

Report

Social and Economic Baseline Report Tarrone Power Station

AUGUST 2009

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Date: **August 2009**
Reference: 43283491/ECN/02
Status: FINAL

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Table of Contents

Executive Summary	iv
1 Introduction	1
1.1 Report Overview	1
1.2 Project Description	1
1.3 The Study Area.....	1
2 Methodology	3
2.1 Overview of Methodology	3
2.2 Baseline Investigation	3
2.3 Impact Identification	4
2.4 Impact Assessment	4
2.5 Social and Economic Impact Mitigation Strategy	6
2.6 Data Sources and Limitations	6
2.6.1 Economic Census Data	6
2.6.2 Non-census Data.....	7
2.7 Relevant Policies	7
2.8 The study area.....	8
3 Demographics	9
3.1 Population Characteristics	9
3.1.1 Moyne Shire.....	9
3.1.2 Regional Population	9
3.1.3 Age Structure	10
3.1.4 Indigenous Population	11
3.1.5 Population Projections.....	11
3.2 Local Area Characteristics.....	13
3.2.1 Population.....	13
3.2.2 Household Structure	14
3.2.3 Family Composition.....	14
3.2.4 Household Income Levels.....	14
3.2.5 Residential Stability.....	15
3.2.6 Relative Socio-economic Disadvantage.....	15

Table of Contents

4	Housing, Education and Health	17
4.1	Housing	17
4.1.1	Housing Availability	17
4.1.2	Housing Growth	17
4.2	Education	18
4.3	Health	19
5	Community Infrastructure and Networks	21
5.1	Community Facilities and Services	21
5.1.1	Medical and Health	21
5.1.2	Emergency Services	21
5.1.3	Sporting and Community Facilities	21
5.1.4	Public Transport	21
5.2	Community Cohesion	21
6	The Local Economy	24
6.1	Overview	24
6.2	The Labour Market	24
6.3	Employed Residents by Industry	25
6.3.1	Occupation Structure of Local Residents	26
6.3.2	Jobs by Industry	27
6.3.3	Estimated Value of Regional Output	29
6.3.4	Significant Local Businesses	30
6.4	Current Project Developments	30
7	Conclusions	31
7.1	Regional Social and Economic Characteristics	31
7.2	Data Gaps to be Addressed	31
7.3	Potential Areas of Impact	31
8	References	32
9	Limitations	33

Table of Contents

Tables

Table 3-1	Population and Projected Populations of Moyne, Warrnambool, Moyne and Warrnambool and Victoria	9
Table 3-2	Age Structure of Moyne, Warrnambool, Moyne and Warrnambool and Victoria, 2006 .	10
Table 3-3	Median ages Orford, Tarrone, Moyne Shire and Victoria	11
Table 3-4	Indigenous Population Orford, Tarrone, Moyne Shire and Victoria	11
Table 3-5	Moyne Shire Population Projections	13
Table 3-6	Population and Growth Rates Tarrone and Orford Collection Districts, Moyne Shire (Place of enumeration).....	13
Table 3-7	Average Household Size	14
Table 3-8	Family Composition	14
Table 3-9	Mean Household and Individual Income Levels	14
Table 3-10	Index of Disadvantage, Great South Coast Local Government Areas	16
Table 3-11	Index of Disadvantage, Moyne Shire small areas	16
Table 4-1	Residential Building Approvals, Moyne Shire	17
Table 4-2	Highest Level of Education	18
Table 4-3	Life Expectancy.....	19
Table 4-4	Disability Adjusted Life Years Rates (Selected), 2001	20
Table 5-1	Community Strengthening Indicators, 2006.....	22
Table 6-1	Labour Force Status, Moyne Shire, the Region and Victoria, 2006	24
Table 6-2	Department of Employment and Workplace Relations, Labour Force Data, September 2007 and 2008	25
Table 6-3	Employment Persons by Industry, Moyne Shire, Moyne Warrnambool Region and Victoria, 2006	25
Table 6-4	Occupation Groups Employed residents, Moyne, the Region and Victoria, 2006.....	27
Table 6-5	Jobs in Moyne the Study Region and Victoria by Industry Sector, 2006.....	28
Table 6-6	Estimated Total Output and Gross Value Added Moyne and Warrnambool Municipalities and Victoria, 2006	30

Figures

Figure 1-1	Site Location	2
Figure 2-1	ABS Statistical Divisions	8
Figure 3-1	Moyne Shire Districts	12
Figure 3-2	Change of Residence	15
Figure 4-1	Post-School Qualifications	18
Figure 4-2	Barwon-South Western Region Primary Care Partnerships.....	19
Figure 6-1	Employed Persons by Place of Work, Moyne Shire, the Region and Victoria, 2006	28

Executive Summary

Overview

AGL Energy is investigating the feasibility of developing a gas-fired power station in the rural locality of Tarrone in south west Victoria. This report provides a baseline social and economic characterisation of the proposed Tarrone Power Station's area of potential impact. Key elements include: a description of the geographic and development context; demographic characteristics; local economy; community infrastructure and networks and finally relevant policy and legislation.

- The study is the first of four phases in the Social and Economic Impact Assessment methodology. The next three phases are: impact identification; impact assessment; and finally the development of an impact mitigation strategy. The report has been predominantly developed based on available desktop reports.

Baseline Data

Demographics

The proposed Tarrone power station site is in a rural area of Moyne Shire with low population density. It is 6 km north-east of the small town of Orford in the Moyne Shire, south-west Victoria. The predominant service centres in the Moyne Shire are Port Fairy (pop. 2,560, approx 40 km from site), Koroit (pop. 1,376, approx 40 km from site), Mortlake (pop. 941, approx 70km from site), Macarthur (pop. 246, approx 30 km from site), which together account for a significant proportion of the Shire's population. Warrnambool is the closest regional centre, around 50 kilometres by road from Tarrone.

Moyne Shire has experience a gradual decline in population since 1981 due to agricultural adjustment, outmigration of young people and loss of some employment opportunities. However the shires population is projected to increase over the next 13 years at around 0.6 percent per annum. Overall the local population is ageing and is likely to continue to do so in coming years. The median age group in the Moyne Shire is 40, above the State average of 36. Similarly, the proportion of people age over 15 in Moyne Shire and Tarrone is substantially lower than the State average.

The Tarrone-Orford area has a greater proportion of couples without children than the State average, in contrast to the Moyne Shire overall. This is likely to increase as the local population ages. Mean individual incomes in the Tarrone area are higher than the Moyne average but in line with the State average. However household income is lower in Tarrone and Moyne Shire than the Victoria average due to a higher proportion of people being outside the workforce.

Health and Education

The average disability adjusted life years for Moyne Shire is marginally lower than the State average, indicating a comparatively positive overall disease burden in this area. However, it is higher than the State average for injuries, road and traffic accidents, intentional injuries and suicide.

The proportion of people with postgraduate qualifications is generally lower than the State average, with the exception of certificate level qualifications.

Executive Summary

Community Infrastructure and Networks

There are very limited community facilities and services in close proximity to the project site. Port Fairy and Koroit have key medical, emergency and sporting facilities and services, while Macarthur has a more limited offering of these facilities and services. Warrnambool, the nearest regional centre has the closest hospital.

Victorian Department of Planning and Community Development indicators suggest that the Moyne Shire has strong community networks, including strong levels of participation in local community organisations.

The Local Economy

The Moyne Shire is predominantly an agricultural economy. It has been experiencing low levels of unemployment in recent years with high employment participation. The Shire has seen strong interest in energy sector projects in recent years with the Mortlake Gas Power Station now under construction, the proposed MacArthur Wind farm and other energy projects using the SEAGas pipeline being proposed. Major employers in the Shire include dairy processors Warrnambool Butter and Murray Goulburn and the Glaxo Smith Kline's healthcare processing plant. The city of Warrnambool is surrounded by Moyne Shire and is the main service centre for South West Victoria. Warrnambool is primarily a service centre with high levels of employment in Retail, Health and community services and Education. Warrnambool also has a strong but seasonal tourism industry.

Future Work

Data Gaps to be Addressed

This report has principally drawn on available desktop studies. These studies do not provide an insight into current local community views, attitudes and values, and community transport patterns and general use of the study area. Data in these areas will be collected through a process of consultation with local residents, local government, local businesses, and local community organisations. This consultation process will also gather information to inform the assessment of project impacts in the local area and to develop mitigation measures to address these impacts.

Impact Identification

The next phase of the Social and Economic Impact Assessment methodology will be impact assessment. However the baseline study has already identified the following potential impact areas for further investigation:

- Local shortages of appropriate labour
- Shortages of housing and residential land in Warrnambool

Shortages of commercial land in Warrnambool

Introduction

1.1 Report Overview

This report provides a baseline social and economic characterisation of the proposed Tarrone Power Station's area of potential impact. Key elements include a description of the geographic and development context; demographic characteristics; local economy; community infrastructure, and networks.

The baseline study is primarily based on existing data and published studies. These existing data are drawn from demographic profiles; population and household projections; housing studies; social and economic indices for relevant areas; indices of disadvantage; community directories and reports. They provide a basis on which to identify potential risks and impacts on the well-being of local communities and on the achievement of the project's objectives, designs, schedules and operation.

The report also provides some initial indications of potential social and economic impacts of the project. A more details assessment of these impacts, and mitigation measures, will be completed as the next phase of work.

1.2 Project Description

AGL Energy is investigating the feasibility of developing a gas-fired power station in the rural locality of Tarrone in south west Victoria. The proposed development consists of:

- Two or three 150 MW open-cycle gas turbines (OCGT) combined capacity of 375-480MW with dry low NO_x combustors to be cooled by an evaporative cooling system.
- Associated infrastructure including an underground gas pipeline providing a connection to the existing SEAGas underground gas pipeline (which runs from Port Campbell to Adelaide) at Willatook, approximately 10 km to the north-east.

AGL has formed a Joint Venture with Meridian Energy to develop the approved 330 megawatt (MW) Macarthur Wind Farm nearby to the proposed power station site. Power from the wind farm will be connected to the 500KV electricity grid at a new 500MVA substation at the site proposed for the power station. The proposed power station would supply electricity to the grid via the adjacent electrical connection from the wind farm.

