



## **SOUTHERN DOWNS REGIONAL COUNCIL SPECIAL MEETING OF COUNCIL**

Dear Councillors

Your attendance is hereby requested at the Special Meeting of Council to be held in the Council Chambers, Southern Downs Regional Council, 64 Fitzroy Street, Warwick on **Wednesday, 6 June 2018 at 2:00PM**.

Notice is hereby given of the business to be transacted at the meeting.

**David Keenan**

**CHIEF EXECUTIVE OFFICER**

30 May 2018



**ORDER OF BUSINESS:**

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              Freestone Road and Jensens Road, Sladevale ..... 2




1. **ATTENDANCE**
2. **APOLOGIES**
3. **DECLARATIONS OF CONFLICTS OF INTEREST**

#### 4. PLANNING, ENVIRONMENT & CORPORATE SERVICES DEPARTMENT REPORTS

##### 4.1 Material Change of Use - Terrain Solar Pty Ltd, Gleesons Road, Freestone Road and Jensens Road, Sladevale

###### Document Information

 <b>Southern Downs</b> REGIONAL COUNCIL	<b>Report To: Special Council Meeting</b>	
	<b>Reporting Officer:</b>	<b>Meeting Date:</b> 6 June 2018
	Acting Development Assessment Coordinator	<b>ECM Function No/s:</b> MCU\01964

<b>APPLICANT:</b>	Terrain Solar Pty Ltd
<b>OWNER:</b>	Glenn B Eastwell & Deanna G Eastwell, Grace T Smith and Robert L Fromm
<b>ADDRESS:</b>	Gleesons Road, Jensens Road, Robinson Road and Freestone Road, Sladevale
<b>RPD:</b>	Lots 1, 4 & 5 RP36424, Lot 416 SP141378, Lots 417 & 418 W3010, Lot 415 SP279264, Parish of Warwick
<b>ZONE:</b>	Rural
<b>PROPOSAL:</b>	Renewable energy facility (Solar farm)
<b>LEVEL OF ASSESSMENT:</b>	Code
<b>SUBMITTERS:</b>	Not applicable
<b>REFERRALS:</b>	Department of State Development, Manufacturing, Infrastructure and Planning

###### Recommendation Summary

THAT the application for Material Change of Use for a Renewable energy facility (Solar farm) on land at Gleesons Road, Jensens Road, Robinson Road and Freestone Road, Sladevale, described as Lots 1, 4 & 5 RP36424, Lot 416 SP141378, Lots 417 & 418 W3010, Lot 415 SP279264, Parish of Warwick, County of Merivale, be approved subject to conditions.

###### Report

The land subject to this application is located within the Rural zone, and has frontage to Freestone Road which is a State Controlled road of a bitumen seal standard, Robinson Road and Gleesons Road which are both formed gravel roads, Jensens Road which is a formed road but is only partly constructed to a gravel standard and McMahons Road which is unconstructed in this location (refer to Figure 1 – Site Layout).

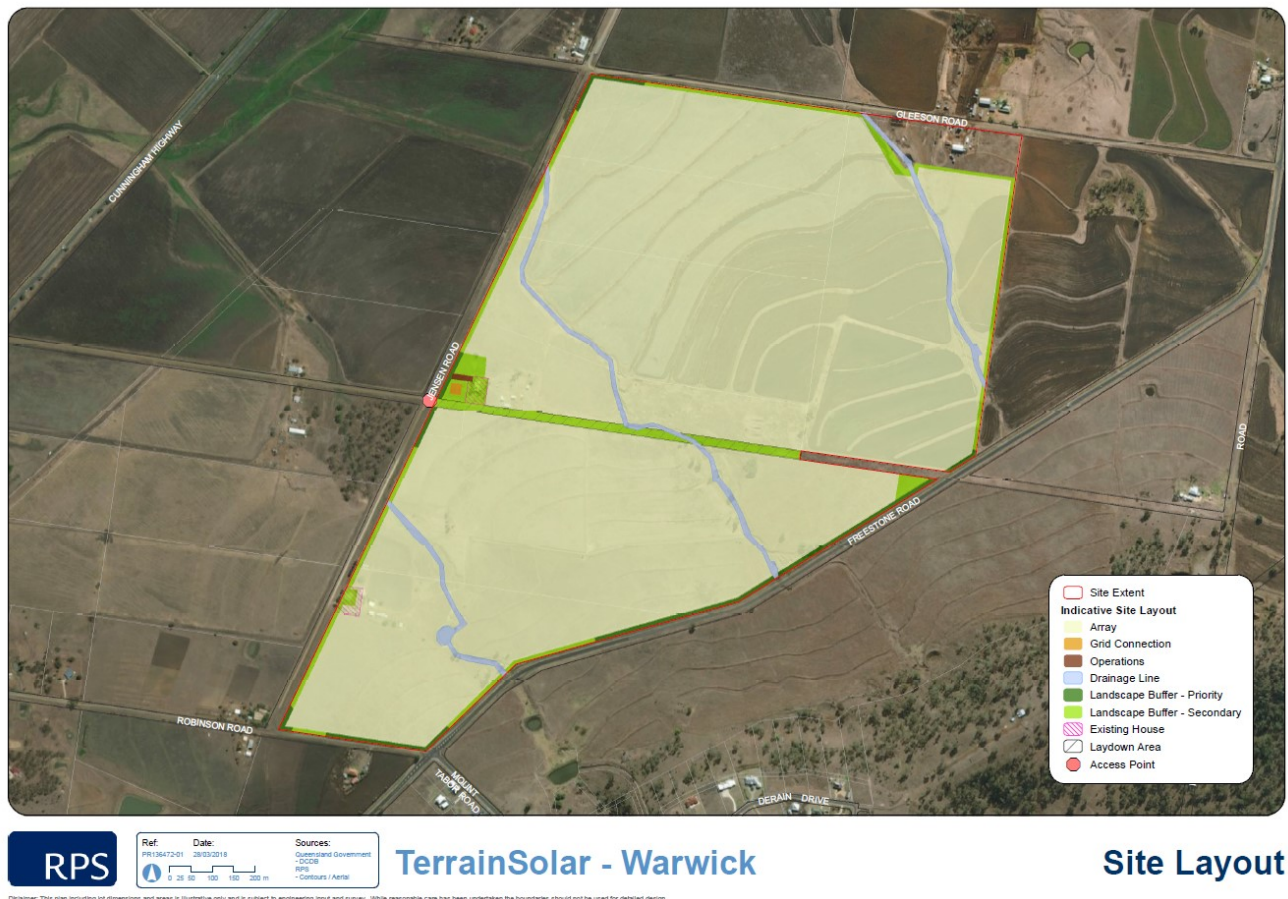
The majority of the subject land is identified within the Alluvial Plains Precinct (Purple), and lesser portions to the south within the Basalt Uplands Precinct (Brown) and a small portion to the southwest corner within the Basalt Quality Grazing Precinct. The current predominant agricultural use of the land is for cropping (refer to Figure 2 – Rural Precincts).

The land is not located within the Bushfire hazard overlay, does not contain remnant vegetation, and is not identified within the Biodiversity overlay.

The proposed Renewable Energy Facility (Solar Farm) is seeking to produce approximately 70MW of electrical generation capacity through the solar panel array. The proposed Solar Farm includes the following components:

- electrical operational componentry, comprising inverters located at multiple positions in the array;
- a switching station to enable high voltage export; and
- an operations building to provide control systems.

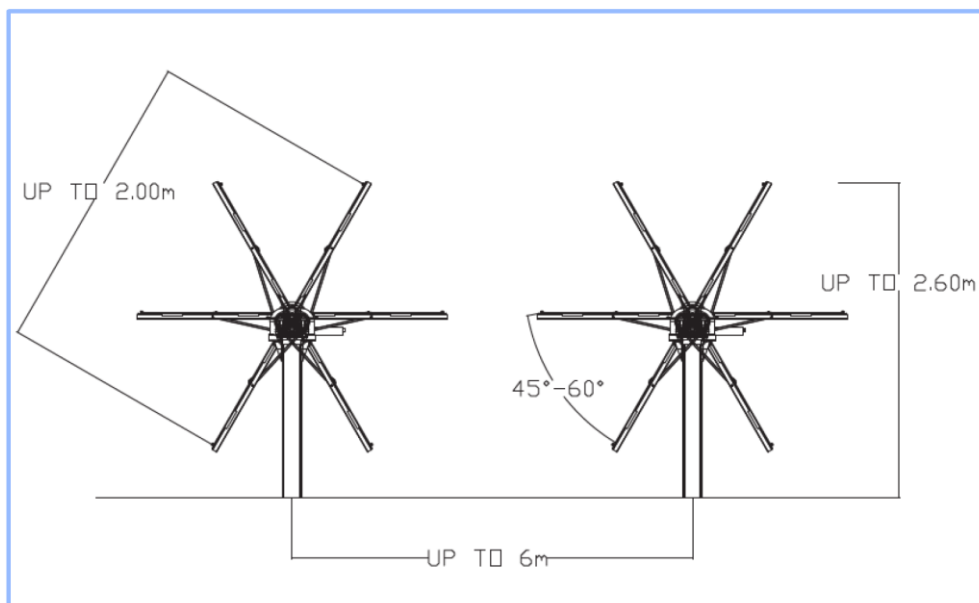
The existing dwelling located on Lot 1 on RP36424 will be retained, with the farm sheds removed during the construction phase.



**Figure 1 Site Layout**



**Figure 2 Rural Precincts** - Alluvial Plains Precinct (Purple), Basalt Uplands Precinct (Light Brown) and Basalt Quality Grazing (Small section in southwest corner).



### Figure 3 Typical design for tracker mount system

Inverters will convert the direct current (DC) to alternating current (AC), and transformers will increase the voltage to allow for export into the grid. The Solar Farm may have up to 20 inverter stations positioned throughout the solar array. The AC collection system will consist of cabling at high voltage which will connect each inverter station to the site substation / switching station, which then provides the external connection.



The switching station will comprise of a secure compound with several items of electrical equipment and supporting structures, including battery storage. The equipment and structures will be installed on concrete foundations within a benched gravel area free of vegetation.

