AGRICULTURAL IMPACTS

of the

INSTALLATION OF SOLAR PANELS AND CONSTRUCTION OF A SOLAR FARM

at

Frasers Lane, Glengarry North

For

South Energy

Prepared by

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Table of Contents

1. Introduction

1.1 Project Brief

Ag-Challenge Consulting has been instructed by South Energy on behalf of Frasers Lane Development Pty Ltd to investigate the agricultural impacts of a proposed construction of a Solar Farm (The Project) on 108 hectares of farmland at Glengarry North in eastern Victoria. The investigation is to describe the existing agricultural use in both a local and regional context and to consider the impact of the solar development on the existing use of the property, identify any potential impacts on adjacent properties and determine whether the proposal is likely to have any adverse impacts on surrounding land uses.

The Project Site of 108 hectares of farmland is a single contiguous area comprised of one individual property in four separate titles. The four titles and their street addresses are:

Allot. 124 Parish of Toongabbie South	Frasers Lane, Glengarry North	24 ha
Allot. 124A Parish of Toongabbie South	Frasers Lane, Glengarry North	39 ha
Allot. 125 Parish of Toongabbie South	Frasers Lane, Glengarry North	25 ha
Allot. 125C Parish of Toongabbie South	Frasers Lane, Glengarry North	20 ha

1.2 Experience and Capability of Ag-Challenge Consulting

Ag-Challenge Consulting is an agricultural consultancy company servicing the dairy, beef, and potato industries as well as other high rainfall and irrigated agriculture industries of Southern Victoria. The company is based at Warragul and the principals of the company have been providing independent farm consultancy advice since 1988 from this location. There are four active consultants within the company that service approximately 200 individual farmer clients with consultancy services from Ag-Challenge Consulting, as well as industry associations, financial institutions, and government. The company is active in vocational training, running focus farms and discussion groups and undertakes farm design work. The recycled water industry is a significant user of Ag-Challenge Consulting for the design and monitoring of recycled water projects.

The information presented in this report is unbiased and has been based on the facts as presented to the author and analysis of those facts to provide information that will assist interested parties in deciding on an application to alter the use of land from its present agricultural use.

2. Regional Context

2.1 Property Zoning

The subject land is located within the City of Latrobe. The Frasers Lane property is currently zoned as Farming Zone (Latrobe Planning Scheme).

The purpose of the Farming Zone is:

- To provide for the use of land for agriculture.
- To encourage the retention of productive agricultural land.

- To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.
- To encourage the retention of employment and population to support rural communities.
- To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.
- To provide for the use and development of land for the specific purposes identified in a schedule to this zone.1

A planning permit is required for the construction of a Renewable Energy facility within the Farming Zone, and the Planning Scheme states that a condition of approval is that the facility must meet the provisions of Clause 53.13 of the Planning Scheme. Among other provisions, Clause 53.13 states that the applicant must undertake a site and context analysis including a description of the site and surrounding area. This assessment of agricultural impacts forms part of the response to the provisions of Clause 53.13.

The Draft – Solar Energy Facilities Design and Development Guidelines (2018) provides further guidance as to what should be included within a site analysis and what should be investigated at a regional level:

- Policy context, zones and overlays
- Agricultural values including irrigation infrastructure impacts
- Heritage and Aboriginal cultural values
- Landscape and visual amenity values
- Biodiversity and native vegetation
- Access to the Victorian Electricity Grid
- Other infrastructure requirements
- Cumulative effect of solar energy facilities in the area

The agricultural values of the land will be assessed in accordance with these guidelines, including an assessment of the agricultural significance of the land and the location of agriculturally significant land within the shire and the region.

There is a single planning overlay within the eastern portion of the property, it is covered by the Land Subject to Inundation Overlay. The inundation overlay identifies land subject to a one in 100-year flood. The overlays purpose is to ensure that any development within the area maintains free passage and natural detention of floodwaters in an effort to minimise damage caused by floods.

An area of Aboriginal Cultural Sensitivity lies within the south western corner of the property. The Culturally Sensitive area can be described as a 400m to 450m width strip of land with an east west orientation following the course of Four Mile Creek. Culturally Sensitive Areas normally require a management plan to be prepared prior to any development or change of land use. The management plan identifies the nature of sensitive area and specifies how development may proceed without impacting on the sensitivity.