1.3 The Study Area

The proposed Tarrone power station site is 6 km north-east of the small town of Orford in the Moyne Shire, south-west Victoria. Specifically the proposal is to locate the power station on a 10ha site to the north-east of the intersection of Riordans Road and Landers Lane, Tarrone (Figure 1-1). The site is about 40 km north of Port Fairy, 50 km north-west of Warrnambool, and 250 km west of Melbourne. The pipeline corridor area extends 10 km north-east to the SeaGas pipeline to the east of Willatook – Warrong Road, Willatook.

1 Introduction

Figure 1-1 Site Location



Methodology

2.1 Overview of Methodology

The characterization of the social and economic environment on a local and regional scale provides the basis for Social and Economic Impact Assessment (SEIA) of the proposed Tarrone power station. It enables the identification, and assists in measurement, of potential social and economic benefits and impacts of the power station construction and operations.

The SEIA methodology includes the following:

- **Baseline investigation (the present study):** This establishes in detail the characteristics of the project's host communities and known trends and projections. It includes analysis of the project impact area's socio-demographic composition; business development and employment markets; social infrastructure; housing; community services and facilities; local lifestyle and levels of social cohesion.
- **Impact identification (next phase):** Based on the baseline characterisation, it will be possible to identify and categorise the likely changes in the physical and social environment that may take place as a result of the proposed development.
- **Impact assessment:** Assess the likely nature, magnitude and significance of potential social and economic impacts associated with the development.
- **Impact mitigation strategy:** Identification of impact mitigation and management actions to address potentially negative impacts of the proposed development; and identify opportunities to optimize the project's positive social and economic benefits.

2.2 Baseline Investigation

This report establishes a social and economic profile of the project impact area, including description of the area's geographic and development context, demographic characteristics, community networks, values and attitudes. It also identifies local and State legislation, policies and strategies, relevant to the Project's interaction with local stakeholders and communities.

The baseline investigation is primarily based on existing data and published studies and discussions with the relevant local authorities. The initial baseline investigations draw on available data, including demographic profiles; population and household projections; housing studies; social and economic indices for areas; indices of disadvantage; community directories and reports. The baseline investigations provide the basis on which to identify potential social and economic risks and the impacts of these on the achievement of project objectives, designs, schedules and operation. A review of known local projects was undertaken to provide an understanding of the likely development pressures and potential competition for labour between projects.

The following sections provide an initial review of existing information, designed to:

- Establish an understanding of current state of knowledge on demographics, social conditions, networks, and agricultural and other economic activity in the project area.
- Identify all legislative, regulatory and policy requirements relevant to the project and its area of impact.
- Identify gaps in available data.
- Finalise scope of work to be completed by the ESIA.

2 Methodology

Based on this initial review, the SEIA team will be able to address the impact of the project design, construction and operations, on existing social and economic conditions in the area, including:

- Analysis of demographic characteristics in the local area and the broader region.
- Assessment of social conditions or character in the area, based on local council studies and community views expressed through the project's consultation process.
- Identification of community usage patterns of the project area, including recreational or tourist attractions, cultural heritage sites, landmarks etc. based on discussions with council officers, community and environment groups, and consultants engaged in related specialist studies.
- Identification of tenure and land use patterns in area surrounding the site, highlighting potential constraints on land use and issues of severance of ongoing community activities.
- Identification of community activities, lifestyles and values specifically relevant to the development.

2.3 Impact Identification

Following establishment of local social and economic baseline conditions, the next stage in the SEIA will identify the range of probable social and economic impacts arising from the project, given the current design options; the local and regional environments; and the demographic structure and character of local communities.

The SEIA team will conduct in-depth interviews with local authorities, local businesses, community groups and residents to gain a deeper understanding of local issues, values and concerns, and investigate likely impacts in areas such as:

- Demographic change, particularly during the construction phase, and potential impacts and distributional pressures of development options on populations, households, housing, workforce composition, and demand for schools, tertiary institutions, health, commercial and other services;
- In-migration and effects on housing, social relations and demand for services;
- Labour force participation; employment status; income distribution; business and commercial activity; education and training;
- Community character, structure and development;
- Social cohesion and community integrity, and potential effects on neighbourhood structure;
- Access to recreational facilities, commercial, cultural and social services in the impact area;
- General community well-being, amenity and health in the impact area; and
- The presence of marginalized or particularly vulnerable groups in the project impact area.

Many important social and economic impacts may occur well after the development is established, and possibly in areas distant from the project. Through the SEIA, the SEIA team will identify direct social and economic impacts; cumulative project impacts; and the likely indirect impacts of the project in combination with other developments in the region.

2.4 Impact Assessment

The SEIA will assess the magnitude and significance of social and economic effects of the proposed development's construction and operations options within the area. Impact assessment will include:

- Identification of social and economic changes – direct and indirect, positive and negative - likely to be caused by the development;

2 Methodology

- The following elements will be sought to be considered in the assessment, including quantification where possible:
 - Number and characteristics of people affected: the number of property owners, people potentially affected or subjected directly to changed conditions and living environment;
 - Changes in access to employment, economic output, commercial, recreational, cultural and social services and facilities;
 - Likely increases in output during both the construction and operation phases of the power station;
 - Potential changes in the value of agricultural production in the vicinity of the power station and along the pipeline corridor;
 - Any infrastructure maintenance costs associated with the power station during the construction and operation phases;
 - Direct loss of land and other community values through the selected development option;
 - Social patterns and linkages: likely change in how the area functions as a community; in levels of social interaction; personal relationships within the impact area; and local communities' feeling of belonging or identifying with the area; and
 - General amenity (perceived and actual) and change in the physical conditions that affect quality of the environment and residential amenity; change in aesthetic values; change in recreation development and opportunities.
- The SEIA will assess the significance of potential impacts in terms of: the following criteria:
 - Probability: The likelihood that the impact will occur.
 - Magnitude: How large or extensive the impact could be.
 - Timing: The likely timing of the impact – whether it will occur immediately, during construction or only after some delay.
 - Duration: The likely duration of the impact and whether it will be temporary or permanent in nature.
 - Primacy: Whether the impact will be a relatively direct or a more indirect consequence of the development.
 - Distribution: The groups of people most likely to be affected (and, in particular, whether impacts are likely to be disproportionately experienced by vulnerable groups).
 - Geographical Scope: Whether the impact is likely to extend beyond the project's target communities to affect other communities or regions.
- Establishment of a development matrix of social and economic costs and benefits, providing quantitative and qualitative summary of costs and benefits; assessment of relative importance of the costs and benefits; and analysis of the distribution of costs and benefits among local community and stakeholder groups.

Economic impact assessment will be undertaken at three levels of impact:

- Local – The Shire of Moyne only
- Regional – both the Shire of Moyne and the City of Warrnambool
- State –Victoria.

2 Methodology

2.5 Social and Economic Impact Mitigation Strategy

The next stage of the SEIA will identify appropriate means to mitigate or manage adverse social and economic impacts, and to optimize the positive social and economic benefits of the development. Social and economic impact mitigation measures are most likely to succeed if they are perceived as benefits by local people, respond to identified concerns over project design and operations, and reflect local needs, values and priorities. The impact mitigation strategy will reflect both the ESIA's technical analyses and the outcomes of consultation with local community and stakeholder groups.

The SEIA report will establish an impact mitigation action plan, identifying opportunities for impact prevention, reduction and management. The impact mitigation plan will document:

- All mitigation measures and commitments identified during the SEIA process.
- The means by which mitigation measures are to be implemented.
- Timescales for implementation of impact mitigation measures.
- Resources and responsibilities for implementation of impact mitigation.
- An impact monitoring and evaluation strategy to enable project managers to ensure the continuing effectiveness of impact management in the light of experienced social and economic change throughout the project construction and operation.

2.6 Data Sources and Limitations

Baseline study data were collected from government agencies and other sources referenced in the text. The basic population data used are sourced from the Australian Bureau of Statistics (ABS) (2007) Time Series Profiles and Working Population Profiles where applicable. The Tarrone and Orford areas lie within 2 Statistical Local Areas Moyne – South and Moyne North East). Data are reported at the Tarrone Census Collection District level and the Moyne (S) – South and North East Statistical Local Areas and for the Shire of Moyne, the City of Warrnambool and Victoria. These ABS data contain the results of the 2006 Population Census. As the Census is conducted every five years, the 2006 Census represents the most up-to-date collection of population statistics for the project area.

Census data are based on place of usual residence unless otherwise indicated. Previous censuses used place of enumeration as the base for counting and this data has been used where no other data is available.

2.6.1 Economic Census Data

As the Statistical Local Area is the most detailed level at which useful economic data are available and the local impacts are likely to be felt more broadly across the Shire, the base economic unit for analysis will be the Shire of Moyne. This also corresponds to the administrative area responsible for the delivery of local services and infrastructure to either support the project or which the project construction process will be using. Therefore it is appropriate to consider the costs and benefits of the project in the context of the Shire. A broader regional focus is also appropriate as the City of Warrnambool is surrounded by the Moyne Shire (Figure 1-1) and provides a major source of community and business services as well as employment for many Moyne Shire residents. Hence the regional impact will be considered in terms of the impact on the combined municipalities of Moyne Shire and the City of Warrnambool (the Region).

2 Methodology

The impacts of the project will also be considered in the context of the State of Victoria. The State is the responsible planning authority for infrastructure projects of this type and will fund some of the supporting infrastructure and is responsible for the regulation of the Electricity and Gas sectors through Essential Services Commission.

2.6.2 Non-census Data

For other, non-Census-based, study areas, data have been drawn from a number of official and reputable sources. The most relevant and up-to-date data are used wherever possible. However, most statistics have a time lag of several years between collection and publication. It should be noted these data are published at a range of geographic scales – which may not correspond with the scales used in the presentation of Census data – and over different timeframes.