The planning report submitted by the applicant provides the following graphics to describe the single axis tracker mounts system and the inverter station that will be utilised in the proposed Solar Farm.



**Figure 4 Proposed single axis tracker mount system**



**Figure 5 Proposed Invertor Station**

The proposed Solar Farm includes a substation, an operations and maintenance building, which will contain a small office area, communication and monitoring equipment, parking for staff and storage for spare parts and equipment.

Electricity generated by the solar array will be exported into the network through connections between the site and the Energy Queensland's Warwick substation located on the corner of Ogilvie Road and East Street.

Due to the configuration of the substation, the development requires the creation of two transmission line connections to the Warwick Substation (refer to Figure 6 - Local Area Site Plan).

The transmission lines will be located in the relevant road reserves:

- Route one runs west along McMahons Road then south along the Cunningham Highway and East Street to the Warwick substation.

Review of the Cunningham Highway corridor (from McMahons Road to East Street) indicates the existing presence of electrical infrastructure within the eastern side of the road, with a considerable separation from the carriageway.

New or replacement poles required to accommodate the new transmission lines are able to use this alignment; and

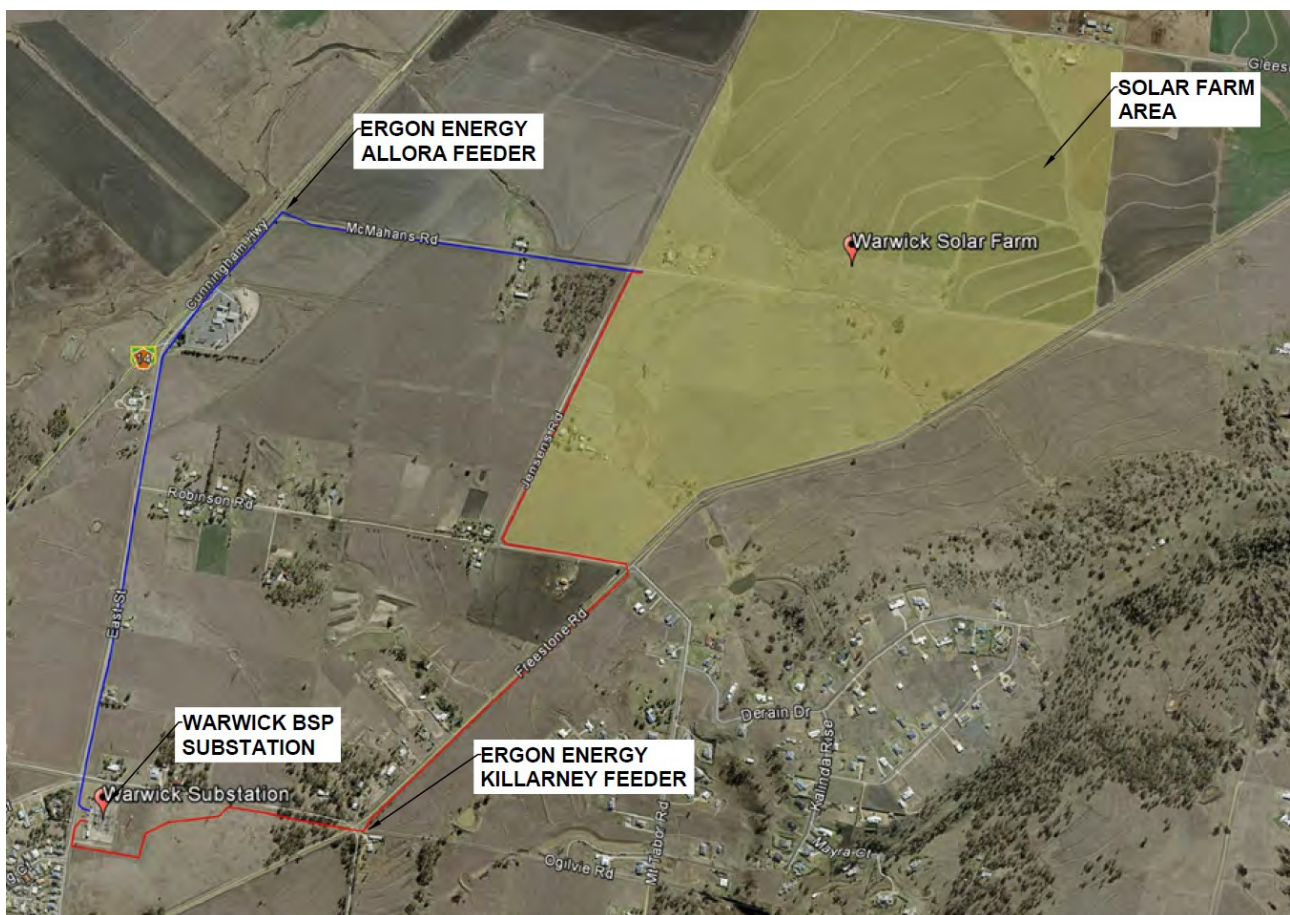
- Route two runs south along Jensens Road, east on Robinson Road and south on Freestone road, before turning west to the substation via Ogilvie Road.

Review of Freestone Road (from Robinson Road to Ogilvie Road) indicates existing electrical and telecommunications lines on the western side of the road from Ogilvie Road serving the adjacent houses.

The road corridor does not narrow further north of this, and accordingly sufficient separation is likely to exist for the installation of new infrastructure on the western side of the road.

Responsibility for construction of this infrastructure is subject to commercial negotiations between Terrain Solar and Energy Queensland (Ergon). Approval for construction of these transmission lines is not sought in this application.

Subject to the agreed delivery responsibility, the relevant party will seek and will require subsequent approvals from Council and Department of Transport and Main Roads as necessary.



**Figure 6 Local Area Site Plan**

The overall site coverage of the proposed Solar Farm is estimated to be approximately 30% of the subject land, with spacing between solar panel rows (row to row separation) of approximately 2.5 metres. An example of the solar panel array design proposed for the subject land has been completed in Parkes, New South Wales, as shown in Figure 7 below.





**Figure 7 Example of solar panel array – (The Parkes NSW Solar Farm - 66MW)**

### ***Assessment category for proposal***

An application was lodged with Council for a Renewable Energy Facility (MCU\01941) over the same property parcels (by the applicant) on 24 January 2018 and considered properly made on the 31 January 2018.

This application was made under the previous version of the Southern Downs Planning Scheme (the Planning scheme) which categorised the proposal as being Impact Assessable development. Major amendments to the Planning Scheme were adopted by Council on 12 March 2018 and commenced on 16 March 2018.

The application (MCU\01941) was withdrawn on 4 April 2018.

The current application (MCU\01964) for a Renewable energy facility (Solar farm) was lodged on 3 April 2018 at which time the assessment category for Renewable energy facilities was Code Assessment. The following timeline is the formal process that occurred in relation to amending the Planning Scheme:

- **25 February 2015**
  - Council proposes to make major amendments to the scheme;
- **2 March 2016**
  - Draft amendments sent to Minister requesting a State interest review;
- **15 November 2016**
  - Receipt of advice from Minister that Council may proceed to public consultation;
- **9 February to 31 March 2017**
  - Public consultation of proposed amendments occurred;
- **8 September 2017**
  - Final amendments sent to Minister requesting approval for Council to adopt;
- **20 February 2018**
  - Advice received from Minister that Council may proceed to the adoption of the amendments;

- **12 March 2018**
  - Amendments adopted; and
- **16 March 2018**
  - Amendments take effect.

### ***Referral***

The application was referred to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) as a Concurrence Agency. A response from DSDMIP was received on 24 May 2018 advising that they have no objections to the proposal.

The application was referred to Energy Queensland (Ergon Energy/Energex) as an Advice Agency on 12 April 2018. A response was received from Energy Queensland on 19 April 2018 advising that they have no objections to the proposal.

### ***Public Response***

The *Planning Act 2016* determines when an application is required to be publicly advertised based on the Categories of Assessment. Section 53 of the *Planning Act 2016* states the following:

#### ***53 Publicly notifying certain development applications***

- (1) An applicant must give notice of a development application if—*
- (a) any part of the application requires impact assessment; or*
  - (b) the application includes a variation request.*
- (2) The notice must be given in the way or ways stated in the development assessment rules.*

This application is a Code Assessable application and therefore public notification is not required to be carried out. Notwithstanding this, a public meeting has been held on 14 May 2018 providing members of the public (local residents and others) a forum to express their views on the proposal. The critical issues canvassed at the forum and brought forward to Council subsequent to the public meeting (in order of priority), and mentioned in the 47 letters received by Council objecting to the proposal, include the following:

- Visual impacts and associated glare/reflection
- Removal of Class A agricultural land from production
- Stormwater management – surface water discharge
- Devaluation of freehold property adjacent the Solar farm
- Traffic management and access
- Heat island affects from the solar panel array
- Noise impacts from tracking devices

It is noted that two letters in support of the proposal were received.

The planning report submitted by the applicant was accompanied with the following studies that address the likely impacts from the proposed Solar farm:

- Traffic impact assessment - Appendix F;
- Stormwater management report - Appendix G;
- Visual Amenity Assessment - Appendix H;
- Noise impact assessment - Appendix I ; and
- Glare Assessment - Appendix J.

The applicant has also addressed the relevant State Development Assessment Provision codes (Appendix K) and the Planning scheme code responses (Appendix L).

## **Assessment against the Planning Scheme**

The *Planning Act 2016* (the Act) determines the relevant assessment provisions for Code assessable development. It is important to note the limitations set for Council to assess this proposed Renewable Energy Facility under the Act. Section 45 of the Act (*Categories of assessment*) stipulates limitations to Code assessable development as follows:

- (3) *A code assessment is an assessment that must be carried out only—*
  - (a) *against the assessment benchmarks in a categorising instrument for the development; and*
  - (b) *having regard to any matters prescribed by regulation for this paragraph.*
- (4) *When carrying out code assessment, section 5(1) does not apply to the assessment manager.*

It is important to note the definition of a “*categorising instrument*” (Planning scheme), “*assessment benchmark*” and the reference to Section 5(1) which describes how the Act determines which matters are considered as advancing the purpose of Act.