[1] Victorian Planning Provisions – DELWP - http://planning-schemes.delwp.vic.gov.au/schemes/vpps/35_07.pdf

2.2 Climate

The climate of the Gippsland is defined by high rainfall and warm summers. The region experiences summers with average daily maximum temperatures ranging between 21 and 25°C. Winters are mild along the coast and cooler further inland with snow in some areas. Low lying areas are prone to frosts and occasional flooding[2]. While much of west and central Gippsland has an annual rainfall of around 1000 mm, the Glengarry area has a much lower rainfall and 620 mm per annum is the longer term average. Since 1960 the annual average temperature across Gippsland has increased by as much as 1.0 °C and rainfall in some areas has decreased by as much 400 mm per annum[3].

2.3 Regional Land Form

The Project Site is within the Eastern lowlands of the Gippsland Lakes. These low plains were formed from extensive Tertiary alluvial fan and flood plain deposits due to the Kosciusko Uplift. The Tertiary deposits were followed by the formation of the Pleistocene terrace, from an initial marine regression leading to deep valleys being cut into the landscape. The regression was then followed by a sharp rise in sea levels leading to alluvial deposits. The landforms and their associated soils in this particular section of the Gippsland Lakes were described in some detail by J. M. Aldrick et al (1992)[4].

J. M. Aldrick et al describes three separate land types (land systems) within this Eastern Lowlands section of the Gippsland Lakes which are all low lying and lacking in topographical relief. They are the Redgum 1 system, Redgum 2 system and the Dutson System. They differ in soils and drainage. The Redgum 2 system encompasses all the land that comprises the Frasers Lane property. It is described by J. M. Aldrick et al as a flat plain which contains low gilgai micro relief with very little dissection leading to little integrated drainage. The topography is very subdued. The landscape has developed on well developed duplex soils, with varying amounts of rounded gravels appearing throughout the soil profile.

2.4 Regional Land Use

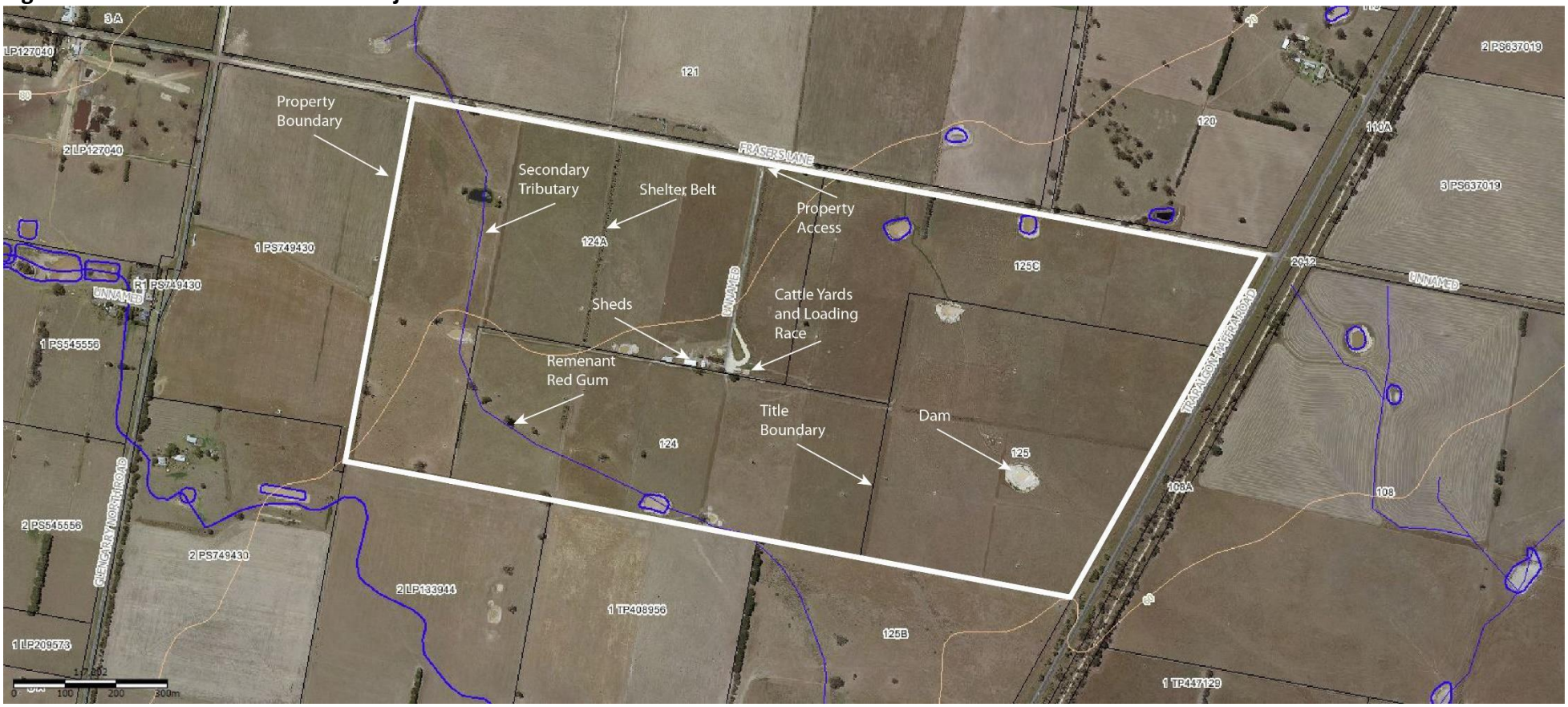
The intensity and type of agricultural production varies across the Eastern Lowlands. Of the area which has been cleared, grazing on both improved and unimproved pasture is common, with some limited cropping. Some of the land remains heavily timbered and not in agricultural use. To the north and west of the Frasers Lane property are areas with well drained soils and available irrigation leading to a highly productive agricultural region. In this area intensive agriculture is based around Maffra. Vegetable crops, dairying and fodder production for intensive animal industries are all undertaken using irrigation from the Glenmaggie and Thomson river systems.