2.7 Relevant Policies

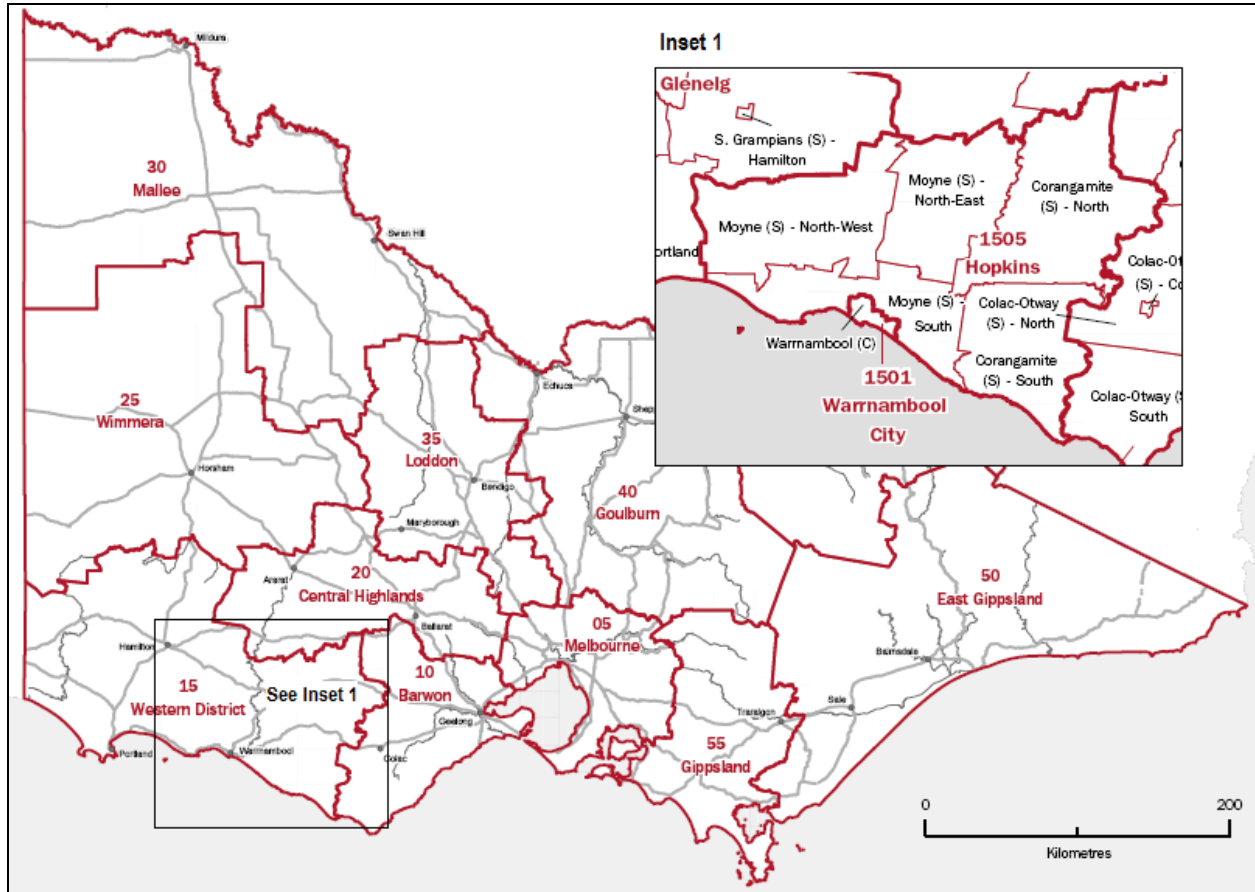
The following policies are considered relevant in the assessment of social and economic impacts of the Project:

- Victorian Planning and Environment Act (1987);
- State Planning Policy – provides an overview of the social development objectives of the Victorian State Government;
- The Victorian Government's Provincial Victoria Statement: Moving Forward Making Provincial Victoria the Best Place to Live, Work and Invest; and
- A Fairer Victoria - Strong People, Strong Communities, May 2008, Victorian Government.
- The Moyne Shire Municipal Strategic Statement;
- The Moyne Shire Community Engagement Framework;
- Growing Victoria Together expresses the Government's broad vision for the future. It is based on addressing a range of issues, including: safe streets; Growing and linking all of Victoria, more jobs and thriving, innovative industries across Victoria and Government that listens and leads.

2 Methodology

2.8 The study area

Figure 2-1 ABS Statistical Divisions



The study area has been defined geographically to correspond with ABS statistical divisions (Figure 2-1). The geographical levels of analysis for this study are:

- Local: The immediate area of impact includes the communities of Tarrone (Collection District [CD] 2091703) and of Orford and Willatook (CD 2091605);
- District: The broader level of impact is the Moyne Shire, which comprises the Moyne (S) South, North East and North West Statistical Local Areas; The Tarrone CD is in the Moyne North West SLA while the Orford CD is in the Moyne South SLA
- Region: as noted above, to assess economic impacts the appropriate area is an amalgamation of the municipalities of the Shire of Moyne and the City of Warrnambool;
- State level data have been used for comparative purposes.

Demographics

3.1 Population Characteristics

3.1.1 Moyne Shire

Moyne Shire was formed in 1994 from the merger of the Shire of Belfast, Shire of Minhamite, Borough of Port Fairy, and parts of the Shire of Mortlake. In 2006 it had a population of 15,452, and a population density of around 3 people/km². Moyne Shire is made up of large tracts of rural areas and a number of towns and settlements. The predominant service centres in the Moyne Shire are Port Fairy (pop. 2,560), Koroit (pop. 1,376), Mortlake (pop. 941), which together account for a significant proportion of the Shire's population.

Significant localities in the Shire include Macarthur (pop. 246), Peterborough (pop. 148) and smaller centres such as Caramut, Ellerslie, Framlingham, Garvoc, Hawkesdale, Kirkstall, Panmure, and Woolsthorpe. The Shire has an area of 5,478 km².

3.1.2 Regional Population

While Moyne Shire's population was 15,453 persons in 2006, Warrnambool's was almost twice as large at 30,391 (ABS Census). There are quite different growth projections for the two Shires, with the Department of Sustainability and Environment projections (VIF, 2004) suggesting a slight decline in the Shire of Moyne but a very strong growth rate for Warrnambool in the period from 2006 to 2016. Both municipalities contracted *id. Consulting* to provide population forecasts for this period and they indicate more even and modest growth rates for both areas. These forecasts and growth rates are illustrated on Table 3-1.

Table 3-1 Population and Projected Populations of Moyne, Warrnambool, Moyne and Warrnambool and Victoria

	Moyne Shire	Warrnambool City	Moyne and Warrnambool	Victoria
Population 2006 ABS Census	15,452	30,391	45,843	4,932,422
Annual Average Growth 2001 to 2006 ABS Census	0.25%	1.0%	0.9%	1.1%
Projected growth rate 2006 to 2016 ID consulting	0.5%	0.7%	0.7%	n.a.
Projected growth rate 2006 to 2016 DSE (2004)	-0.2%	1.21%	0.8%	0.9%

Moyne Shire's overall population has experienced gradual decline, with some fluctuations, since 1981. This decline is reflected in censuses throughout the period which record a reduction from 16,806 (in 1981) to 15,542 (in 2006) in the area which now comprises the Shire.

The period since 1996 has witnessed a slight increase in the Shire's population. The latest available annual population change data, however, show an increase in 2006/07 in Moyne Shire of 0.6% compared with 1.5% for the State as a whole. The Shire population was 16,141 in June 2007.

The principal drivers for population loss during these periods have been:

- Loss of young people (18-24 years) to major centres, such as Warrnambool, Geelong, Ballarat and Melbourne;

3 Demographics

- Consolidation of farming enterprises producing out-migration; and
- Loss of employment in other key industries such as government administration and utilities.

At the same time, however, there have been countervailing drivers for population gain during this period, including:

- Employment growth in manufacturing, Government Administration and Defence and the Transport and Storage sectors
- Employment growth in services, especially tourism based industries, retail trade, health and education;
- Consolidation of agricultural industries and growth in value-adding; and
- Attraction of families to the area, based on amenity and lifestyle opportunities.

There has been some population growth in areas adjacent to Warrnambool, most notably in Koroit, as well as Port Fairy. Other areas of the Shire have tended to decline in population. Population gains tend to be related to external migration factors, such as from metropolitan Melbourne and overseas, particularly to coastal areas of the Shire. It may be assumed that a number of these patterns will continue into the future, most notably flows into the Shire from Melbourne and overseas and losses of young people to larger centres, albeit in lower numbers. In addition, the Shire is likely to benefit from continued overspill of families from Warrnambool and reduced numbers of young persons migrating into the City (based on lower numbers overall). Port Fairy and the areas around Koroit are expected to experience further growth.

3.1.3 Age Structure

The combined Moyne and Warrnambool municipalities have a relatively skewed age structure with a higher proportion of residents aged below 25 years and over 64 years, but a correspondingly lower share of person in the main working age groups of 25 to 64 years. The high share of person aged 15 to 24 years (13.6%) reflects the attraction of students to Warrnambool City by Deakin University and the South West College of TAFE. Table 3-2 details the comparative age structures.

Table 3-2 Age Structure of Moyne, Warrnambool, Moyne and Warrnambool and Victoria, 2006

	Moyne Shire	Warrnambool City	Moyne and Warrnambool	Victoria
0-14 years	22.0%	21.0%	21.4%	19.3%
15-24 years	11.3%	14.7%	13.6%	13.7%
25-44 years	23.6%	25.4%	24.7%	28.7%
45-64 years	28.3%	23.8%	25.3%	24.6%
65-and over	14.8%	15.2%	15.0%	13.7%
Total	100.0%	100.0%	100.0%	100.0%

The following factors in the demographic composition of Moyne Shire are particularly significant:

- Over the next ten years, there will be an increase in the numbers entering the workforce and in child-bearing age, but this is likely to decline over time.
- The proportion of the population aged 65 and over will increase significantly in the future. Moyne Shire projections suggest that the proportion of the Shire's population aged 65 and over will increase from 14.3% in 2006 to 18.7% by 2011 and 21.2% by 2021.

3 Demographics

Population projections suggest increase in the period to 2016 in the population aged 55-74 years as a result of ageing and, to a lesser degree, in-migration. The most significant increase is expected to be in Koroit and District and Port Fairy and District. Increases are expected in all areas in the population aged 75 and over, particularly in Port Fairy, Koroit, Mortlake and their surrounding districts.

Table 3-3 Median ages Orford, Tarrone, Moyne Shire and Victoria

Area	1996	2001	2006
Tarrone		34	37
Orford		40	37
Moyne Shire	36	38	40
Victoria	33	35	36

Source: ABS, 2006

The Moyne Shire median age, at 40 years, is higher than the State average of 36 years. The median age in the Tarrone and Orford areas is, however, closer to the Victorian average.

3.1.4 Indigenous Population

The number of Indigenous people enumerated in Moyne Shire increased by 40% between the Censuses of 2001 and 2006, but from a very low base. Only 1% of the Shire's population is Indigenous; there are only three Indigenous people resident in the Tarrone and Orford areas.