Section 5(1) states: *An entity that performs a function under this Act must perform the function in a way that advances the purpose of this Act.*

The Act provides the following guidance on the matters defined as advancing the purposes of the Act:

- (a) *following ethical decision-making processes that—*
  - (i) *take account of short and long-term environmental effects of development at local, regional, State and wider levels; and*
  - (ii) *apply the precautionary principle, namely that the lack of full scientific certainty is not a reason for delaying taking a measure to prevent degradation of the environment if there are threats of serious or irreversible environmental damage; and*
  - (iii) *seek to provide for equity between present and future generations; and*
- (b) *providing opportunities for the community to be involved in making decisions; and*
- (c) *promoting the sustainable use of renewable and non-renewable natural resources, including biological, energy, extractive, land and water resources that contribute to economic development through employment creation and wealth generation; and*
- (d) *valuing, protecting and promoting Aboriginal and Torres Strait Islander knowledge, culture and tradition; and*
- (e) *conserving places of cultural heritage significance; and*
- (f) *providing for housing choice, diversity and affordability; and*
- (g) *encouraging investment, economic resilience and economic diversity; and*
- (h) *supplying infrastructure in a coordinated, efficient and orderly way; and*
- (i) *applying amenity, conservation, energy use, health and safety in the built environment in ways that are cost-effective and of public benefit; and*
- (j) *avoiding, if practicable, or otherwise minimising the adverse environmental effects of development (climate change, urban congestion or declining human health, for example).*

Council must decide the application in accordance with Section 60 of the *Planning Act 2016* which states as follows (emphasis added):

### **60 Deciding development applications**

- (1) *This section applies to a properly made development application, other than a part of a development application that is a variation request.*
  - (2) *To the extent the application involves development that requires code assessment, and subject to section 62, the assessment manager, after carrying out the assessment—*
    - (a) *must decide to approve the application to the extent the development complies with all of the assessment benchmarks for the development; and*
    - (b) *may decide to approve the application even if the development does not comply with some of the assessment benchmarks; and*
- Examples—*

- 1 An assessment manager may approve an application for development that does not comply with some of the benchmarks if the decision resolves a conflict between the benchmarks.
  - 2 An assessment manager may approve an application for development that does not comply with some of the benchmarks if the decision resolves a conflict between the benchmarks and a referral agency's response.
- (c) may impose development conditions on an approval; and
- (d) may, to the extent the development does not comply with some or all the assessment benchmarks, **decide to refuse the application only if compliance can not be achieved by imposing development conditions.**

*Example of a development condition for paragraph (d)—*

*a development condition that affects the way the development is carried out, or the management of uses or works that are the natural and ordinary consequence of the development, but does not have the effect of changing the type of development applied for*

The review of this development application, planning report and associated studies has focused on the key requirements of the “Performance outcomes” and “Acceptable outcomes” of the Planning scheme codes, taking into account those matters of State interest that have been included within the Tables of assessment, Development codes, Zone codes, relevant Overlays and the Adopted infrastructure charges resolution.

It is also important to note that the Act states at Chapter 3, Part 1, Section 43(2) an assessment benchmark does not include the following:

- (a) a matter of a person's opinion; or
- (b) a person's circumstances, financial or otherwise; or
- (c) for code assessment—a strategic outcome under section 16(1)(a); or
- (d) a matter prescribed by regulation.

Note: Section 16(1)(a) provides:

- identify strategic outcomes for the local government area to which the planning scheme applies

### **Assessment against the benchmarks**

This application required assessment against the following benchmarks:

- Rural zone code
- Carparking and loading code
- Landscaping code
- Outdoor lighting code
- Physical infrastructure code

### ***Rural zone code***

#### **6.2.10.2 Purpose**

(1) *The purpose of the Rural zone code is to:*

- *provide for rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities*
- *provide opportunities for non-rural uses that are compatible with agriculture, the environmental features, and landscape character of the rural area where the uses do not compromise the long-term use of the land for rural purposes*
- *protect or manage significant natural resources and processes to maintain the capacity for primary production.*

#### **Performance outcome PO1 (Use)**

- *The rural or natural environment character of the land is retained.*
- *Uses established in the Rural zone do not conflict with rural land uses or the natural, scenic and community values of the area.*

### **Acceptable outcomes AO1**

- *No acceptable outcome identified.*

### **Assessment against PO1:**

- *The rural or natural environment character of the land is retained.*

The proposed Solar farm does have a degree of impact on the 'rural or natural environment character of the land', however the proposed use is not considered to be removing these values completely from the land. The extent of land surrounding the proposal site that retains these rural values that are integral to the area is considerable. There are likely to be direct impacts within the site boundaries, however the proposal does not remove entirely or promote a permanent displacement of these characteristic elements of the natural landscape.

- *Uses established in the Rural zone do not conflict with rural land uses or the natural, scenic and community values of the area.*

The proposed Solar farm is not a typical rural land use, conflict with the rural land uses within the site are lessened with the intended use of sheep to manage grass growth. In addition the temporary (albeit lengthy time frame) nature of the development and its limited land impact in terms of construction requirements (frames screwed/piled not concreted) provides some surety that the conflict with rural uses is able to be fully remediated following closure of the facility.

Due to their scale and design, solar farms are restricted in terms of siting and location to land designated for rural purposes. The conflicts with natural, scenic and community values are more a product of the scale and design of this type of Renewable energy facility, though wind farms are known to produce more significant visual and audible impacts to surrounding sensitive land uses.

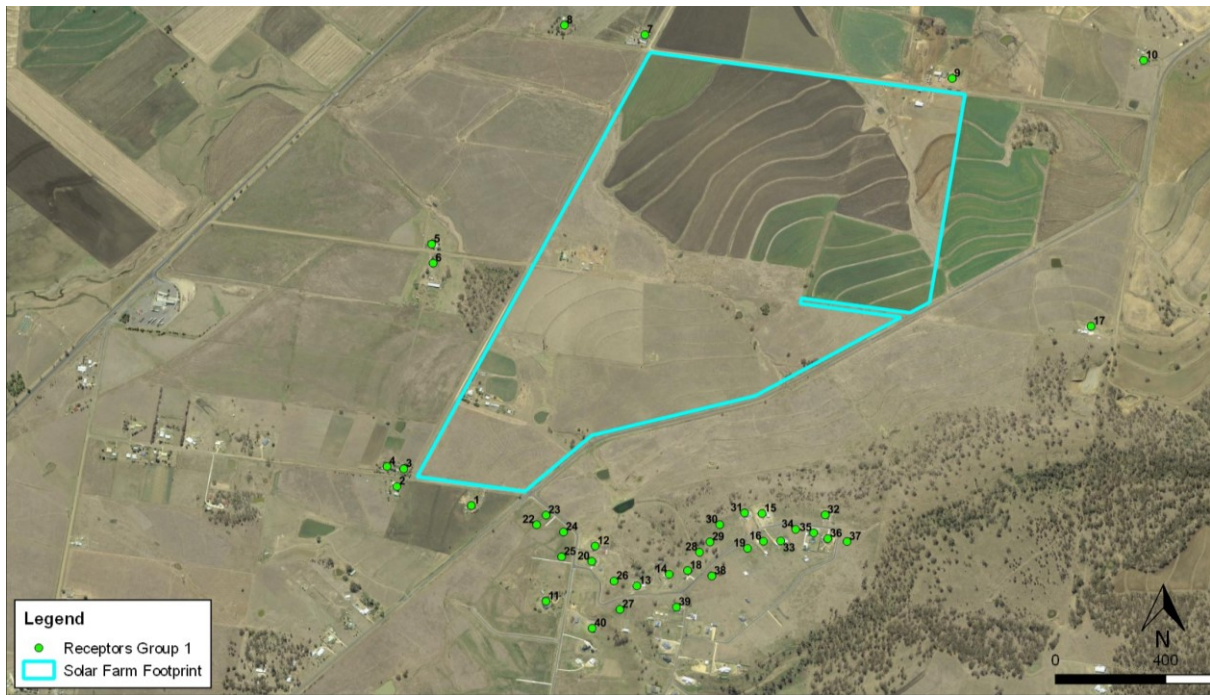
When assessing impacts to the natural and scenic value there is a need to review the existing impacts from rural land uses in this regard. Orchards that are netted to protect crops provide a similar aspect visually, though it could be said that netting is more intrusive; particularly when damaged by weather events. The scale of the activities is also similar, and though large scale Solar farms can extend beyond the size of orchards, their scenic values are more uniform and less obtrusive in comparison.

The applicant has provided an assessment of the potential for the proposed solar panels to create glare. The glare analysis was prepared using the ForgeSolar 'GlareGauge' glare analysis tool, a technology that meets the United States Federation Aviation Administration (FAA) standards and guidelines and Australia's Civil Aviation Safety Authority (CASA) for assessing potential glare impacts of solar farms in proximity to airports. The study states:

