to surface waters in Chapter 10 – *Surface water.* • Implement measures to limit impacts to air quality – Chapter 20 – *Air quality.* • Implement measures to limit impacts to noise – Chapter 13 – *Noise and vibration.* • Implement measures to limit impacts to native vegetation, flora and fauna in Chapter 12 – *Biodiversity and habitat.* • Implement traffic management measures outlined in Chapter 15 – *Traffic and transport*.	During construction, impacts to land, water and air and associated changes in amenity may be experienced by the community. The magnitude of construction impacts to the local community because of changes to the environment and amenity is predicted to be moderate.	Likely	Moderate	High

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
	Operation	• The key design measure to minimise noise and reduced air quality was the creation of adequate separation distances between construction areas (including the on-site quarry) and dwellings. • Conducting visual screening for any dwellings within 6 kilometres requesting it (LV03). • Implement measures to limit impacts to noise – Chapter 13 – *Noise and vibration.*	The existing landscape would be altered with the introduction of large wind turbines and a network of access tracks across the site. For some landowners and community members, the presence of the project turbines and other nearby wind farms may result in cumulative impacts to environment and amenity.	Possible	Moderate	Medium
Decision-making systems Whether the community feels they have been involved in the assessment, planning, and decision-making process of the project, but also during construction and operation of the project	Construction	• Communications and Engagement Strategy would provide clear process to inform communities in advance about planned construction works (SE01).	Negative impacts in relation to people's ability to influence decisions relating to the project during construction was assessed to be possible, but the magnitude of impact considered minimal.	Possible	Minimal	Low
	Operation	• Implementation of Communications and Engagement Strategy (SE01). • Implement the Neighbour Benefit Sharing Program to maximise potential longer-term benefits (SE04). • Implement the Community Benefit Fund and proactively seek contribution to shaping project decisions, such as the format and focus of the fund, to allow the community to participate in decisions (SE04).	It is possible that individuals may perceive some negative impacts in relation to their ability to influence decisions relating to the operation of the project. These were assessed to have a minimal effect on the overall local community.	Possible	Minimal	Low

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
Personal and property rights Reduced housing and accommodation availability with the influx of the construction workforce, impacts to property values and livelihoods (both positive and negative).	Construction	• The development and implementation of a Communications and Engagement Strategy, which highlights the opportunities for local job creation (SE01). • Developing partnerships between local employment agencies, businesses and landowners would also demonstrate positive benefits of the project (SE07). • Development of a Construction Workforce Accommodation Strategy would be developed prior to the construction phase of the project commencing (SE15).	During construction, individuals may perceive negative impacts in relation to construction activities impacting the prosperity and economic livelihood of farming properties in the local area. These impacts were assessed as possible and, following implementation of mitigation measures, of minor magnitude.	Possible	Minor	Medium
	Operation	• The Neighbour Benefit Sharing Program designed to maximise broader economic benefits beyond stakeholder landowners (SE04). • Developing partnerships between local employment agencies, businesses and landowners would also demonstrate positive benefits of the project (SE07).	Operation of the project would possibly impact personal and property rights (associated with economic effects) following implementation of implementation of mitigation measures and the impact would be of minor magnitude.	Possible	Minor	Medium
Fears and aspirations Concerns relating to negative effects of noise, changes to visual amenity and construction related effects relating to traffic and impacts to roads	Construction	• Implementation of a Communications and Engagement Strategy to address any ongoing community concerns (SE01). • Implementation of a complaints management system to ensure that the community is able to provide feedback on the effectiveness of mitigation measures (SE03). • Implement traffic management measures outlined in Chapter 15 – *Traffic and transport*). • Implement measures to minimise construction noise and vibration outlined in Chapter 13 – *Noise and vibration.*	The construction period would be the most intense period in terms of site activity and movement. Construction activities may create feelings of fear in some members of the community about the degree of change occurring, for example visual changes to the landscape or natural environment, or increased traffic. In others, increased construction activity might signal a period of optimism with the generation of local jobs.	Possible	Moderate	Medium

Social factor and impact pathway	Project phase	Key management measures (with measurement number)	Residual impact	Residual impact rating		
				Likelihood	Magnitude	Social significance
	Operation	• Implementation of a Communications and Engagement Strategy to address any ongoing community concerns (SE01). • Implementation of a complaints management system to ensure that the community is able to provide feedback on the effectiveness of mitigation measures (SE03). • Community Benefit Fund to provide opportunities to maximise longer-term social outcomes (SE04).	Continued concerns or fears relating to the project operation are possible. With the implementation of management measures, this results in a minor magnitude of impact.	Possible	Minor	Medium

17.9 Economic assessment

17.9.1 Construction

The increase in employment would be expected to have a positive effect on local and regional businesses, with increased expenditure on services such as accommodation, hospitality, retail and medical from local wage spending.