[2] Climate-Ready Victoria, Hume – Victorian State Government - https://www.climatechange.vic.gov.au/ data/assets/pdf_file/0021/60744/Gippsland.pdf

[3] Climate-Ready Victoria, Hume – Victorian State Government - https://www.climatechange.vic.gov.au/ data/assets/pdf_file/0021/60744/Gippsland.pdf

[4] J. M. Aldrick et al (1992) A Study of the Land in the Catchment of the Gippsland Lakes Volume 1 & 2, TC 17, Department of Conservation and Natural Resources Victoria.

Figure 1. Annotated Aerial of the Subject Land



3 Site Characteristics

3.1 Description of the Land

The subject land is located within a flat depositional landscape with a secondary tributary to Four Mile Creek and basin. Four Mile creek flows through the properties to the south west of the subject land. The property has a slope of approximately 1% with fall towards the south west where the secondary tributary flows south. The tributary appears to be quite stable with no vegetation or protective infrastructure. The grade of this waterway is quite low and run off within the waterway is expected to be quite slow. There are some artificial drains along roads and across adjacent farm land that assist in removing surplus water when major rain events occur.

3.2 Soils

The soils of the property were assessed by Tony Pitt and Cameron de Kok of Ag-Challenge Consulting during the site visit on May 13, 2019. The soils were considered uniform over the 108 hectares and can be described as yellow brown duplex soil that have a tendency towards poor internal drainage and winter waterlogging. These soils are described regionally as being duplex, poorly drained, containing gravel, being stratified and usually gilgaied. At this location, no gilgais were observed with soils appearing to be imperfectly drained. It is possible that the historic clearing and use of land for farming has masked the surface feature of gilgais. A soil profile description from the field investigation of May 13, 2019 is included below.

Table 1 Soil Profile Description:

Depth (cm)	Horizon	Description
0 – 10	A1	Dark Brown (7.5YR 3/2) **Loam**. Moderate Structure *Gradational to:*
10 – 55	A2	Brown (7.5YR 5/3) **Sandy Clay Loam** Weak structure Crumb at horizon *Clear Transition to:*
55 –	B1	Yellowish Brown (10YR 5/4) **Medium Clay** Well Structured Angular and Blocky structure Likely old weathering down below Hole terminated at 110 cm

The B1 horizon has low porosity and appears to be only slowly permeable, thus restricting vertical movement of water through the soil profile. Grazing is the most popular use or the land within the area however, broad acre cropping has also been undertaken north of the property where there is a slight slope in the landscape and surface drainage is facilitated by this natural waterway.