Table 3-4 Indigenous Population Orford, Tarrone, Moyne Shire and Victoria

Area	1996		2001		2006	
	No.	%	No.	%	No.	%
Tarrone			0	0.0%	0	0.0%
Orford			0	0.0%	3	0.0%
Moyne Shire	58	0.4%	94	0.6%	153	1.0%
Victoria	21,474	0.5%	25,078	0.5%	30,153	0.6%

Source: ABS, 2006

3.1.5 Population Projections

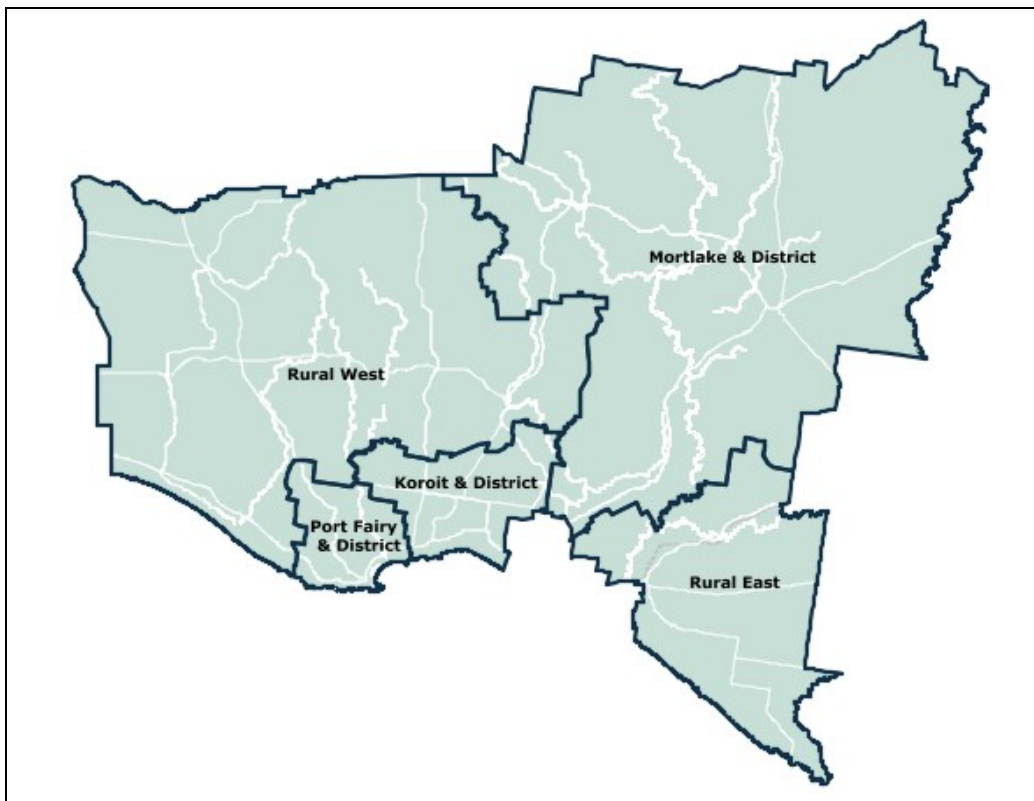
The population and household forecasts produced for Moyne Shire by *id consulting pty ltd* in 2007 project a population increase from 15,763 in 2006 to 17,093 by 2016, at an average annual growth rate of 0.54%. This is based on an increase of over 1,040 households during the period, with the average number of persons per household falling from 2.64 to 2.42. Most areas in Moyne Shire are expected to increase in population to 2016, with the largest gains expected in Koroit and District (with an average annual rate of increase of 1.32%) followed by Port Fairy and District (with a projected average annual increase of 1.22%). These districts are illustrated on Figure 3-2.

The population increases are based on household growth, which in turn relates to new residential opportunities as well as increases in occupancy of dwellings. Areas expected to experience a decrease in population over the period include Mortlake and District (although this is likely to return to 2006 levels by 2021) and Rural West. Population growth rates are lower than household growth as a result of the decreasing number of people per household, a pattern likely to affect all areas of Moyne Shire during this period.

3 Demographics

Employment factors will have a major influence on population in the next fifteen to twenty years. The development of the Otway Basin for gas production has contributed to new employment opportunities in the Shire close to Port Campbell (in Corangamite Shire). The proposed gas-fired power station at Mortlake utilising the resources from this basin by about 2010 will provide employment in construction, as well as 30 ongoing jobs. Other projects such as wind farms at Macarthur and Glenthompson (Southern Grampians Shire) will provide further financial impetus through the construction phase. This highlights both the strong potential for further population growth in the area but also for pressure on available labour resources in coming years.

Figure 3-1 Moyne Shire Districts



Source: *id.com*, 2008

It is likely that there will also be a positive economic and employment spin-off for the Shire as the large number of hardwood plantation forests in the area and to the north and west reach harvesting stage. There is likely to be a substantial increase in employment from 2010 onwards with an estimated 1000 direct jobs in the 'Green Triangle' (South East South Australia and South-West Victoria). It is likely, however, that most of the jobs growth in Victoria in this industry will be concentrated in Southern Grampians and Glenelg Shires.

The population change expected over the next fifteen to twenty years will also be influenced by demand for housing in those areas. Some areas, notably Koroit and Port Fairy are advantaged by their combination of services, amenity and proximity to Warrnambool. Mortlake will be advantaged by economic developments, such as the proposed Gas Power Station, but some of these employment opportunities will be taken up by people living in other areas. The Rural East area is likely to be advantaged by its proximity to developments in the Otway Basin, as well as proximity to Warrnambool, although the relative lack of services in these areas may slow population growth.

3 Demographics

The Department of Planning and Community Development (DPCD) also produces population projections for all municipalities in Victoria. These projections were made after the *id consulting* projections and had the benefit of results from the 2006 Census in establishing the current conditions. The DPCD project a slightly lower growth rate than *id consulting*. One point of difference is that the *id consulting* projections may have overestimated population growth by underestimating the share of new housing that is being used for holiday accommodation not permanent residents. Table 3-5 provides a summary of the various population projections.

Table 3-5 Moyne Shire Population Projections

	Forecast Year			Change 2006-2021	
	2006	2011	2021	No.	Annual % Change
Moyne Shire DPCD	16,002	16,508	17,390	1,388	0.56
Id consulting Pty Ltd					
Moyne Shire	15,940	16,512	17,452	1,512	0.61
Koroit and District	3,734	4,102	4,544	810	1.32
Mortlake and District	3,693	3,735	3,734	41	0.07
Port Fairy and District	3,291	3,481	3,945	654	1.22
Rural East	2,614	2,629	2,748	134	0.33
Rural West	2,608	2,565	2,481	-127	-0.33

Source: *id*, 2007

3.2 Local Area Characteristics

3.2.1 Population

The Power Station will be located in the Collection Districts (CD) around Tarrone and Orford. In 2006, the usual resident population of these areas was Orford 324 and Tarrone 514. However, this data was not available at the CD level for 2001. Table 3-6 has used place of evaluation data to provide estimates of growth in these areas. Both of these appear to have experienced strong local growth, despite the lack of urban centres in the collection districts. This growth was considerably stronger than the Shire average.

Table 3-6 Population and Growth Rates Tarrone and Orford Collection Districts, Moyne Shire (Place of enumeration)

Area	2001	2006	Change 2001-2006
Tarrone	470	504	7.2%
Orford	301	314	4.3%

3 Demographics

3.2.2 Household Structure

The average household size is, in common with the State more generally, falling in Moyne Shire (Table 3-7). The current Shire average of 2.6 people per household is consistent with the Victorian average. The Moyne Shire household and population projections suggest that the average household size will fall to 2.39 people by 2021.

The average household size in the Tarrone area has been – and remains – higher than the Shire and State averages, reflecting a high proportion of couples without children.

Table 3-7 Average Household Size

Area	1996	2001	2006
Tarrone		3.2	2.9
Orford		2.7	2.6
Moyne Shire	2.7	2.6	2.6
Victoria	2.8	2.7	2.6

Source: ABS, 2006

3.2.3 Family Composition

Although Moyne Shire has a similar proportion of couple families as Victoria as a whole, it has a higher proportion of couples without children (Table 3-8). This is particularly pronounced in Tarrone and Orford, in which, respectively, 38.7% and 33% of couples do not have children compared with 20.3% in the Shire and 23.5% in the State generally. The proportion of one parent families in Tarrone and Orford is significantly higher than the Shire average, and marginally higher than the State-wide average.

Table 3-8 Family Composition

Area	Tarrone	Orford	Moyne Shire	Victoria
Couple family with no children	38.7%	33.0%	20.3%	23.5%
Couple family with children	50.0%	55.7%	71.7%	66.1%
One parent families	11.3%	11.4%	8.0%	10.4%

Source: ABS, 2006

Population projections suggest that, between 2001 and 2016, Moyne Shire will experience a minor decrease in the number of couple families with children; an increase in the number of couples without children (in line with significant increase in the population aged 55-74 years); and an increase in the proportion of lone person households, as a result of ageing of the population.