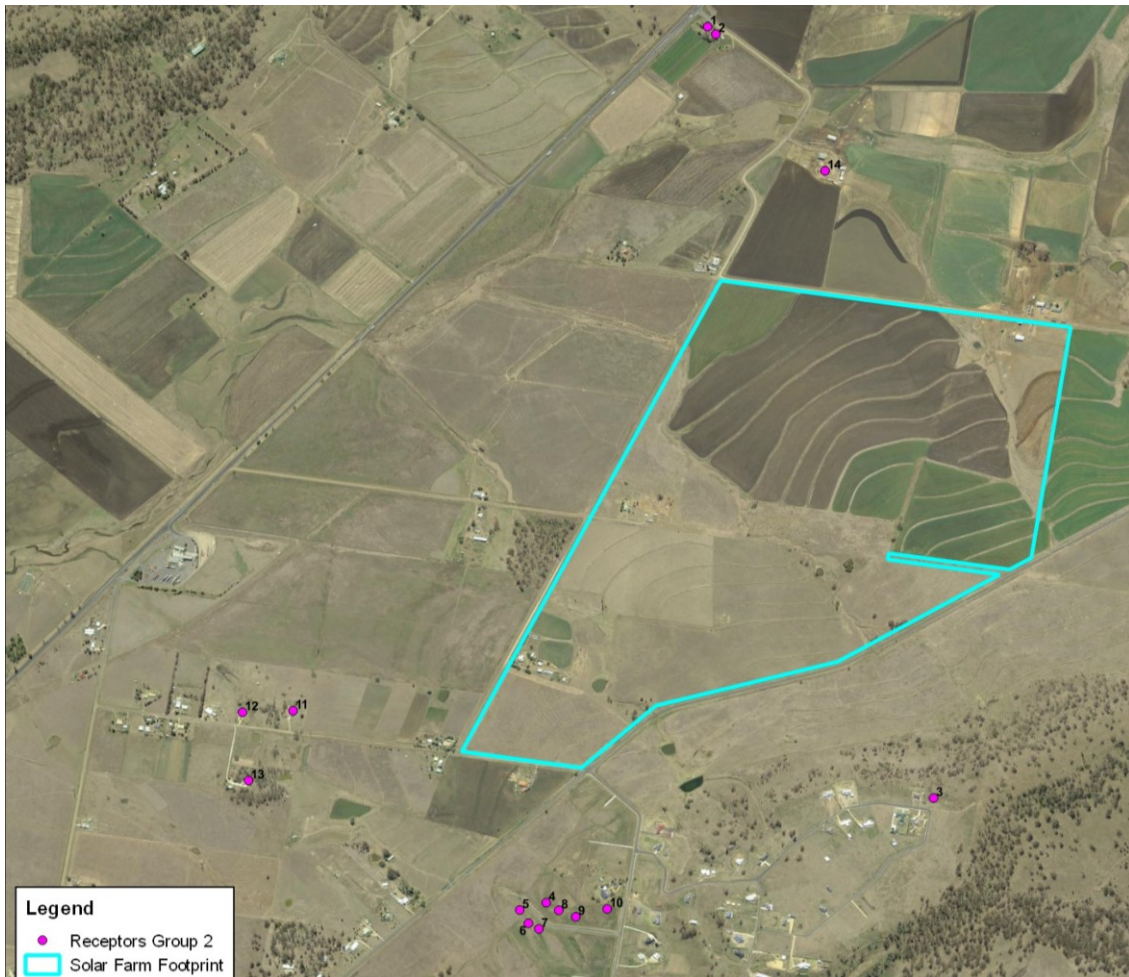
- *"GlareGauge computes the potential for glare for flight paths and ground based receptor points (<https://www.forgesolar.com/tools/glaregauge/>)."*

The glare assessment asserts that the results are a conservative analysis as *"GlareGauge does not account for the mitigating effects of physical obstructions between the solar arrays and the receptor. These obstructions include buildings and vegetation"*. The glare assessment involved two main groups identified as residents and motorists, the resident groups are shown below:





**Figure 8 Group 1 Receptors**



**Figure 9 Group 2 Receptors**

The results of the glare analysis across all receptor groups indicated that no glare is predicted to occur as a result of the proposed Solar Farm.

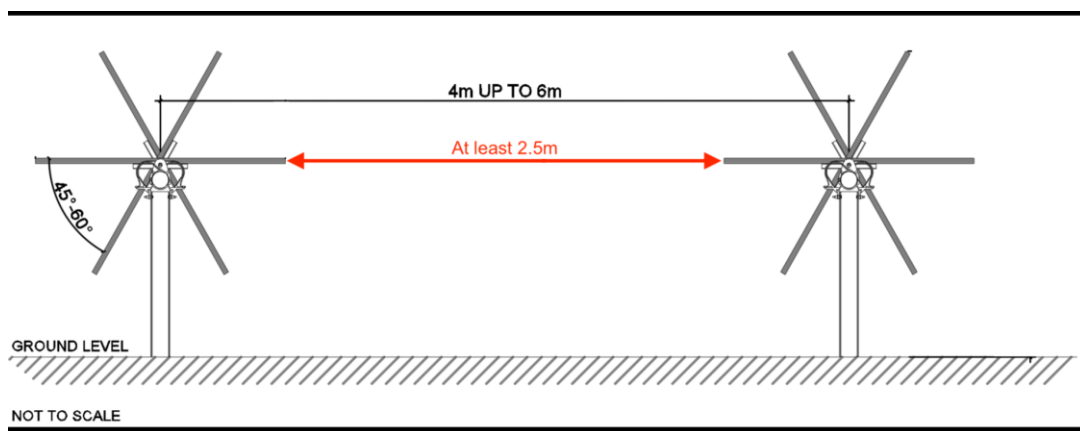
In terms of community values, it is acknowledged through representations to Council, that the local community anticipates there will be visual impacts associated with the Solar farm. There is a need



therefore to address the impacts to these values and impose conditions to mitigate the impacts of the development. The following requirements will be imposed to provide appropriate treatments to the landscape to protect community values:

- Minimum separation distances between panels (in horizontal form) of at least 2.5 metres across the entire Solar farm;
- No solar panels are to be installed within a distance of approximately 200 metres from the southern boundary (Johnsons Road) to ensure sufficient separation from sensitive land uses; and
- Planting of native vegetation (large trees and shrubs) along the southern boundary of the site, included within the 200 metre buffer (Jensens Road, Robinson Road and Freestone Roads).

The separation distance between the panels (refer to Figure 10) coupled with the 200 metre buffer to the south (refer to Figure 11) will ensure a site coverage ratio of approximately 30% (Solar farm) to 70% (remaining land). Vegetation within the southern portion to a suitable scale will assist to protect the scenic values of those residents most impacted by the proposed Solar Farm.



**Figure 10 Spacing of panels to 2.5m minimum**



**Figure 11 Minimum 200m buffer southern boundary**

### **Performance outcome PO2**

- *Rural activity on land is protected from conflict with other uses that are not rural uses.*

### **Acceptable outcomes AO2**

- *No acceptable outcome identified.*

*Note: One way an applicant may demonstrate compliance with this performance outcome is to provide a buffer that meets the design criteria contained in PO9 of the Landscaping code.*

### **Assessment against PO2:**

The proposed Solar farm will not impact on the rural use of other land.

### **Performance outcome PO3**

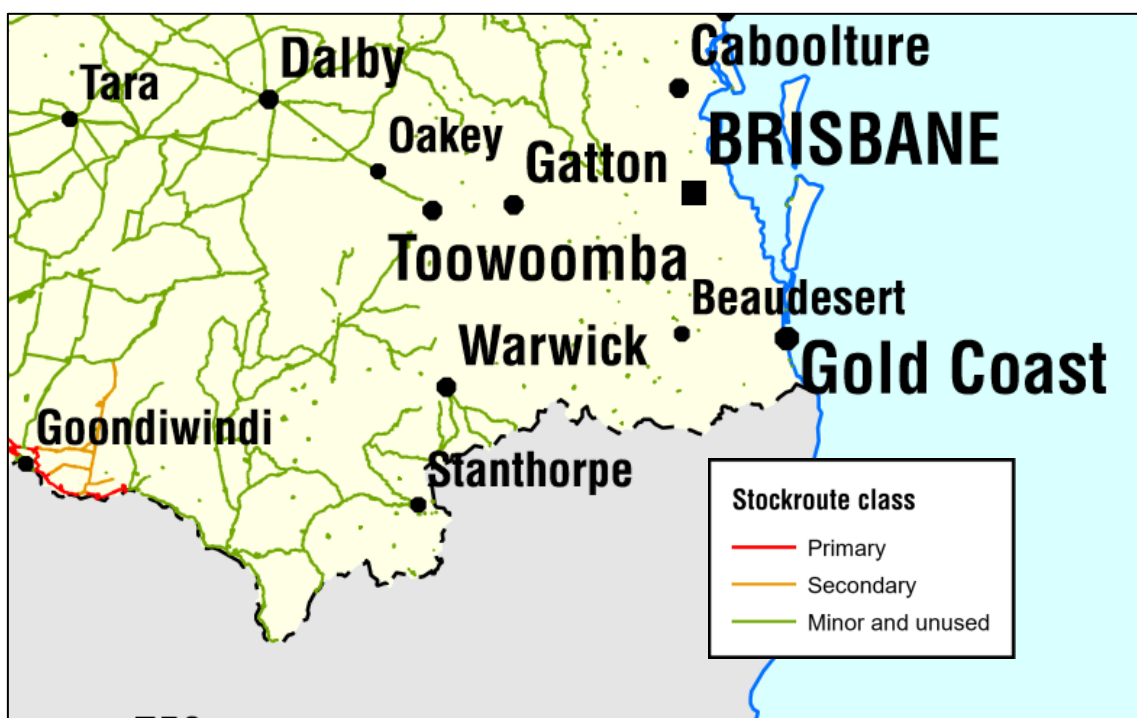
- *Development does not adversely impact on the function, connectivity and pasture productivity of the stock route network.*

### **Acceptable outcomes AO3**

- *No acceptable outcome identified.*

### **Assessment against PO3:**

A review of the Queensland Stock Route Network confirms the proposal provides no impacts to the existing network; of which only several minor and or unused routes exist in the Southern Downs Region (refer to Figure 12).



**Figure 12 Queensland Stock Route Network (November 2016)**

### **Performance outcome PO4 (Access)**

- *The safe and efficient operation of roads and access is maintained having regard to the nature of vehicles using the road, the location of uses that may be adversely affected by noise or dust generated by the use of the road and the location and design of access.*

### **Acceptable outcome AO4.1**

- *All uses are on lots that have frontage to a constructed road.*

### **Acceptable outcome AO4.2**

- *Uses ... have access to the Region's road network via fully constructed sealed roads from the property boundary.*

## Assessment against PO4:

Traffic and transport requirements for the proposed Solar farm, once operational, will be significantly less than the typical agricultural or rural land activity. The major impact on the roads within the area will be during the construction phase, which is estimated to be a 12 month timeframe.

The applicant has provided a Traffic Impact Assessment Report (Report No. RPS0030-R01 – Premise Mackay Pty Ltd) dated 28 March 2018, which responds to the performance outcomes PO20 to PO22 of the State Code 1: Development in a State-Controlled Road Environment. This report also has relevance to the assessment of impacts to Performance outcome PO4 of this Code.