3.3 Native Vegetation and Riparian Zone

Remnants of the former open woodland vegetation that would have once grown across this landscape are present on all four properties. The species have not been formally identified but are likely to be Red Gum.

The remnant vegetation within the property is sparse, with approximately 12 red gums situated randomly, there were a further 6 stags on the property. The property also has approximately 4 kilometres of recently planted shelter belts located across the property containing mostly natives up to at least 3 years old. These shelter belts have been planted primarily in a north south orientation.

3.4 Water Supply

There is a total of eight small dams located within the property, but none of them would appear to be a secure water source for a prolonged dry period. The property does however also have a water reticulation system supplying up to two water troughs in each paddock. However, each property only has one or small dams on each title.

4 Land Capability, Land Quality and Agricultural Production

4.1 Agricultural Land Capability Classification

The land is currently used for grazing of beef cattle. The Land Capability Rating[5] for low rainfall grazing use has been determined to have a value of 1 using the highest determined value method for a range of potentially limiting parameters (Table 2). A rating value of 1 or 2 means that the land is suitable for this use and the hazards associated with such use are low to very low. It means that this is a sustainable form of land use. No other land capability ratings for other agricultural land uses have been examined due to the restrictions from the soils and soil drainage.

Table 2 Land Capability for Grazing[6] in low rainfall areas (500 mm to 625 mm per annum)

	Land Capability Classes					**Selected Capability Rating**
Land Feature	1	2	3	4	5	
Slope	Less than 10%	10% to 20%	20% to 30%	30% to 40%	More than 40%	**1**
Aspect	E. SE	S, SW, NE	N, NW, W			**1**
Soil Group (Northcote)	Gradational soils, Um soils	Duplex soils with A horizon of 25 to 40 cm thickness	Other duplex soils; Ur & Ug soils	Uc soils		**1**
Average soil depth	More than 1.0 m	0.6 m to 1.0 m	0.3 m to 0.6 m	0.15m to 0.3 m	Less than 0.15 m	**1**
Surface rock	Less than 2%	2% to 15%	15% to 25%	25% to 40%	More than 40%	**1**
Nominal DSE rating	More than 5	3.5 to 5	2 to 3	0.5 to 2	Less than 0.5	**1**

4.2 Land Quality

The land to be occupied for the Project Site is fair to good quality grazing land. This opinion is based on the presence of soils with good water holding capacity and imperfect drainage, a gently undulating landform, an acceptable rainfall, and location within an agricultural district with appropriate support services and infrastructure. The Project site is not significant agricultural land, in that it is not unique, not highly productive, not highly versatile for a multiple range of uses, and not located within an irrigation district. It is currently part of the extensive land resource that supports the grazing districts of Gippsland.

The Project Site land has been assessed against the key attributes that are used to identify strategically significant agricultural land (Table 4). The list of attributes in Table 3 has been adopted from the Draft Solar Energy Facilities Design and Development Guidelines (2018). Productive farmland that is of strategic significance represents the most productive farmland in the state. The analysis in Table 3 supports the opinion of the authors that this land is not of strategic significance for agriculture.

Table 3 Assessment of the agricultural values of the Project Site

Attribute Group	**Assessment Criteria**	**Project Land Assessment**	**Comments**
Soils and Landscape	Inherent Soil Quality	Fair quality soils	These soils are imperfectly drained and not inherently productive or well suited to cropping use. They have good water holding capacity and are naturally stable
	Niche Soil	No	
	Inherent Soil Versatility	Low versatility	
Water and Climate	Access to modern irrigation infrastructure	No	There is no irrigation infrastructure and no irrigation appears to be available. The agriculture here is entirely dependent on natural rainfall.
	Resilience and Adaptability	No	

Structural	Favourable Subdivision Post Farm Gate Processing and Value Adding Industry Clusters Access	Yes Possible but no development No Yes	The farm size and paddock sizes are suitable for this type of agriculture. The farm is a commercially viable entity. There is good market access to abattoirs and sale yards.
Economic	Government Investment Market trends	No Limited	There is no specific government investment relevant to this property or this industry. The market for beef is mature and stable.