Spending by construction workers would indirectly support approximately 23 full time equivalent jobs in the services sector, including jobs in Moyne Shire and surrounding local government areas. These jobs would be associated with retail, accommodation, trade supplies, fuel suppliers, cafes and restaurants. In total, the project is estimated to indirectly generate 75 new full time equivalent jobs over the construction period.

Returns to the local community

All eligible participants of the Neighbour Benefit Sharing Program would receive a one-off payment of $1,000, payable at the substantial commencement of construction.

Returns to the region

The total construction cost for the project is estimated to be $800 million. Most costs are associated with the purchase of wind turbines and towers, although significant investment is also required for civil, electrical and grid connection works. Based on construction cost data from several built and operating wind farm projects located in regional areas, approximately 15% in total investment is retained in the region for projects of this type. This indicates that during construction approximately $120 million would be spent on wages, contracts and other services, flowing into the region's economy. This estimate is derived from examining available construction cost data from a number of built and operating wind farm projects located in regional areas (e.g., Ararat Wind Farm, Murra Warra Wind Farm and Sapphire Wind Farm).

It is estimated that the region comprises 1,550 construction companies (which include individual contractors) and many other businesses that could provide services for the project. These include transport operators, trade suppliers, vehicle and machinery hire companies and repair companies, among others. Some would include companies of sufficient scale to compete for project contracts and provide specialist services.

17.9.2 Operation

Ongoing economic stimulus in the study area associated with the operation of the project through the financial returns to stakeholder landowners, local wage spending, community fund payments, neighbour benefit payments and Council financial returns is estimated at approximately $158.4 million over 25 years (adjusted for the Consumer Price Index at 2.5%).

These economic benefits are outlined below in terms of returns to stakeholder landowners, Moyne Shire Council and the community.

Returns to stakeholder landowners

Turbines and infrastructure would be spread across 16 stakeholder landowners, providing income returns to these farming families. These new income streams can be particularly important in supporting the financial sustainability of some farms, especially as primary agricultural activities are not impacted to any great extent. Securing a guaranteed 25-year drought proofed income stream (indexed to the Consumer Price Index) also allows farming families more flexibility in the long-term planning for their farming operations, including succession planning.

Potential exists for landowners to continue to host wind turbines after the initial 25-year period, assuming the wind farm is not decommissioned, and relevant approvals are obtained for wind turbine refurbishment or replacement, as required. This would provide income for future generations or new landowners.

Returns to Council

Established under section 96(6A) of the *Electricity Industry Act 2000*, and amended in October 2018, the Payment in Lieu of Rates framework allows councils and electricity generators to negotiate annual payments. Using this framework, it is estimated Moyne Shire Council would receive annual revenue from wind farm operations at the site of approximately $600,000 in the first year, excluding the existing rates revenue collected from the site. Under the Payment in Lieu of Rates guidelines, this value would then increase in line with the Consumer Price Index over the operational lifetime of the wind farm (i.e., 25+ years). This would be an important source of additional income for Council.

Annual revenue generated for Moyne Shire Council from the project has significant potential to contribute to facilities, services and programs for the area, which may positively impact health and wellbeing of the overall community. This revenue would also enable Council to deliver on community interests and aspirations, improve the amenity of the area through investment in community infrastructure and programs, and strengthen the decision-making power and capabilities of Moyne Shire Council to deliver on projects and programs for the community.

Returns to the community

The Neighbour Benefit Sharing Program would commence at the commissioning of the wind farm and continue annually for as long as the relevant turbines are operational (refer to Chapter 2 – *Project rationale and benefits* for program details).

17.10 Conclusions

Given the scale of the project, there are social and economic impacts (both positive and negative) that are predicted to occur. During construction, there are predicted to be negative impacts to social factors associated with the generation of dust, noise and vibration, and changes to the visual character of the landscape, increased traffic on local roads and the presence of a construction workforce. During operation, there are predicted to be impacts to social factors relating to the physical presence of the wind farm.

During construction, it is estimated that $120 million of investment would be retained in the region. Ongoing economic stimulus associated with the operation of the project through the financial returns to host landowners (stakeholders), local wage spending, community fund payments, neighbour benefit payments and Council financial returns is estimated at approximately $158.4 million over 25 years.

Through the design process, the project has sought to avoid and minimise potential impacts to people and the local community by applying buffers of at least 1.5 kilometres between non-stakeholder dwellings and wind turbines, and a 3 kilometre buffer to all township zones. A Neighbour Benefit Sharing Program has been developed that provides ‘goodwill’ payments to neighbours (amongst other benefits). The program would start upon commissioning of the wind farm and continue annually for as long as the relevant turbines are operational.

With the implementation of design and management measures, the social impact significance was assessed to range from low to medium, with the exception of impacts associated with ‘environment and amenity’, which was assessed to be high during construction for the community immediately surrounding the site.