3.2.4 Household Income Levels

Table 3-9 Mean Household and Individual Income Levels

	Tarrone	Orford	Moyne Shire	Victoria
Mean individual income (\$/weekly)	\$627	\$662	\$579	\$626
Mean family income (\$/weekly)	\$1,397	\$1,470	\$1,241	\$1,391
Mean household income (\$/weekly)	\$1,167	\$1,163	\$1,076	\$1,218

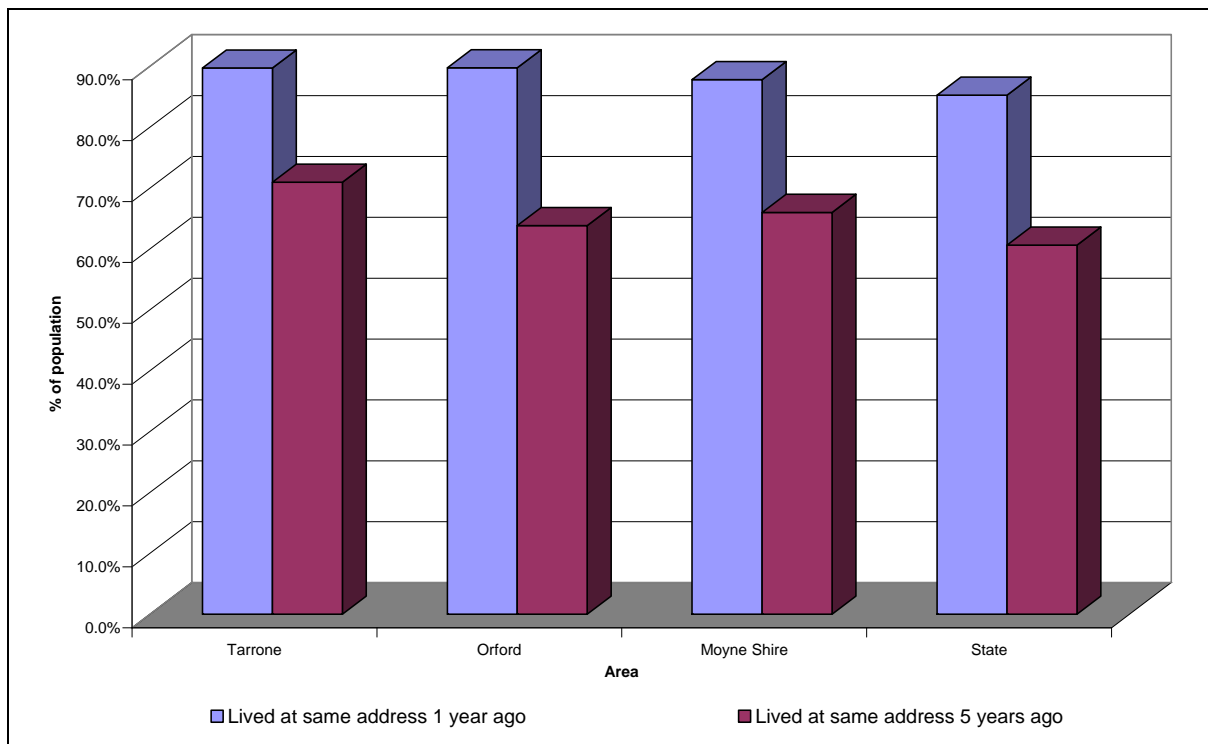
3 Demographics

Mean Individual and Family Income levels in Tarrone in Orford are higher than the average for Moyne Shire and for Victoria; however, the Mean Household Income is higher than the Moyne Shire average but lower than for Victoria. The differences in household and family income reflect the different family structures of Tarrone and Orford residents.

3.2.5 Residential Stability

The Tarrone and Orford areas demonstrate a slightly higher degree of residential stability, measured by time at the same address, than the Moyne Shire average and State as a whole. Overall, however, these differences are not statistically significant.

Figure 3-2 Change of Residence



3.2.6 Relative Socio-economic Disadvantage

The ABS Index of Relative Socio-economic Disadvantage is derived from Census variables related to disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles (ABS 2006). The concept is used, broadly, to compare relative socio-economic advantage and disadvantage in terms of people's access to material and social resources, and their ability to participate in society. However, it is important to note that the Index does not define an absolute standard of disadvantage: it only reflects whether an area is disadvantaged *relative* to other areas.

High scores on the Index of Relative Socio-Economic Disadvantage occur when the area has few families of low income and few people with little training and in unskilled occupations (ABS 2006). Low scores on the index occur when the area has many low income families and people with little training and in unskilled occupations. The higher an area's index value for the Index of Relative Socio-Economic Disadvantage, the less disadvantaged that area is compared with other areas.

3 Demographics

In relative terms, therefore, Moyne Shire is less disadvantaged than other Shires in the Great South Coast region. In fact, Moyne is ranked in the 7th decile among local government areas in Victoria – the 25th least disadvantaged of 79 local government areas in the State – and in the 8th decile in Australia as a whole.

Table 3-10 Index of Disadvantage, Great South Coast Local Government Areas

Local Government Area	2006 SEIFA Index of Disadvantage	Ranking by Victorian Deciles
(ranked from greatest to least disadvantaged)		
Glenelg (S)	962.0	2
Colac-Otway (S)	967.3	2
Corangamite (S)	989.5	3
Warrnambool (C)	993.5	5
Southern Grampians (S)	996.1	6
Moyne (S)	1012.6	7

Source: ABS Socio-Economic Indexes for Areas (SEIFA), 2006

Within Moyne Shire, some areas of the Shire's south-west exhibit relatively high levels of socio-economic disadvantage. The directly impacted project areas of around Tarrone and Orford, however, are in the 6th and 7th deciles that is less disadvantaged than the average for Victoria. The economic activity generated by the project may assist to enhance the favourable status of the local area.

Table 3-11 Index of Disadvantage, Moyne Shire small areas

Moyne Shire small areas	2006 SEIFA Index of Disadvantage	Ranking within Victorian Deciles
(ranked from greatest to least disadvantaged)		
Port Fairy and district	997.6	
Mortlake and district	1005.7	
Moyne Shire	1012.6	7
Koroit and district	1017.1	5
Rural west	1017.5	7
Rural east	1029.8	6

Source: ABS Socio-Economic Indexes for Areas (SEIFA), 2006

Housing, Education and Health

4.1 Housing

4.1.1 Housing Availability

The 2006 Census indicates there were 5,538 occupied dwellings in Moyne Shire. Unlike previous censuses no details were published on the number of unoccupied dwellings on census night. However in 2001 the number of unoccupied dwellings was 1,192 out of a total of 6,773 dwellings or 17.6%. There were 43 less occupied dwellings in 2006. This would indicate there would be approximately 1,200 unoccupied dwellings in the Shire as of August 2006. These unoccupied dwellings are most likely holiday homes for private or rental use. They represent a useful accommodation resource but may not be as readily available between each December and the following Easter.

4.1.2 Housing Growth

Data on residential building approvals are a leading indicator of both growth in new housing and of economic growth. Residential building approvals are compiled from permits issued by: local government authorities and other principal certifying authorities; contracts let or day labour work authorised by Commonwealth, state, semi-government and local government authorities (ABS 2008). For this ABS database a dwelling (or residential building) is defined as: "a residential building is a building consisting of one or more dwelling units. Residential buildings can be either houses or other residential buildings" (ABS 2008).

Table 4-1 indicates that growth in residential buildings has been strong since 2001-02 in line with positive economic conditions.

Table 4-1 Residential Building Approvals, Moyne Shire

Year (Ending June 30)	No. Total Dwellings Approved	Annual Change in Total Dwellings*
2006-07	124	27
2005-06	97	-12
2004-05	109	-3
2003-04	112	18
2002-03	94	-2
2001-02	96	49
2000-01	47	-21
1999-00	68	-3
1998-99	71	8
1997-98	63	7
1996-97	56	53
1995-96	3	--

Source: Australian Bureau of Statistics, *Building Activity, Australia*, (catalogue number: 8752.0 to 8752.7).

* Annual change represents the difference in number from the preceding year. Negative numbers denote a drop in the number of approvals from the previous year, and positive numbers an increase.

4 Housing, Education and Health

4.2 Education

The proportion of the Moyne Shire population aged 15 years and over which has achieved at least Year 12 equivalent education is significantly lower than the State average (30.9% against 44%). Tarrone has a similar proportion of population achieving Year 12 to the Shire on average; Orford has a significantly higher proportion but still less than the State average.

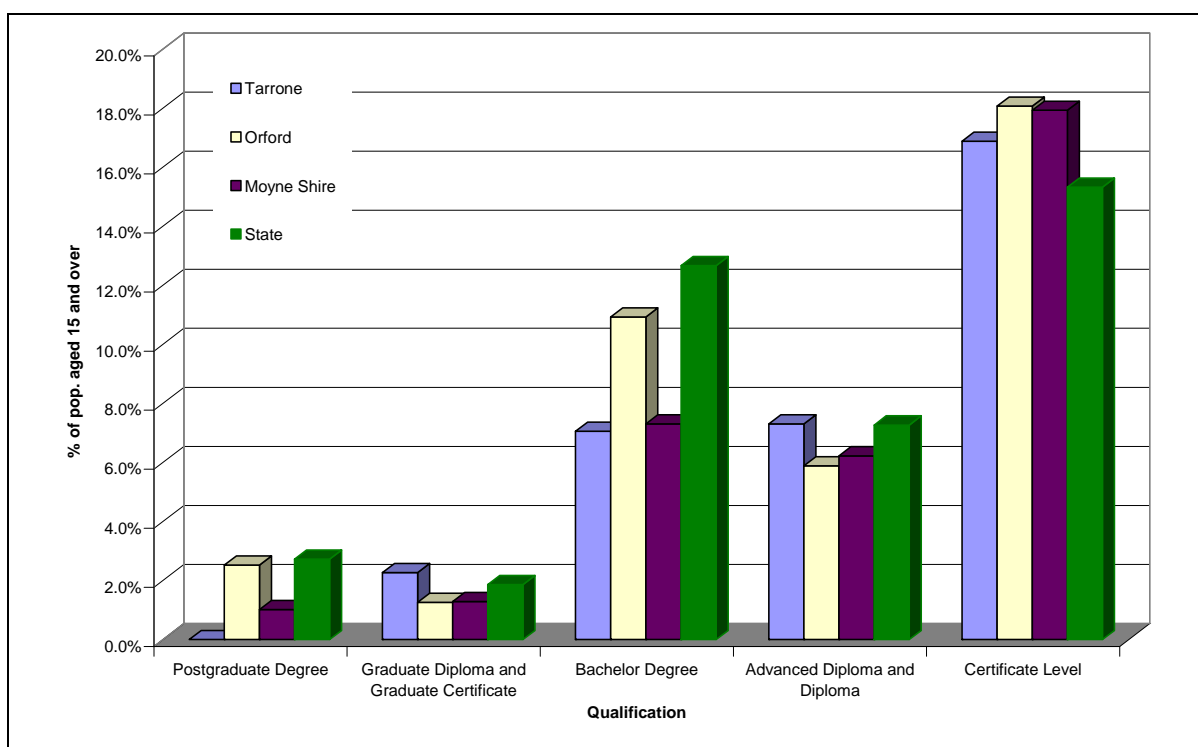
The proportion of the Shire's population holding Bachelor's Degrees or higher is significantly lower than the State average, although the Orford population has a relatively higher proportion of Bachelor's and Post-Graduate Degrees.