4.3 Potential Agricultural Productivity of the Site

This 108 hectares of farmland while located within proximity to the Macalister Irrigation District does not have the potential for irrigation development. It is dryland farming land dependent on natural rainfall for the maintenance of pasture and crops. The soils are limiting because of their imperfect drainage and the rainfall is limiting due to significant moisture deficits in summer and autumn. With improved pastures and appropriate inputs of fertiliser and management, the potential carrying capacity for grazing animals has been estimated to be around 12 dse/ha for a total of 1300 dse for the entire property. The current carrying capacity is lower than this figure as pastures are generally dominated by unimproved species and the fertility appears to be in need of some enhancement.

The property is used for the breeding cattle. Pastures are unimproved and water security is not good. These two factors are likely to restrict the current productivity to below the estimated potential of 12 dse/ha.

4.4 Indicative Gross Margins

A gross margin for the production of 8 to 9 months old weaners suitable for growing on in a feedlot or in a pasture based fattening operation has been prepared and is presented in Table 4. There will be some seasons whereby these weaners may make vealer weights and backfat cover, but the budget has been prepared on the basis that the weaners are suitable for feedlotting rather than direct sale to abattoirs. The stock reconciliation that underpins this budget is provided in Table 5. It shows a production unit based on 108 hectares of land with a carrying capacity of around 12 dse per hectare. Fodder conservation is included in the production system. It is assumed that the peak production requirement is cycled to match the seasonal nature of pasture growth in the spring. The production unit is an 80 cow weaner mother herd which consists of 80 cows, 3 bulls, 15 heifer and 80 calves at foot; a total of 178 head.

Table 4 Gross Margin for Beef weaners

Area required	108	hectares
Purchase price, bulls	3500	$/head
Purchase price, heifers	650	$/head
Weaner weights at sale	300	kg

Cull cow price	2.1	$/kg		
Weaner sale price	3.1	$/kg		
Cull cow sale weight	550	Kg		
Income	**Per ha**	**Unit**	**Price/unit**	**Cash Income**
			$/unit	**$**
Sale of Weaners	80	head	3.10	74400
Sale of Cull Cows	14	head	2.10	16170
Sale of Cull Bull	1	head	2100.00	2100
Total Income				**92670**
Expenditure	**Quantity**	**Units**	**Price**	**Cash Costs**
			$/unit	**$**
Purchase of Heifers	15	head	650.00	9750
Purchase of Bulls	1	head	3500.00	3500
Cartage costs	16	from point of purchase	25.00	400
Cartage costs	95	to point of sale	25.00	2375
Saleyard fees	95	head	8.00	760
Agents commision	4.5	percentage of sale revenue	0.045	4170
Fodder vconservation	120	Rolls of hay	26.000	3120
Fertilser (Pasture Booster)	0.3	tonne/ha	750.00	225
Fertiliser (urea)	0.16	tonne/ha	650.00	104
Drenches and vacines	178	head	10.00	3560
Total Costs				**27964**
Gross Margin				**64706**
Gross Margin/DSE				**22**
Gross Margin/ha				**599**

The analysis in Table 4 shows a gross margin of around $65,000 per annum or $600 per hectare. Costs of fertilizer are included in the gross margin and an allowance has been made for fodder conservation at the rate of 1.5 rolls per vealer mother. The actual farming profit from the property may be considerably less than this figure because of existing productivity constraints from unimproved pastures and poor water security.

Table 5 Stock Reconciliation for Beef Weaners

Opening			**Closing**	
Cows	80		Cows	80
Heifers (joined)	15		Heifers	15
Bulls	3		Bulls	3
Purchases			**Sales**	
Heifers	15		Weaners	80
Bulls	1		Bulls	1
Birth	80		Cull Cows	14
			Deaths and provisions	1
Total	**194**		**Total**	**194**

Annual Feed Requirements				
Type of Stock	DES rating	Portion of the year		DSE
Cows (weaner mothers)	14	12	months	1120
Heifers	9	12	months	135
Bull	14	12	months	42
			Total DSE	1297
Area required at	**12**	**DSE/ha**	**108**	**hectares**

5 Potential Impacts of The Solar Farm development for Agriculture

5.1 Livestock and the Solar Farm

The installation of solar panels is likely to significantly impact the current agricultural uses of the land.