Expected traffic and transport impacts will peak for a period of approximately six months, where it is estimated 50 return heavy vehicle movements and 140 return light vehicle movements to the site per day; with heavy vehicles assessed being 19 metre Semi-trailers (not B-double vehicles).

Site access was analysed from five candidate routes, with the proposed route (Option 5) chosen to avoid the need to mitigate upgrade work to the Cunningham Highway intersection with Freestone Road and reduce the total route length and use of unsealed roads. The five site access route options are shown in the table below (refer to Haulage route options analysis), the preferred route is shown in Figure 13.

RPS-0030 Warwick Solar Farm

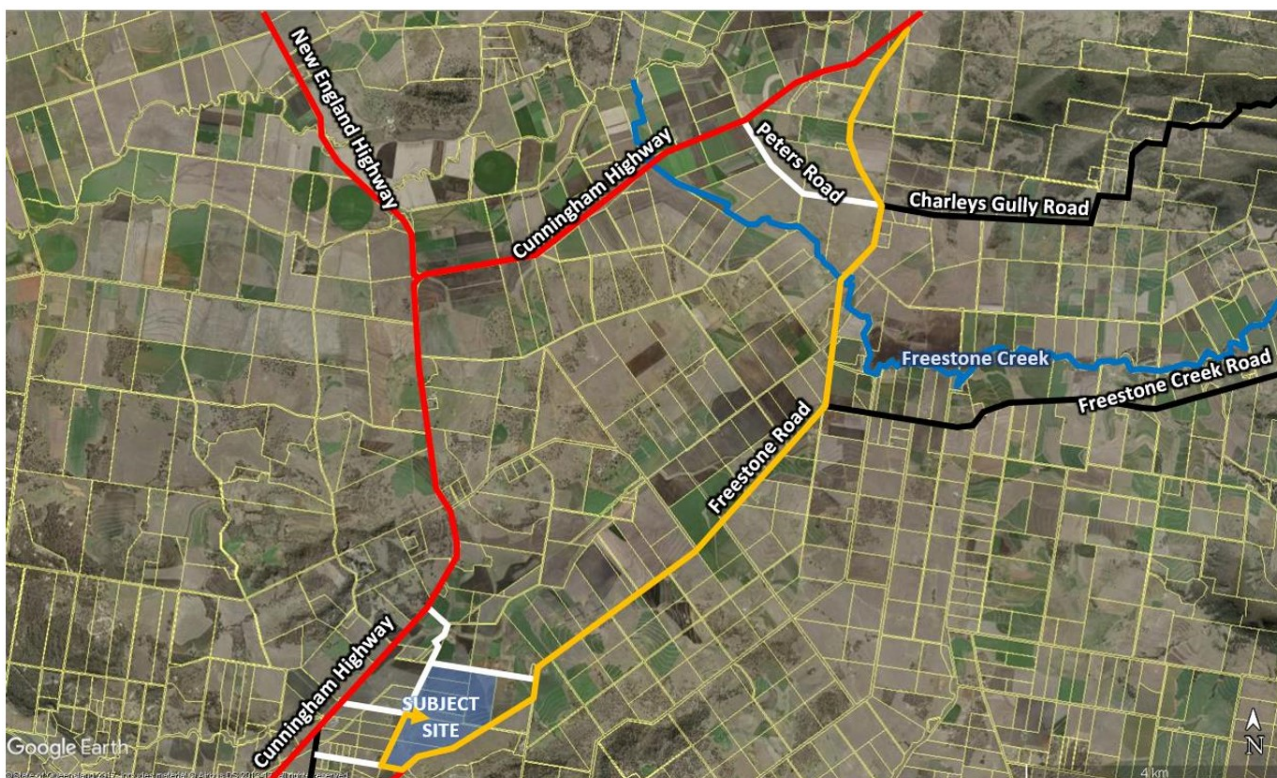
Haulage Route Option	1	2	3	4	5
Cunningham Highway turnoff approximate chainage	120km	122km	122.5km	124km	106km
Cunning Highway intersection treatment	Priority (give way) T-intersection BAL / CHR	Priority (unsigned) T-intersection BAL / BAR	Priority (give way) T-intersection AUL / CHR	Priority (give way) crossroads BAL / CHR	Priority (give way) T-intersection AUL / BAR
Route	Jensen Road	McMahon Road	East Street Robinson Road Jensen Road	Ogilvie Road Freestone Road Robinson Road Jensen Road	Freestone Road Robinson Road Jensen Road
Total length from Cunningham Hwy Chainage 106km	16km	17km	19km	21.5km	16.5km
Length from Cunningham Highway	1.9km	1.0km	2.5km	3.6km	16.5km
Length of SCR significantly impacted	Intersection only	Intersection only	Intersection only	1km	9km
Unsealed length (LGRs)	1.9km	1.0km	1.9km	1.8km	1.3km
Length of SCR used after Cunningham Hwy Chainage 106km	14km	16km	16.5km	19km	9km
Crashes since 2000	One (1) property damage only	One (1) hospitalisation	Six (6) including three (3) hospitalisation	Four (4) including two (2) medical treatment	23 including seven (7) hospitalisation
Comments	May require AUL(S) on Cunningham Highway. May be lengthy delays to B-doubles turning right onto Cunningham Highway. No significant pavement impact on SCR network. Least likely to require mitigation of road safety impacts. Route upgrade to accommodate B-doubles may not be possible within the existing road reserves. Low risk of dust nuisance to residences.	May require AUL(S) on Cunningham Highway. May be lengthy delays to B-doubles turning right onto Cunningham Highway. No significant pavement impact on SCR network. Medium road safety risk but unlikely to require mitigation. Left turn from Cunningham Highway to McMahon Road may not be able to accommodate B-doubles. Least risk of dust nuisance to residences.	Right turn from East Street to Cunningham Highway may not operate safely and efficiently under priority control. No significant pavement impact on SCR network. Medium road safety risk which may require mitigation. Cunningham Highway / East Street intersection approved for use by B-doubles. Greatest risk of dust nuisance to residences.	May require AUL(S) on Cunningham Highway. Right turn from Ogilvie Road to Cunningham Highway may not operate safely / efficiently under priority control. Local government may require Ogilvie Road between East Street and Freestone Road to be upgraded / sealed. Worst compliance with PO21. Low road safety risk but likely to require impact mitigation. Left turn from Freestone Road to Robinson Road will probably require upgrading and it may not be able to accommodate B-doubles. Low risk of dust nuisance to residences.	Cunningham Highway / Freestone Road intersection probably has sufficient capacity to accommodate B-doubles with acceptable delays. Likely to result in greatest contribution to TMR to mitigate pavement impacts. Best compliance with PO21. Most likely to require mitigation of road safety impacts. Route upgrade to accommodate B-doubles is not expected to impact on private land except for the proposed development site. Low risk of dust nuisance to residences.

### RECOMMENDATIONS (in priority order)

- (Preferred route) Option 5 via Freestone Road: Cunningham Highway intersection not expected to require upgrading to accommodate semi-trailers; Close to the minimum overall route length and best compliance with PO21; Contributions will be payable to mitigate pavement impacts on the state-controlled road network; Expect some mitigation of road safety impacts will be required.
- (Second choice) Option 2 via McMahon Road: Close to the minimum overall route length; Minimises use of lower order roads where pavement and dust nuisance impacts could be significant; Cunningham Highway intersection will require upgrading and may not be able to accommodate B-doubles.
- Option 3 via East Street: Existing Cunningham Highway intersection geometry suitable for use by B-doubles but may require capacity upgrading for right out movement; Not expected to significantly impact on SCR pavements but worst option for use of unsealed roads and risk of dust nuisance to residences.
- Option 1 via Jensen Road: Close to the minimum overall route length and not expected to significantly impact on SCR pavements but close to maximum length of unsealed roads used; Low risk of road safety and dust nuisance impacts; Cunningham Highway intersection will require upgrading and route may not be able to accommodate B-doubles.
- (Undesirable route) Option 4 via Ogilvie Road: Longest overall route length with close to maximum length of unsealed roads used and contributions payable to mitigate pavement impacts on the state-controlled road network; Expect the Cunningham Highway / Ogilvie Road and Freestone Road / Robinson Road intersections to require upgrading; route may not be able to accommodate B-doubles.

Notes: BAL (basic left turn); CHR (channelised right turn); BAR (basic right turn); AUL (auxiliary left turn)





**Figure 13 Proposed site access route**

Acceptable outcome AO4.2 requires the proposed Solar farm to gain access to the road network via a fully constructed sealed road at the property boundary. When the Solar farm is operational, there will be insufficient traffic associated with the use to justify the sealing of Robinson and Jensens Roads. Maintenance and watering will be required to alleviate dust emissions during the construction phase, and to provide safer access and egress for all vehicles. The following condition is suggested to mitigate the impacts from construction in accordance with this performance outcome.

- The section of Robinson Road from the intersection with Freestone Road and Jensens Road, and the section of Jensens Road from the intersection of Robinson Road to the site entrance, are to be maintained on a regular basis during construction, and a watering program for dust suppression to be incorporated within the construction environmental management plan.

**Performance outcome PO5 (Amenity, public health and safety)**

- *There are no significant adverse impacts on public health and safety with regard to:*
  - (a) *the siting scale and design of buildings or other works;*
  - (b) *waste water disposal;*
  - (c) *the permanent or temporary occupation of or access to areas subject to natural hazards.*

**Acceptable outcome AO5**

- *No acceptable outcome identified.*

**Assessment against PO5:**

Predominant impacts likely to affect public health and safety during the construction phase are dust, noise and traffic. The measures identified to address site access will alleviate the impacts to an acceptable level as the peak construction period will be for a maximum six month period. Impacts associated with the operational phase may include the risks associated with electro-magnetic radiation exposure from sources within the Solar farm (inverter stations) and outside the site boundary (overhead power lines).

The overhead powerlines and connection to the Warwick substation are under the control and authorisation of Ergon Energy/Energy Queensland and will require adherence to the Australian

Standard for overhead line design. It should be noted that in the absence of an Australian standard for regulating exposure of electro-magnetic radiation from Solar farms the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) refer to the National Health and Medical Research Council's guidelines.