Table 4-2 Highest Level of Education

Area	Tarrone		Orford		Moyne Shire		Victoria	
	No.	%	No.	%	No.	%	No.	%
Pop. aged 15 and over	397		238		11,814		3,933,139	
Year 12 or equivalent	126	31.7	97	40.6	3,728	30.9	1,752,303	44.0
Year 11 or equivalent	79	19.9	45	18.8	2,232	18.5	548,812	13.8
Year 10 or equivalent	83	20.9	47	19.7	2,434	20.2	630,950	15.8
Year 9 or equivalent	46	11.6	23	9.6	1,338	11.1	288,132	7.2
Year 8 or below	28	7.1	16	6.7	1,324	11.0	334,084	8.4
Did not go to school	0	0.0	0	0.0	22	0.2	43,627	1.1
Not stated	35	8.8	11	4.6	968	8.0	384,126	9.6

Source: ABS, 2006

Figure 4-1 Post-School Qualifications



Source: ABS, 2006

4 Housing, Education and Health

4.3 Health

Health status data is available for the Barwon South Western Region – Department of Human Services Management region. In addition to Moyne Shire, the Barwon South Western Region includes eight other local government areas, extending from Lara to the South Australian border. It covers an area of 29,637 km², and an estimated residential population of 350,109 (DHS Website 2008).

Figure 4-2 Barwon-South Western Region Primary Care Partnerships



Life expectancy of males in the Barwon South Western Region (74.9 years) is lower than the Victorian average of 75.2 years. The regional life expectancy for females (81.1 years) is just below the state average of 81.2 years (DHS, 2005). Male life expectancy in Moyne Shire ranked sixth among the Region's nine local government areas by 2001, although the Shire's male life expectancy had experienced the Region's highest growth rates in the 1990s. The Shire's female life expectancy similarly ranked sixth in the Region, and had shown the Region's lowest growth rates during the period (DHS Website 2008).

Table 4-3 Life Expectancy

Area	1992-96		1997-2001		Change 1992-96 to 1997-2001	
	Male	Female	Male	Female	Male	Female
Victoria	75.6	81.4	77.4	82.7	2.3%	1.6%
Barwon South-Western Region	75.1	81.2	77.4	82.4	2.2%	1.5%
Moyne Shire	74.1	81.0	76.0	81.6	2.5%	0.7%

Source: Victoria Health Information Surveillance System

4 Housing, Education and Health

The entire Region has a considerable ageing population, which will create challenges for future service delivery. On average, 691 per 1,000 people were eligible aged persons in receipt of a pension, compared to the State average of 687 per 1000 eligible persons (Centrelink June Quarter 2005). The number of people in receipt of a disability pension is slightly higher (59.9 per 1000) than the state average of 52 per 1000 (DHS Website 2008).

Disability-Adjusted Life Years (DALY) data indicates the overall disease burden on a community. This data indicates that cardiovascular disease, cancer and mental disorders are the leading causes of burden in the Region (Table 4-4). For males, Corangamite and Moyne rank in the ten lowest health status areas in Victoria. The Region has above average rates for cancer for both males and females. The Barwon-South Western Region has higher than average DALY rates for cardiovascular disease: the highest rates found in Corangamite/Moyne (Ranked 73 out of 78) and Southern Grampians/Glenelg (Ranked 71) for males; Warrnambool ranked the worst in the State for females (DHS Website 2008).

Table 4-4 Disability Adjusted Life Years Rates (Selected), 2001

	Victoria		Barwon South-Western Region		Moyne Shire	
	Male	Female	Male	Female	Male	Female
All causes	143	129.1	144.8	128.5	140.2	120
Communicable diseases, maternal, neonatal, nutritional	5.1	5.3	5	5.2	4.3	4.8
Non-communicable diseases	125.3	118.8	125.6	118.1	119.2	109.7
Malignant cancers	30.1	26.2	30.2	26.2	30.3	26.3
Diabetes mellitus	6.5	5.7	7	6.2	5.5	4.3
Mental disorders	19.6	19.7	19.6	19.9	18.7	17.2
Neurological and sense disorders	14.7	16.6	14	15.7	12.6	13.9
Cardiovascular diseases	25.5	22.4	25.7	22.3	24.8	21.4
Chronic respiratory diseases	10.4	9.5	10.4	9.6	9.1	9.1
Digestive disorders	3.1	3	3	3	2.7	2.9
Genito-urinary disorders	4	3.8	3.9	3.7	3.7	3.5
Musculo-skeletal diseases	3.4	5.1	3.5	4.8	3.8	4.4
Injuries	12.6	5	14.2	5.2	16.7	5.5
Road and traffic accidents	3.5	1.3	4.2	1.5	5.4	2
Intentional injuries	4.6	1.5	5.1	1.4	5.7	1.3
Suicide	3.9	1.3	4.4	1.2	5.3	1.1

Source: Victoria Health Information Surveillance System

Ambulatory Care Sensitive Conditions (ACSCs) are those for which hospitalisation is thought to be avoidable if preventative care and early disease management are applied, usually in the ambulatory setting. The concept of preventable or avoidable hospitalisation provides an indicator of health outcomes for evaluating the adequacy of primary care. ACSCs admission rates also provide a measure of access to health care. In the Region, there were 13,699 admissions for total ACSCs in 2003-04, with an average of 5.1 bed days (5.12 in Victoria overall). Diabetes complications were the leading cause of admissions in 2003-04. The top ten ACSCs accounted for 87.63 per cent of total ACSCs admissions. The Region's admission rate ratios for dental conditions and ear, nose and throat infections were significantly higher than the Victorian averages in 2003-04 (DHS Website 2008).

Community Infrastructure and Networks

5.1 Community Facilities and Services

5.1.1 Medical and Health

Health services in Moyne Shire are administered by the South-West Primary Care Partnership, one of three PCPs in the Department of Human Services' Barwon-South Western Region.

Local medical services consist of a community health facility in Macarthur, a medical centre in Port Fairy and the nearest hospital in Warrnambool.

The state average of GP's per 1,000 is 1.48 with the Region's being 1.21. Eight local government areas are below the state average with the measures for Moyne and Glenelg being 0.38 and 0.49 respectively.

5.1.2 Emergency Services

The nearest police stations to the proposed site are located in Koroit, Port Fairy and Macarthur, while the nearest ambulance and State Emergency Service units are located in Port Fairy. The area is serviced by local volunteer Country Fire Authority brigades. A new emergency air ambulance helicopter has also been announced to be based at Warrnambool.

5.1.3 Sporting and Community Facilities

Sporting and community facilities in the immediate area of the proposed project are limited. There is a recreation reserve at Tarrone and a public hall and recreation reserve at Orford.

Port Fairy has a fitness centre, golf course and indoor swimming centre, while an outdoor swimming pool exists at Macarthur. The nearest football and netball clubs are at Koroit, Hawkesdale-Macarthur, and Port Fairy.

5.1.4 Public Transport

Tarrone is not currently serviced by public transport. Warrnambool is serviced by a passenger train to Geelong and Melbourne, with some services continuing to Port Fairy by bus. V/Line provides bus connections between Warrnambool and Portland, Mount Gambier, Ballarat and Hamilton. There is a local bus service in Warrnambool which also has several services each day to Port Fairy and Koroit.

5.2 Community Cohesion

The Victorian Department of Planning and Community Development (2006) identify three types of social networks that have been demonstrated to generate benefits for individuals and communities:

1. **Close personal networks.** These networks can provide individuals with benefits such as emotional support, practical help and resources (and can also be associated with costs such as in cases of family violence);
2. **Broader associational and community networks.** These are networks that people build through participation in employment, education or public life.
3. **Governance networks.** This networks link individuals to institutions and therefore to power, resources and ideas. Governance refers to all the structures (government, organisations, committees, etc) and processes (policies, practices, etc) related to decision-making.

5 Community Infrastructure and Networks

Table 5-1 provides indicators of the strength of networks that fall under each of these of these three categories of networks.

Table 5-1 Community Strengthening Indicators, 2006

	Moyne	Barwon South-West Region	Victorian Regional Average
Personal networks			
Can you get help from friends, family or neighbours when needed?	94.4	94.6	94.2
Could you raise \$2,000 in two days in an emergency?	80.4	74.4	70.8
Broader associational and community networks			
Volunteer	62.9	54.1	52.5
Member of organised groups	63.6	55.3	51.4
Member of group that has taken local action	60.5	50.1	51.5
Parental participation in schools	65.3	71.9	66.7
Is on decision-making board or committee	23.8	23.0	22.5
Attendance at community events	60.5	53.1	53.1
Feels safe on the street alone after dark	83.0	67.0	67.2
Feels multiculturalism makes life in the area better	78.2	82.3	78.5
Governance networks			
Feels valued by society	77.7	70.3	69.3
Feels there are opportunities to have a real say on issues that are important	69.1	58.1	59.1
The area has easy access to recreational and leisure facilities	71.1	81.5	78.2
The area has good facilities and services like shops, childcare, schools, libraries	69.5	76.8	74.5
The area has opportunities to volunteer	85.0	81.1	81.3
The area has a wide range of community and support groups	71.3	77.4	73.4
It's an active community	83.3	71.0	72.2
Organised sport	-	-	45.0

Source: Department of Community Development and Planning, 2007

Strong communities are believed to have a balance of all three types of networks (DPCD 2007). Each type provides the foundation for building the other. For example, strong and positive close personal networks can give people the skills and confidence to participate in broader associational and community networks, while broader participation has been shown to influence, and lead some people to become involved in, governance networks. Strong governance in turn leads to better services and facilities to support close personal networks. If whole communities or sub-population groups within them (such as young, ethnic, Indigenous or disadvantaged populations) do not participate in activities that can help build the different types of networks, they may miss out on the benefits. For example, if disadvantaged people do not have opportunities to participate in activities that build associational, community and governance networks (employment, education and public life), they could be locked out of the decision-making that creates services, facilities and policies that improve their wellbeing.

5 Community Infrastructure and Networks

Moyne scores highly across all DCDP indicators of community strength. The Shire's population has high rates of personal association and access to resources significantly higher than the average for regional Victoria. Local indicators for broader associational and community networks – including participation in organised groups, including local action and decision-making bodies, and attendance at community events – are significantly above average for both the Barwon South-West Region and for regional Victoria. Local residents are also more likely to feel valued by society and to believe that there are opportunities to have a real say on issues which are important.

The Local Economy

6.1 Overview

The Tarrone Power Station will be built in the Shire of Moyne however, many of the services and labour related to the construction of the power station is likely to be provided from the City of Warrnambool which is surrounded by the Moyne Shire.

The Moyne Shire is predominantly rural based, with a focus on grazing, dairying and grain production. Wool and lamb production are the most significant sources of income, along with significant income derived from residents commuting to work in Warrnambool. The main industries include agriculture, dairy product manufacturing (quarrying, food products, pharmaceuticals, seafood) and tourism.