It is understood that solar panels are proposed for installation over most of the subject land. The installation of solar panels will see physical changes to the farm. Existing internal fencing will mostly be removed. Most of the dams are likely to be filled in to create extra space for the installation of the solar panels, although it may be prudent to retain one or two of the larger dams for fire fighting purposes and for reticulation to defined watering points if stock are to be grazed beneath the panels.

The presence of solar panels will reduce the incident sunlight available for plants growing beneath.

Sheep may be able to be grazed beneath and between the solar panels. The carrying capacity of the farm would be lower than the current capacity as the solar panels will reduce

the amount of sunlight available for plant growth. Solar panels are installed for the purpose of capturing sunlight and converting it to power. This competes directly with photosynthesis by grasses and other plants; the process by which plants convert sunlight into energy for the purpose of growth. With solar panels installed above pastures, there would be a reduction in the quantity of light which gets through, reducing the potential growth of the plants.

There will be an impact on soil moisture as affected by rainfall. The solar panels will alter where rainfall is directed and soil moisture will accumulate where the rainfall is directed off the panels. Instead of rainfall being distributed evenly, rain that falls on the panels will be concentrated to small areas just below the panels. Although the uneven spread in rainfall may further reduce the growth of pasture overall, it is likely to stimulate pasture growth in the area where rainfall is directed and where soil moisture is retained because of the shading effect of the solar panels.

Should stock be used to control grass sward length on the farm, sheep would be preferable to cattle as they would be less likely to damage solar panel infrastructure. Some of the farm infrastructure may need to be upgraded including ensuring that all fences are stock proof for sheep and possibly some improvements to the stock water system.

5.2 Weeds

Weeds as a result of the development of the solar farm are likely to be largely dependent on the management of the pastures after the solar farm has been established. It is probable that weeds will establish in disturbed soils from the installation of power cables and solar panels. It is unlikely that the solar panels will directly cause a weed problem, but weeds may invade pastured areas because of the soil disturbance involved during panel installation. Weeds will grow in and around pastures as is the case on the farm in its present state. A monitoring program is required to determine weed control strategies. A weed management plan will be required and this will be best designed after the construction phase is finished such that weed problems can be properly assessed through the monitoring program.

5.3 Impact of Solar Farm on Neighbouring Farms

While the installation of the solar panels is not expected to have any agricultural impact on the neighbouring farms it is possible that they may have a visual impact. A landscape plan has been prepared to designate plantings of trees to screen the panels from roadways, nearby dwellings and amenity areas..

5.4 The Agricultural Amenity of the Region and the District

The Australian Bureau of Statistics data for the Gippsland Region shows a significant and stable beef industry with around 470,000 head. Major regional saleyards are at Sale Bairnsdale, Leongatha, Warragul and Pakenham. Abattoirs are located at Moe, Trafalgar, Poowong and Pakenham. The regional beef herd is complemented by 630,000 head of sheep and the cull animals from the dairy industry, giving a gross value of meat production from the region of around $800m.

The Project will remove 108 hectares of grazing land from beef production (although it could still be partially used for sheep). The estimated carrying potential for this farm is an 80 cow weaner mother herd with total stock numbers on annual basis at 178 head. This is just 0.03% of the regional beef herd. The discontinuation of beef cattle grazing on this farm should not significantly impact upon local and regional beef supply or market competition.

The loss of this land for grazing of cattle should not affect the ability of the adjacent farms to operate efficiently. The adjacent farms appear to have unrelated production systems. It should not affect productivity of any of the adjacent properties.