To address this performance outcome the project will need to comply with the National Health and Medical Research Council's Interim guidelines on the limits of exposure to 50/60Hz electric and magnetic fields (1989). It is recommended a condition be imposed to address the public health concerns regarding radiation exposure from electro-magnetic fields.

**Performance outcome PO6**

- *All uses are located, designed, oriented and constructed to minimise noise, dust, odour or other nuisance from existing lawful uses including rural and industry uses.*

**Acceptable outcome AO6**

- *No acceptable outcome identified*

**Assessment against PO6:**

The site for the proposed Solar farm is likely to be adversely affected from dust associated with farming and agricultural activities on adjacent properties as well as from vehicular traffic on unsealed roads within the vicinity of the site.

The planning report states there will be no reverse amenity issues from the surrounding land uses, and advice from the applicant regarding the cleaning requirements confirmed that any significant dust accumulation on the panel would be removed by means of blowers, similar to leaf blowers.

**Performance outcome PO7**

*All uses are located, designed, oriented and constructed to minimise nuisance caused by noise, vibration and dust emissions generated by the State controlled road and rail network.*

**Acceptable outcome AO7**

- *No acceptable outcome identified*

**Assessment against PO7:**

Emissions generated by the State controlled road and rail network will have no adverse effects on the proposal.

**Performance outcome PO8 (Scenic amenity)**

*Development is sensitive and responsive to the scenic amenity of the area. The appearance and siting of buildings, other structures, carparking areas or signage is compatible with the scenic character of the area, particularly when viewed from roads. The development is sensitive to the design of any nearby structures and is respectful and sympathetic to any Local heritage place*

**Acceptable outcome AO8 - In partial fulfilment of this PO -**

- All new industrial buildings are set back at least 100 m from the Cunningham Highway and New England Highway and 60 m from all other roads.*
- All other buildings are located at least 20 metres from any sealed road and at least 60 metres from any gravel road.*

**Assessment against outcomes:**

A report prepared by IRIS Visual Planning + Design was submitted, addressing the impacts on the visual amenity and scenic character of the area from the proposal. The methodology of the assessment included identifying a zone of visual influence to assist in establishing areas from which the proposal may be visible. Topographic data and heights of the proposal's physical elements/structures provided criteria to inform the study on the ability for the overall landscape to accommodate change, i.e. the Solar farm without the loss of its valued attributes, e.g. scenic amenity. The assessment identified views from areas within the surrounding landscape (refer to Figure 14) and rated them in accordance with their importance at a local community level to being



an iconic landscape feature. The magnitude of change when considering the proposal within these views was then assessed.



**Figure 14 Viewpoint location plan – 201892-05**

The scenic amenity impacts established by the visual impact assessment of most concern are those relating to views from the Cunningham Highway and views from elevated residential properties in the south/south-east. The visual impact assessment findings for these two viewing areas are as follows:

- **“Views from the Cunningham Highway**
  - *Despite the visibility of the proposal, due to the location of the site on the valley floor, and wider landscape which would be unchanged there would be a medium magnitude of change in the amenity of these views. Due to the value placed on this scenic route as a major approach to Warwick, these views are of medium sensitivity. This would result in a moderate adverse visual impact.”*
- **Views from elevated residential properties in the south/south-east**
  - *Due to the extent of change visible this would result in a medium magnitude of change in the amenity of these views which are of medium sensitivity, and a moderate adverse visual impact.*

The visual impact assessment provides the following photomontages for views (before and after development) in these areas (refer to Figures 15 and 16).



1.



**Figure 15 Views from Crusher Road**





9.



**Figure 16 Views from Derain Drive**

The requirements outlined to address impacts associated with Performance outcome PO1 are deemed to be sufficient to mitigate impacts on views from elevated residential properties in the south/south-east, predominantly views from points 7, 8, and 9 in Figure 14, i.e.:

- No solar panels are to be installed with a distance of approximately 200 metre from the southern boundary (Johnsons Road) to ensure sufficient separation from sensitive land uses; and
- Planting of native vegetation (large trees and shrubs) along the southern boundary of the site included within the 200 metre buffer (Jensens Road, Robinson Road and Freestone Roads).

Impacts associated with views from the Cunningham Highway will need to be addressed when considering the overall landscape treatment for the proposal site, set-out further in this report (assessment against the Landscape Code).

**Performance outcome PO9 (Conservation of agricultural land)**

- *Land identified as Agricultural Land Classification (ALC) Class A and Class B is conserved for rural use in accordance with the State Planning Policy.*
- *The productive capacity of the land is protected and maintained.*

**Acceptable outcome AO9**

- *No acceptable outcome identified.*

**Assessment against PO9:**

In this Performance outcome, reference is made to the State Planning Policy (July 2017) which includes the following statement to establish the State Government's interest:

- *"The resources that agriculture depends on are protected to support the long-term viability and growth of the agricultural sector."*



The agricultural land classification for the site proposed for the Solar farm is Class A and B, this classification attributes the highest value possible to the land within the proposed Solar farm site.

The proposed development of the Solar farm will not result in the permanent removal of the land from agricultural production, rather it provides a temporary reduction in agricultural production capacity for the immediate area.

When assessing the impacts in regard to a temporary reduction in agricultural productive capacity for the subject site, the proposed footprint and structural elements of the proposed Solar farm need to establish a minimal impact to ensure future use is viable.

The applicant reports that the design is unobtrusive to the land in that there are no concrete footings required for the panel array support structures, and no permanent structural elements within the area of the panel array.

The proposal seeks to include sheep grazing within the site as a way to manage grass cover growth and enhance the overall (non-rural) aspect of the facility. The current rural use of cropping will cease, though not permanently. The applicant provides that *“this approach will maintain the productive capacity of the soils, prevent erosion and essentially rests the soil for the duration of the solar farm’s presence.”*

The cessation of cropping in those areas within the proposed Solar farm site boundary will be for a period of time in excess to that which a field may, in the normal course of farming, remain fallow. However, the rural use of the land will continue in the form of grazing of stock and the land will still be available for cropping and other rural activities once the use has ceased.

The use of sheep within the site to maintain grass growth has been successfully trialed in several countries. Findings of a study in 2014 in South-West England concluded:

- *“It was found the use of grazing sheep is beneficial to the continued operation of solar farms on agricultural land. Sheep have caused no injurious effects to the solar equipment and the solar equipment has caused no injurious effects to the sheep, according to the seven shepherds and four operators<sup>1</sup>.”*

Consideration of conflict to rural activities on land within (and surrounding) the proposed Solar farm, must include assessment of the project footprint, construction methodology and panel mount design in terms of immediate, prolonged and or irreversible impacts.

The project footprint will cause cessation of cropping on the land, though due to the availability of cropping land within the immediate local area and regionally, these impacts are not considered to be significant or long term.

The construction methodology provides no permanent impacts, as panel mounts are proposed to be screwed or pile driven, not concreted. The panel design allows for sheep grazing, and can be removed following cessation of the Solar Farm use; providing no permanent or irreversible impact to rural land activity.

The applicant estimates an anticipated life span for the operation of the proposed Solar farm, in a viable sense, to be approximately 30-50 years.

The operational timeframe for the proposed Solar farm may need to be restricted to a 20-25 year period. This requirement will address possible effects on soil quality and long-term productivity and assist to protect the existing plant and soil microbial community composition. The State Planning Policy establishes criteria to support agricultural production, which includes:

- *managing the sustainable use of natural resources (including soil, land, native forests, fish habitats and water) critical for agricultural activity and protecting these resources from irreversible impacts*

The following condition will ensure that the use does not provide a risk to soil quality or interfere with the long term future agricultural use of the land.

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<sup>1</sup> The English Experience  
South-West England Cornwall, Devon, Somerset, Dorset  
Kent Fletcher and Donald Lewis September 2014

- The operational time frame for the Solar Farm will be limited to a period of 20 years from the date of commencement of operations;
  - where soil tests undertaken over the site at random intervals throughout the panel arrays establish no adverse impacts to soil quality, the solar farm operations can be extended for a period of 5 years.

**Performance outcome PO10 (Protection from previous hazardous activities)**

- *Sensitive land uses are protected from the impacts of previous activities that may cause risk to people or property.*

**Acceptable outcome AO10**

- *Sensitive land uses are not located on:*
  - (a) *sites of former mining activities (e.g. disused underground mines, tunnels and shafts);*
  - (b) *former landfill and refuse sites; or*
  - (c) *contaminated land.*

**Assessment against outcomes:**

This performance outcome is not applicable in assessing this proposal.

**Additional assessment benchmarks for the Alluvial plains precinct**

**Performance outcome PO11**

- *Uses are limited to uses that add value to the productive use of the land and do not conflict with or reduce the productive capacity, hydrological functions or scenic values of the land. In particular –*
  - (a) *The use is associated with rural activities on or nearby the subject land;*
  - (b) *The use is not likely to cause conflict with agricultural practices;*
  - (c) *The use has low visual impact particularly where located on highways, main roads or tourist routes;*
  - (d) *The development is located on cleared land and there is no proposed clearing of remnant vegetation;*
  - (e) *Development is sited on the least productive, lower agricultural quality parts of the site; and*
  - (f) *The use does not increase built infrastructure or earthworks in the flood plain.*

**Acceptable outcome AO11**

- *No acceptable outcome identified.*

**Assessment against PO11:**

The planning application provides a response to this criterion that confirms there will be no permanent removal of the land for agricultural production and that any reduction of the productive capacity is temporary in nature. This Performance outcome includes reference to hydrological functions and scenic values; both issues have also been the subject of concern from within the immediate community.

Impacts to scenic values has been addressed in this report, the visual impact assessment has revealed the need for mitigation measures which are to be proposed should the proposal be approved. Impacts to hydrological function have been assessed by the applicant and a Stormwater management report prepared by Premise Consultants has been provided.

The report discusses the impacts likely to arise for stormwater quantity from the proposed solar farm development. The assessment included preliminary modelling to identify potential impacts of

stormwater flows from the proposal on downstream catchments and infrastructure and proposed mitigation measures to reduce these potential impacts to a level acceptable to Council standards.