The main towns in Moyne shire are: Port Fairy an historic coastal town and popular tourist destination; Koroit, located near Tower Hill State Game Reserve, has a major dairy processing plant operated by Murray Goulburn; and Mortlake, which provides a commercial centre for the northern part of the municipality.

Warrnambool is a major service centre for the South West Coast providing retail, health and education services for the South West of Victoria. It is the largest town in the Western District. In the following discussion the combined Shire of Moyne and Warrnambool City is referred to as the Region.

6.2 The Labour Market

Unemployment levels in Moyne Shire (3.3%) and the Region (4.5%) were lower than for all of Victoria (5.4%) in August 2006 when the census was collected. At the same time the participation rates in Moyne and the Region were also higher than for Victoria. Table 6-1 details the labour force status for the selected areas.

Table 6-1 Labour Force Status, Moyne Shire, the Region and Victoria, 2006

	Moyne Shire	Warrnambool	Moyne and Warrnambool	Victoria
Total Employed Persons	7,384	14,025	21,309	2,274,448
Total Unemployed Persons	251	764	1,015	130,157
Unemployment Rate	3.3%	5.2%	4.5%	5.4%
Labour Force Participation Rate	66.8%	65.1%	65.7%	64.4%

The Department of Employment and Workplace Relations, Small Area Labour Market data provides quarterly estimates of unemployment by Statistical Local Areas. These data (see Table 6-2), which are derived primarily from the quarterly Labour Force estimates, provide a reasonably current estimate of labour market conditions. In December 2008, the Moyne Shire was estimated have an unemployment rate of only 2.2%, down from 3.0% the previous December. Warrnambool's unemployment rate in December 2008 was only 3.9%. The combined Moyne-Warrnambool region unemployment rate was 3.3%. By contrast the average unemployment rate for Victoria in the same period was 4.4%.

Over the year to December 2008, the number of employment persons in the Moyne/Warrnambool grew by 4.7% or 738 persons. These labour force data are indicative of a strong local labour market and suggest that labour for the power station project may need to be largely sourced from outside the region.

6 The Local Economy

Table 6-2 Department of Employment and Workplace Relations, Labour Force Data, September 2007 and 2008

	Moyne Shire		Warrnambool City		Moyne and Warrnambool		Victoria	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Unemployment Dec 2008	209	2.2%	674	3.9%	883	3.3%	122,100	4.4%
Unemployment Dec 2007	283	3.0%	901	5.4%	1184	4.6%	126,700	4.7%
Employed Persons Dec 2008	9,422	N.A.	16,522	N.A.	25,944	N.A.	2,639,300	N.A.
Employed Persons Dec 2007	8,997	N.A.	15,784	N.A.	24,782	N.A.	2,569,045	N.A.

Source: Department of Employment and Workplace Relations, Small Area Labour Markets, September 2008

6.3 Employed Residents by Industry

The industry profile for Moyne Shire residents is dominated by an unusually high share of employment in the Agriculture, forestry and fishing sector, (nearly all of these employees are in Agriculture). This sector accounts for 32.6% of employment for Shire residents; significant numbers are also employed in Health care and social services (9.9%) and Retail trade (9.6%) The construction sector only employs 6.5% of residents, which is a relatively low industry share when compared to Victoria as a whole. Table 6-3 and provide details and a comparison of the industry structure of Moyne Shire and the Region with Victoria.

Table 6-3 Employment Persons by Industry, Moyne Shire, Moyne Warrnambool Region and Victoria, 2006

Industry Sector	Moyne Shire		Warrnambool		Moyne and Warrnambool		Victoria	
	Number	%	Number	%	Number	%	Number	%
Agric, forestry & fishing	2,408	32.6%	322	2.3%	2,731	12.8%	65,420	2.9%
Mining	26	0.3%	51	0.4%	77	0.4%	6,448	0.3%
Manufacturing	638	8.6%	1,571	11.3%	2,209	10.4%	294,809	13.0%
Elec, gas, water & waste	40	0.5%	189	1.4%	229	1.1%	20,551	0.9%
Construction	477	6.5%	1,244	8.9%	1,721	8.1%	176,065	7.7%
Wholesale trade	223	3.0%	537	3.9%	760	3.6%	115,572	5.1%
Retail trade	712	9.6%	2,122	15.2%	2,834	13.3%	270,518	11.9%
Accom & food services	421	5.7%	1,185	8.5%	1,605	7.5%	135,376	6.0%
T'port, postal & w/housing	273	3.7%	543	3.9%	816	3.8%	106,603	4.7%
Info media & telecoms	41	0.6%	179	1.3%	220	1.0%	51,275	2.3%
Finl & ins services	97	1.3%	325	2.3%	423	2.0%	94,771	4.2%

6 The Local Economy

Industry Sector	Moyne Shire		Warrnambool		Moyne and Warrnambool		Victoria	
	Number	%	Number	%	Number	%	Number	%
Rental, hiring & real estate	46	0.6%	189	1.4%	235	1.1%	31,603	1.4%
Prof, scientific & tech services	173	2.3%	540	3.9%	714	3.4%	165,952	7.3%
Admin & support services	116	1.6%	379	2.7%	495	2.3%	76,933	3.4%
Public administration & safety	318	4.3%	706	5.1%	1,024	4.8%	120,110	5.3%
Education & training	420	5.7%	1,271	9.1%	1,690	7.9%	179,105	7.9%
Health care & social assist	732	9.9%	1,898	13.6%	2,631	12.3%	242,897	10.7%
Arts & recreation services	56	0.8%	155	1.1%	211	1.0%	36,608	1.6%
Other services	166	2.3%	518	3.7%	684	3.2%	83,834	3.7%
Total	7,383	100.0%	13,925	100.0%	21,308	100.0%	2,274,450	100.0%

Source: ABS Census 2006

By comparison with the Victorian economy, the region has relatively high shares of employed persons in the Agriculture, forestry and fishing sector, retail trade and Health care and social assistance (Table 6-3). While construction employment levels are only just higher than for Victoria.

It should be noted that local residents are not necessarily employed in their own area, but may travel some distance for their work. Data from the ABS Census Journey to Work database suggest that some 1,954 Moyne residents worked in Warrnambool and 1,173 Warrnambool residents worked in Moyne Shire in 2006.

6.3.1 Occupation Structure of Local Residents

Reflecting high proportion of person employed in Agriculture, Moyne Shire has very high proportion (33.7%) of its employed residents working as managers, (a group that includes self employed persons and farmers). The Shire and the Region have relatively low shares of residents working as Professionals, despite the strong industry share for Health care and social assistance and Education sectors. There is a relatively high share of person working as labourers but a lower than average share of Machinery operators and drivers. These groups are detailed in Table 6-4.

6 The Local Economy

Table 6-4 Occupation Groups Employed residents, Moyne, the Region and Victoria, 2006

Occupation Group	Moyne Shire		Warrnambool		Moyne and Warrnambool		Victoria	
	Number	%	Number	%	Number	%	Number	%
Managers	2,425	33.7%	1,527	11.1%	3,952	18.9%	304,732	13.7%
Professionals	818	11.4%	2,429	17.7%	3,247	15.5%	468,979	21.1%
Technicians and trades workers(b)	894	12.4%	2,190	16.0%	3,084	14.7%	317,525	14.3%
Community and personal service workers	526	7.3%	1,274	9.3%	1,800	8.6%	189,789	8.6%
Clerical and administrative workers	552	7.7%	1,728	12.6%	2,280	10.9%	335,724	15.1%
Sales workers	554	7.7%	1,821	13.3%	2,375	11.4%	230,313	10.4%
Machinery operators and drivers	437	6.1%	817	6.0%	1,254	6.0%	148,368	6.7%
Labourers	993	13.8%	1,926	14.0%	2,919	14.0%	223,474	10.1%

This representation of employed residents provides a useful indicator of the industrial capacities, skills and expertise of the local work force, hence the potential supply of labour from the region for a power station construction program. While there appears to be sufficient Technical trades workers and Machinery operators and drivers, it is likely these are fully employed in the existing industries, on the basis of the available data. The construction of the proposed power station could therefore give rise to potential shortages of the required labour from the region.

6.3.2 Jobs by Industry

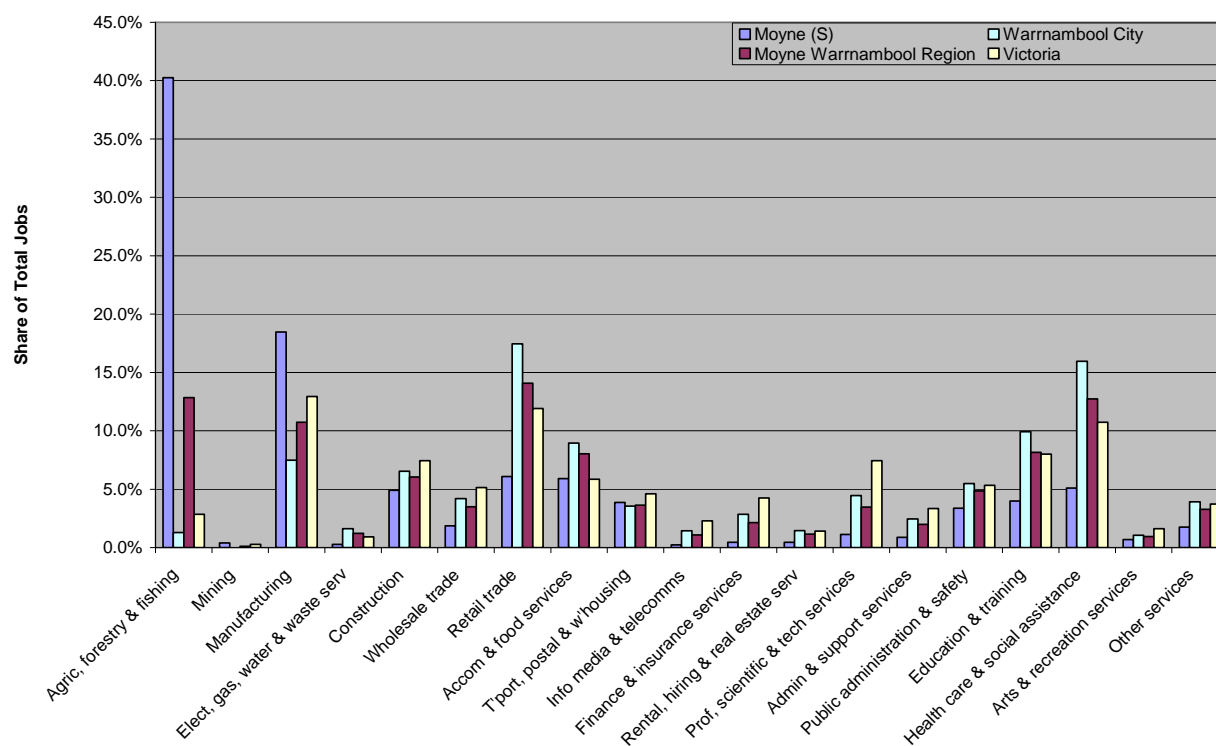
The ABS also publishes data on employed persons by place of work. This 'jobs' data provides a more accurate description of a local economy than the data on employed residents, who may be employed in areas quite remote from the local economy.