If all the land were at a productive optimum, the estimated gross margin from a weaner mother beef herd for this land is around $600 per hectare per annum. The total gross margin could be as high as $65,000. This is insufficient farm income to support one labour unit, and the farm would need to be operated by part time labour and with other income sources to remain as an economically viable entity. While this income would no longer be available from The Project, this loss of income is offset by the income from the renewable energy facility and by the employment of operation and maintenance staff to manage the facility. There would be additional employment of contractors during the construction phase. The net impact at a district level should be neutral

6 Environmental Risks

6.1 Soil Erosion

The nature of the landscape in which this farm resides means that there is a low overall risk of erosion from the development of The Project. As a result of a predominately flat landscape the only area that is at medium risk of erosion is the natural waterway crossing through the south western corner of the property. While this waterway currently shows good structural integrity, the solar array will require a spatial separation from the embankments. With careful design and management of runoff as discussed in the paragraph below, it should be possible to achieve an outcome whereby there are no heightened flows from runoff into the drain and thus no higher risk erosion within this waterway than with the current agricultural enterprise.

The design and management of the surface water requires special consideration. In the first instance, the runoff of water from the panels may result in degradation of the soil below the panels where the water falls. The panel will tend to concentrate runoff as both an impact and an increased flow into a relatively small area. The degree of concentration will depend on the size of the panels, with smaller panels providing a lower level of risk than larger panels. These soils are not considered to be excessively prone to impact damage or dispersion. However, it would be prudent to consider placing crushed rock below each panel where water falls to

absorb the impact energy of the rain splash, and also to help disperse the runoff across the soil surface rather than allowing concentrated flows within a small area. With impact damage minimized, it will also be prudent to introduce measures that will retard surface runoff and increase infiltration. The total area of panels is substantial and the runoff from storm events will be concentrated by hard surfaces. It is undesirable to allow the higher flows to move directly into the drainage system in the south western corner of the property as the waterway may not be able to cope with higher erosivity of the flood flow. The surface runoff needs to be dispersed and retarded as far as is practically possible around the property so that no higher volume of storm runoff occurs within any natural or manmade waterway.

While the design of The Project needs to consider soil erosion risks and mitigate against this appropriately, it would also be prudent to incorporate a soil loss and land degradation review into the monitoring program. Other measures to prevent soil loss can be introduced if the design needs modification. An annual review for the first five years of operation would be appropriate.

6.2 Wildfire

The location of the property within a dry climate gives it an inherent risk of fire damage. Bush fires are a common occurrence during Australian summers and occur more easily in dry areas where fuel (dry plant matter) for a fire is readily available.

The key to fire management is to manage fuel loads, so that if fire does occur it is of low intensity and controllable. It will be important to consider how this is done and a number of options are available. One option would be to graze under the panels with sheep, ensuring that the sheep are unable to damage the panels as part of the initial design. This may mean preserving some of the existing farm infrastructure so that stock water can be reticulated around the farm. Another option would be to use chemical weed control to suppress vegetation within and around the panel areas. A third option would be to mulch the soil with rock or some other substances that will suppress or severely limit plant growth beneath the panels. The increased electrical infrastructure may result in higher risk of ignition, but the fuel load management is critical to how a fire, once started, is controlled.

6 Conclusions and Summary

- The subject land comprises a contiguous area of 108 hectares of farm land at Glengarry North and is currently utilised for grazing.
- There are no inherently unique features about the subject land that distinguish it from neighbouring farms in the area.
- The climate of the area is notable for warm summers, cool winters, moderately low annual rainfall, and frost incidence in winter.
- Some remnant native vegetation remains within the property. The property has mostly been cleared. However approximately 12 red gums remain within the property and they are likely to be remnants of the former natural vegetation association. Natives trees have been recently planted in approximately 4 km of shelter belts.
- The landform is a flat plain and is part of the extensive landscape of the Eastern Lowlands of the Gippsland Lakes Catchment.

- The soil types present are noted for low permeability and have imperfect drainage.
- The development of a solar farm on the property will alter the nature of the farm. Grazing with cattle will no longer be practical. With appropriate design of the panels and improvements and redesign of the stock water system, sheep may be able to graze the land. The carrying capacity of the farm may be reduced.
- There are no detrimental impacts of the development of the solar farm to the surrounding farm businesses. The impacts to the agricultural amenity of the Region are not significant.
- The concentration of runoff from the panels onto the soil surface may initiate soil erosion and streambank erosion. Consideration needs to be given to minimizing this risk in the design stage. A monitoring and review program is required.
- Heightened wildfire risk will occur if attention is not given to how fuel loads on the farm are managed. Fuel load management needs to be considered as part of the project design.