The report states:

- *“stormwater quantity modelling was undertaken using the XPSWMM runoff-routing model. Design flood discharges within the site’s local and regional catchment were estimated for the 63% to 1% AEP design storm events. The key objective of the hydrologic and hydraulic modelling was to demonstrate that the post-development peak discharge from the site up to and including the 1% AEP storm event is not worse than pre-development flows.”*

The study findings established that the proposed Solar farm would not increase or worsen the existing conditions for stormwater flows within and across the catchment where the Solar farm is proposed.

The report findings go further to state that no mitigation is required as a result of the findings and the State Planning Policy’s stormwater management design objectives (SPP 2017 Table B) are not applicable in regard to the proposal, i.e. stormwater quality modelling is therefore not required.

Notwithstanding the findings of the stormwater assessment undertaken by the applicant, the following requirements will be imposed to ensure community concerns regarding this development are addressed and the proposal aligns with Council’s design standards for management of stormwater.

- The developer’s Consulting Engineer shall carry out catchment analyses and runoff modelling to confirm the suitability of existing stormwater infrastructure under Jensen’s Road.
  - The modelling shall account for partial area effects and determine the critical storm duration for the infrastructure.
  - The provisions with regards to QUDM Table 4.5.4 regarding change from dryland broad-acre farming and grazing to retained groundcover are to be addressed in runoff modelling.
  - The modelling shall be based upon a detailed design surface of the site, which includes any drainage paths, access roads and other features which will concentrate stormwater flow.
- Council’s design standard for minor road culvert crossings is immunity up to and including 1 in 10 year ARI.
  - Where the developers consulting engineer determines upgrades or modifications to the existing infrastructure are necessary, these works shall require an Operational Works Approval.
  - Any works undertaken to the existing waterways shall conform to the DAF code for self-assessable waterway barrier works, & construction and maintenance of culverts.

Performance outcomes PO12 to PO14 are not applicable to this application as the proposal is not for an Intensive animal husbandry and is not located within a flood plain.

The impacts from alteration to flow paths from the infrastructure and earthworks for the proposed Solar Farm are addressed in PO11 above.

### ***Additional assessment benchmarks for the Basalt uplands precinct***

#### ***Performance outcome PO17***

- *Uses are limited to uses that do not compromise the natural environment character or scenic value of the land, are safe from environmental hazards and are located on sites that have adequate and appropriate access. In particular –*
  - (a) *The development does not result in the clearing of any remnant vegetation either for site works or protection from hazards;*

- (b) *The use is located, designed and constructed so that it is not likely to cause conflict with agricultural practices;*
- (c) *The use has low visual impact particularly where located on highways, main roads or tourist routes.*

### **Acceptable outcome AO17**

- *No acceptable outcome identified.*

### **Assessment against PO17:**

The proposed Solar farm has been assessed regarding the likely impacts to the natural environmental character and scenic values (including potential glare impacts) of the area within the response to Performance outcome PO1. The response to Performance outcome PO5 addresses concerns relating to environmental hazards and issues concerning access are addressed in Performance outcome PO4.

There is no requirement to clear remnant vegetation either for site works or protection from hazards. The siting and design of the proposed Solar farm impacts current agricultural activities (cropping on several lots) within the subject site, as previously discussed, though does not cause conflict with surrounding agricultural practices.

As discussed in response to Performance outcome PO5, the visual impact assessment undertaken by the applicant has provided two areas where the visual impacts from the proposed Solar farm are rated as being moderate, with the remaining impacts to views rated as minor.

In regard to the expected visual impacts to the Cunningham Highway, the assessment study provided the following photomontage (Figure 18) to provide an example of (point in time) views to the Solar farm from the Cunningham Highway (at Crusher Road) before and after development. These views will impact the most people, i.e. all travellers entering Warwick from the north east and are considered to be an area where visual impacts are least likely to be mitigated.

From the Highway there is no visual intrusion above ground level, meaning all areas not covered by the panel arrays remain visible and free of impact. The general arrangement of cropping lands provides a similar visual aspect during planting and harvesting, changing the visual landscape in a seasonal manner. The angled tilting of the panels will at times provide a similar aspect to this and remain a ground level impact.

The glare assessment provided by the applicant has reviewed the potential for glare to motorists, including along the Cunningham Highway (refer to Figure 17). The findings assert there is no glare predicted from points measured along the Cunningham Highway.

The results of glare assessment from points along Freestone Road provided a varied measurement of glare hours per year with a rating that states:

- *“glare with low potential for temporary after-image predicted”*

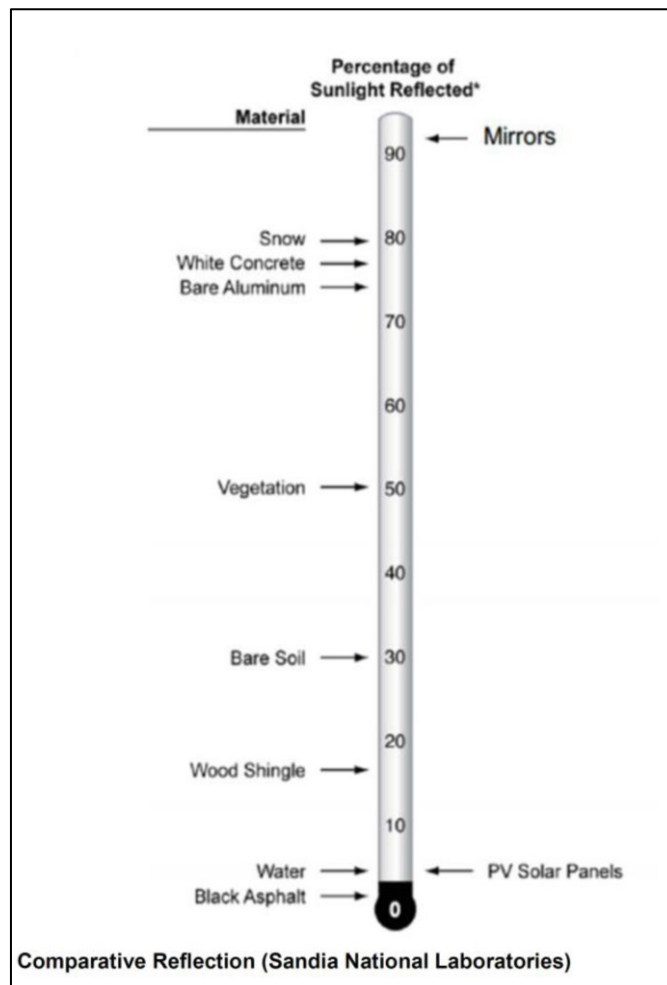
Where *“temporary afterimage”* is defined as the likelihood of a solar reflection continuing to appear in one's vision after the exposure to the original image has ceased<sup>2</sup>.

The results of the glare assessment for the motorists group indicate that the proposed Solar farm will have negligible effects on road users. Both the FAA and CASA (as well as the United Kingdom's Civil Aviation Authority) require that the minimum threshold for glare from solar energy system projects for aircraft travelling along their final approach path for landing provides a “low potential for after-image<sup>3</sup>” when measuring ocular impact.

The assessment of mitigations for views to the subject site from this area is covered further in the Landscaping code benchmark assessment. The applicant provided the following graphic to establish the level of glare from the solar panels proposed when compared to other physical elements (refer to Figure 17).

<sup>2</sup> Solar Photovoltaic Development – Glint and Glare Guidance  
April, 2017: Danny Scrivener, Kai Frolic and Mike Watson

<sup>3</sup> Ibid at page 22



**Figure 17 Comparative reflection**



1.



**Figure 18 View from Crusher Road and Cunningham Highway – before and after development (panel tilt at 27°)**

### ***Carparking and loading code***

The Carparking and loading code provides few requirements for the proposed Solar farm as there are no specific parking ratios provided in the Planning Scheme for this use. The proposal complies with the requirements of the Code and is expected to generate less traffic during operations than the existing farming activities.

The operational requirements are estimated to be up to five light vehicle spaces, though the parking area available can sustain additional parking if required. The applicant has advised that detailed plans outlining carparking areas can be submitted at the construction phase if required. The surface treatment for the carparking areas is proposed as gravel. Parking areas are to be located adjacent to the operations facilities, with options for sensor based security lighting and cameras to be installed if considered necessary.

The principal point of access is proposed for Jensen Road, opposite McMahon Road, with a secondary access retained for occasional use at the house on Lot 5 RP36424. The applicant has advised that no direct access to the State-controlled road (Freestone Road) is proposed, with approval for any works within the State-controlled road environment to be sought separately to this application. Condition 5 of the Department of Transport and Main Roads referral advice states:

- *“5. Direct access is not permitted between Freestone Road and the subject site.”*

Where refuse collection is undertaken, the applicant advises that this will be through an agreement with Council or a commercial operator, with bin storage located at the operations area. There appears to be adequate space for waste collection vehicles to access and manoeuvre on site for the proposed operations area.