For the Moyne Shire the dominance of the Agriculture forestry and fishing sector is evident as this sector provides 40.3% of all jobs located in the Shire, the next most important sector is manufacturing with 18.5% of all jobs, followed by the retail trades with only 6.1% of jobs. Within the manufacturing sector some 76.7% of jobs were in food processing and 9.6% were in Chemical product manufacturing.

Warrnambool by contrast has an industry profile that reflects its regional service centre status. The largest sector is Retail trade (17.5%) followed by Health care and social assistance (16.0%) and Education and Training (9.9%). The Manufacturing sector provides a relatively low share of local jobs in Warrnambool (7.5%) as did construction (6.5%). Figure 6-1 provides a comparison of the relative shares of local jobs by industry for the study areas and Victoria, this data is detailed in Table 6-5.

6 The Local Economy

Figure 6-1 Employed Persons by Place of Work, Moyne Shire, the Region and Victoria, 2006



Reflecting the strong Education sector in Warrnambool, the town has a relatively high share of persons aged 15 to 24, with 14.7% of the town's population being in this age group compared to 13.7% for Victoria (see Table 3-1 and Table 3-2).

Table 6-5 Jobs in Moyne the Study Region and Victoria by Industry Sector, 2006

	Moyne		Warrnambool		Moyne and Warrnambool		Victoria	
	Number	%	Number	%	Number	%	Number	%
Agric, forestry & fishing	2,273	40.0%	172	1.3%	2,445	12.8%	60,653	2.8%
Mining	22	0.4%	0	0.0%	22	0.1%	5,780	0.3%
Manufacturing	1,043	18.3%	1,001	7.4%	2,044	10.7%	276,080	12.8%
Elect, gas, water & waste serv	15	0.3%	216	1.6%	231	1.2%	19,355	0.9%
Construction	277	4.9%	873	6.5%	1,150	6.0%	159,029	7.4%
Wholesale trade	105	1.8%	560	4.2%	665	3.5%	109,546	5.1%
Retail trade	344	6.0%	2,335	17.4%	2,679	14.0%	254,391	11.8%
Accom & food services	333	5.9%	1,197	8.9%	1,530	8.0%	124,743	5.8%
T'port, postal & w'housing	218	3.8%	474	3.5%	692	3.6%	97,996	4.5%

6 The Local Economy

	Moyne		Warrnambool		Moyne and Warrnambool		Victoria	
	Number	%	Number	%	Number	%	Number	%
Info media & telecomms	13	0.2%	191	1.4%	204	1.1%	48,872	2.3%
Finance & insurance services	25	0.4%	381	2.8%	406	2.1%	90,588	4.2%
Rental, hiring & real estate serv	25	0.4%	194	1.4%	219	1.1%	30,161	1.4%
Prof, scientific & tech services	64	1.1%	595	4.4%	659	3.4%	158,822	7.4%
Admin & support services	50	0.9%	327	2.4%	377	2.0%	71,285	3.3%
Public administration & safety	190	3.3%	733	5.5%	923	4.8%	114,001	5.3%
Education & training	225	4.0%	1,329	9.9%	1,554	8.1%	170,782	7.9%
Health care & social assistance	288	5.1%	2,136	15.9%	2,424	12.7%	229,025	10.6%
Arts & recreation services	38	0.7%	141	1.0%	179	0.9%	34,211	1.6%
Other services	99	1.7%	524	3.9%	623	3.3%	79,400	3.7%
Inadequately described/Not stated	41	0.7%	69	0.5%	110	0.6%	25,197	1.2%
Total	5,688	100.0%	13,448	100.0%	19,136	100.0%	2,159,917	100.0%
Jobs per 1000 Residents	368		442		417		438	

Source ABS WPP, 2006

Table 6-5 is based on the Census Working Population Profile and details employment by the location of the job rather than being based on the person's place of residence. On this basis, the Moyne Shire has relatively low ratio of local jobs per 1000 residents (368) compared to the State average (438); whereas the same ratio in Warrnambool is higher, with many Moyne residents working there. This indicates why these areas should be considered as a common labour market in the subsequent phases of the ESIA.

6.3.3 Estimated Value of Regional Output

Using a simple extrapolation of output per effective full time employee by industry from the Australian National Accounts Input Output model 2004-05 adjusted to 2005-06 and then multiplied by the effective full time employees by industry in the Municipalities estimates of the Total Output and Gross Value Added for the Moyne and Warrnambool municipalities separately and jointly were calculated. These are detailed in Table 6-6. The gross value added for the region, which is equivalent to Gross Regional Product, less net taxes for the combined region is estimated at \$1.48 billion in 2006.

6 The Local Economy

Table 6-6 Estimated Total Output and Gross Value Added Moyne and Warrnambool Municipalities and Victoria, 2006

	Total Output \$m	Gross Value Added \$m
Moyne Shire	\$1,311	\$500
Warrnambool City	\$2,313	\$977
Moyne and Warrnambool	\$3,624	\$1,477

6.3.4 Significant Local Businesses

There are a number of significant businesses located in the region. Moyne Shire has two milk processing plants Warrnambool Butter factory at Allansford, (adjacent to the Warrnambool/Moyne boundary), and Murray Goulburn at Koroit. Both these businesses employ many drivers for the collection of milk and distribution of product. The pharmaceutical company Glaxo Smith Kline has a processing plant at Port Fairy, which processes whey for tablet and pill casings and also poppies for analgesics. Bamstone (Stone pavers and cement) is located on the Port Fairy Orford Road, employs a range of plant operators and drivers and services the wider Victorian market.

While Warrnambool had a strong history of manufacturing this industry has been superseded by service industries such as Deakin University and the South West Health Care's General Hospital and South West TAFE. In the retail sector, most of the 'big box retailers' (Bunnings, Harvey Norman etc) are represented in the City as are Coles Woolworths and IGA supermarkets. Ryans Removals is the largest local transport operator providing general freight services.

6.4 Current Project Developments

The Moyne and Warrnambool regions are likely to see considerable development activity in the next few years. AGL and Meridian are jointly building the MacArthur Wind Farm with up to 183 towers and with a rated capacity of 450 MW and a construction cost of \$850m. Various gas fired power plants are being considered for the region using gas from the Sea Gas pipeline, including the AGL Tarrone power plant various. Origin energy has planning approval for a 1000MW base combined cycle gas fired power station at Mortlake in the north of Moyne Shire, while Santos are seeking planning approval for similar 1500MW gas generator at Shaw River near Orford, to be initially established as a 500MW station, this station is currently preparing an Environmental Effects Statement (Santos,2009).

Over the past 20 years, there have been considerable plantings of Blue Gum plantations in the broader region known as the Green Triangle. This are takes in the south east corner of South Australia, Glenelg, Moyne and Southern Grampians Shires. Wood from these plantations is now coming on stream and production is expected to peak at around 3.3m tonnes per annum in the 2009 to 2014 period. This will generate considerable demand for machinery operators and drivers from the region. This demand will strain an already fully employed labour market in the Moyne and Warrnambool Municipalities.

In addition to the gas and timber projects Warrnambool Council have identified some \$322m of potential investments in the region (Warrnambool City, 2008b) for the next five years. Should these projects all proceed they would generate more than 21/2 times the rate of investment seen over the previous five years. Moyne Shire is expecting that the projects in the region will increase the demand for labour by almost 2900 persons in total over the next five years (pers. comm. 6/1/09a).

Conclusions

7.1 Regional Social and Economic Characteristics

The immediate study area and the surrounding Shire of Moyne is predominantly a rural area. However the economic and social structure of the area needs to be considered in association with the major service centre of Warrnambool which is surrounded by the Shire. Within the combined Moyne and Warrnambool Local Government Areas there has been strong population and economic growth in the recent past, there are low levels of unemployment. There are also a number of construction projects are planned for the region. This could place pressure on available residential and commercial land and labour resources in future.

The combined region is largely an agricultural and service sector economy with a relatively low share of employment in the construction sector despite the high levels of activity in this sector. While there is some spare housing capacity in the area, this is likely to be seasonal. The area has a significant tourism industry being a key location on the Great Ocean Road touring route, but tourism activity is largely concentrated in summer and autumn.

The Tarrone area residents have higher incomes than Moyne Shire, but similar incomes to the Victorian average. The Moyne shire population has a good health status (average disability adjusted life years) but an ageing population may impact on this status in future. The Moyne Shire population is currently older (average age 40 years), on average, than Victoria as a whole (36 years). The Moyne shire has exhibited population decline since 1981 but the Shire's population is expected to increase about 0.6 percent per annum over the next 13 years.

There are limited local services in the Tarrone area, but Warrnambool, Port Fairy and Koroit provide facilities and services across all key areas.

7.2 Data Gaps to be Addressed

This report has principally drawn on available desktop studies. These studies do not provide an insight into current local community views, attitudes and values, and community transport and patterns of using the study area. Data in these areas will be collected through a process of consultation with local residents, local government, local businesses, and local community organisations. This consultation process will also gather information to inform the assessment of project impacts in the local area and to develop mitigation measures to address these impacts.

With regard to the economic and social impacts detailed data needs to be developed on the likely size of the construction workforce, and skills and expertise required, for the Tarrone Power Station and the likely duration of the construction period including likely peaks in activity. To determine the economic impacts more information on the likely source of labour and materials for the project needs to be provided.

7.3 Potential Areas of Impact

The next phase of the Social and Economic Impact Assessment methodology will be impact assessment. However the baseline study has already identified the following potential impact areas for further investigation:

- Local shortages of appropriate labour
- Shortages of housing and residential land in Warrnambool
- Shortages of commercial land in Warrnambool

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Limitations

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