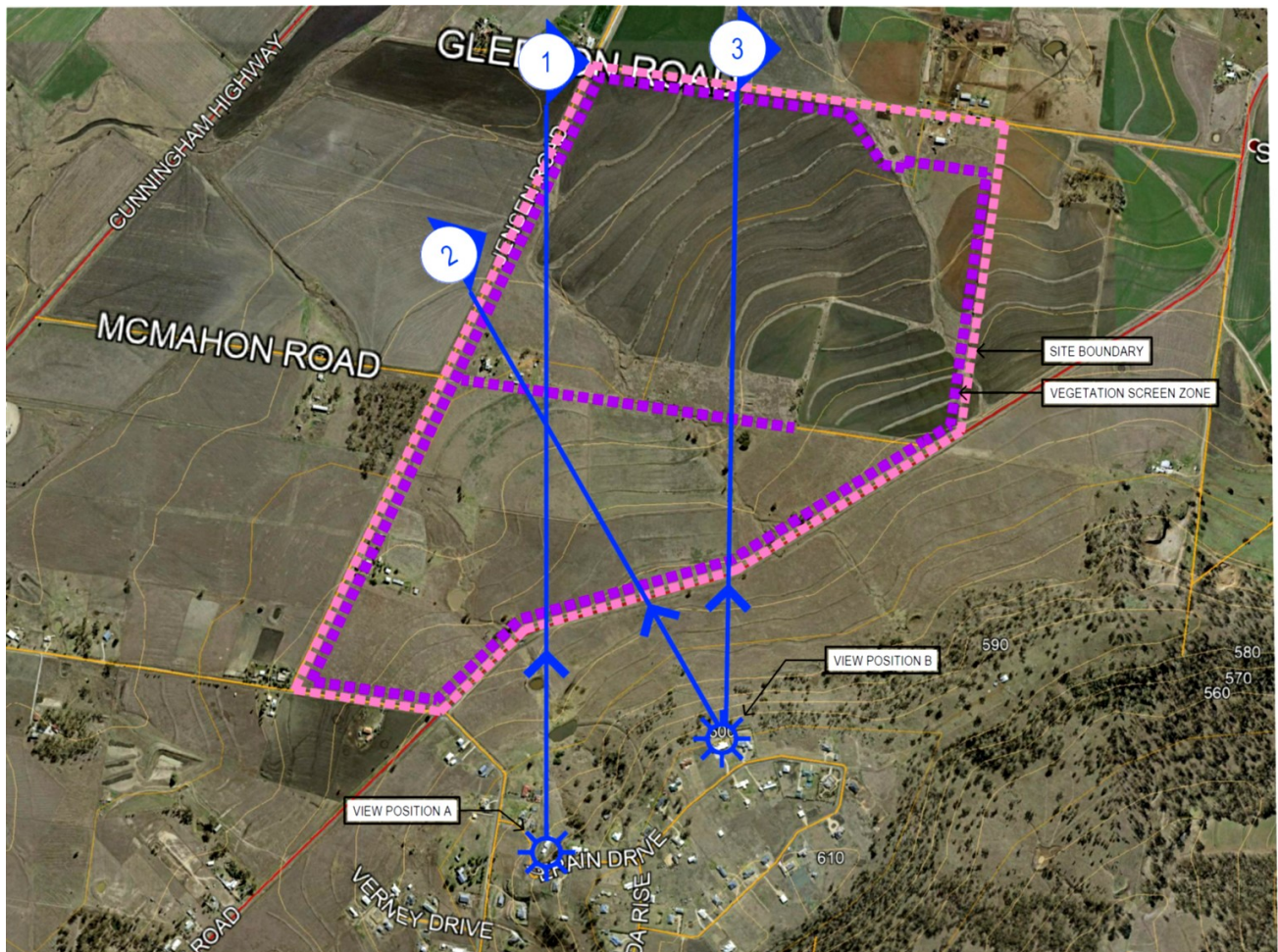
The applicant has advised that detailed site design will accommodate access and manoeuvring for large rigid vehicles, medium rigid vehicles and articulated vehicles for replacement of equipment,



delivery and other servicing. There are no further requirements for the proposed Solar farm apart from the standard conditions for development under this Code.

### **Landscaping code**

The visual impact assessment of the proposed Solar Farm has relied on landscape treatments along the boundary of the site and within to lessen the impacts to neighbouring residents and motorists. The planning report establishes three main viewpoints impacted by the proposal from residences in Derain Drive (refer to Figure 19).



**Figure 19 Landscape Plan (viewpoints excerpt)**

The landscape assessment undertaken by the applicant prescribes landscaping treatments to address visual impacts of the proposal. Performance outcomes 1 (Visual impact) and 9 (Specific requirements for buffers to land in the Rural zone) are most relevant to address the concerns the local community have in regard to the visual impact of the proposal.

### **Performance outcome PO1**

- *Development is landscaped in a manner which:*
  - *Makes a positive contribution to the streetscape and enhances the appearance of the facility;*
  - *Integrates natural landscape features such as rock outcrops and existing large trees and existing native vegetation;*
  - *Enhances buffer areas around property boundaries;*
  - *Compliments the relative size and nature of the development;*
  - *Screens the view of service, carparking and loading areas;*
  - *Enhances the appearance of screens and acoustic fences; and*

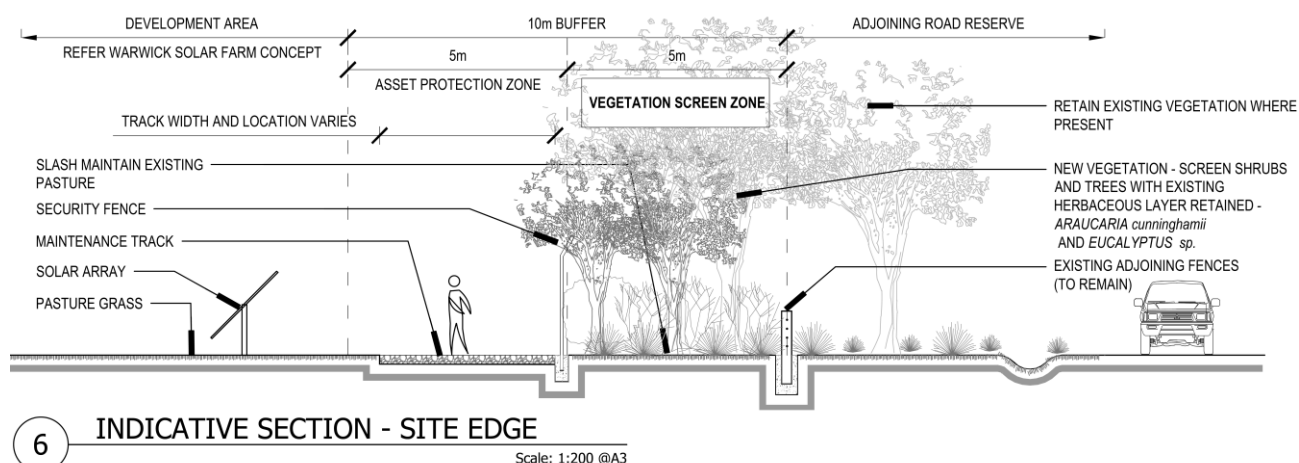
- Ensures the functionality of outdoor space.

### Acceptable outcome AO1

- In partial fulfilment of the PO – Landscaping is carried out in accordance with a planting plan prepared by a suitably qualified landscape designer that:
  - (a) incorporates all proposed planting, paving, fences, recreational facilities and other landscape elements necessary to meet the performance outcomes; and
  - (b) incorporates the following information:
    - (i) Location and species of existing trees, including street trees;
    - (ii) Location and species of proposed plants and a schedule of plants and plant size;
    - (iii) Soil type;
    - (iv) Location of drainage, sewerage and other underground services and overhead power lines;
    - (v) Irrigation details;
    - (vi) Proposed surfaces;
    - (vii) Fence height and material;
    - (viii) Location of doorways and windows of buildings on the site;
    - (ix) Location of any existing or proposed solar collectors on the site;
    - (x) Contours or spot levels as required;
    - (xi) Scale and north point.

### Assessment against PO1:

The landscape plan provided with the application includes information relating to the proposed species sought for planting the buffer, the design of the vegetation screen zone (refer to Figure 20) and how the proposal intends to address the visual impacts to neighbouring residences and motorists. The vegetated buffer on the boundary has been arranged in recognition of the degree of visual impact, with a priority planting regime proposed for addressing impacts to nearby residents and a secondary regime for all other areas as well as within the site (extension of McMahon Road).



**Figure 20 Vegetated buffer planting arrangement**

This vegetated buffer seeks to impede views into the site from the residences at Derain Drive and other areas, aiming to obstruct the views over time with large trees and an established column of locally sourced trees and shrubs.



The applicant will be required to provide detailed design of the landscape treatment, which will form part of the development conditions to be assessed prior to works commencing.

### **Performance outcome PO9**

- *Where a buffer is required to separate agricultural and residential land uses, or buffer any use in the Rural zone the buffer is to:*
  - (a) *Contain random plantings of a variety of native, preferably, endemic tree and shrub species of differing growth habits, at spacings of 4-5 m for a minimum width of 20 m (unless a lesser width is permitted by a use code or an approval);*
  - (b) *Provide foliage from the base to the crown;*
  - (c) *Include species which are fast growing and hardy;*
  - (d) *Have a mature tree height at least 3 m; and*
  - (e) *Include an area at least 10 m clear of vegetation or other flammable material to either side of the vegetated area.*

### **Acceptable outcome AO9**

- *No acceptable outcome identified.*

### **Assessment against PO9:**

In addition to PO2 (Environment), which also requires the landscaped areas to include species present in the local area, i.e. frost resistant and drought hardy, the applicant advises that the selection of plant species for the buffer areas will be:

- *fast growing species that contribute to the low level buffer and allow for successive generations of screening plants to be retained; and*
- *taller, slower growing species that provide markers in the landscape and will, over time contribute to breaking up the visual extent of the solar farm.*

The application complies with the requirements of the Acceptable outcomes for this criterion as the selected species will be drawn from the pre-clearing regional ecosystems for the site (in the south - 11.9.9 and 11.9.13, in the north on alluvial areas - 11.3.4 and 11.3.2) and other selected landscape trees as suited to the localised soil types.

The buffer will be uniquely designed for the proposed Solar farm and may vary with the standard requirements for vegetated buffers described in this performance benchmark. The proposed vegetated buffer will assist in addressing overland flow prescribed in PO6 (Water management) though the surface water impacts are addressed separately to ensure the applicant meets Council's standard requirements.

The landscape treatment for the site is a critical element of how the proposal is able to respond to the visual impacts likely to occur, in particular to those residents that may be more keenly affected in this regard. There is sufficient detail within the proposal received to provide a level of confidence that the design of the landscaping has been focused on addressing the visual impact elements from specific viewpoints and can be appropriately conditioned to comply with the Performance outcomes for the code.

### **Outdoor lighting code**

The applicant advises that minimal outdoor lighting will be required for the proposal, beyond basic security illumination. The lighting specifications to be provided will be undertaken as part of the detailed design, and will comply with AS 4282.

### **Physical infrastructure code**

The relevant performance benchmarks in this Code are those requiring water, waste water and electricity. The proposal includes retaining the existing dwellings on Lot 415 SP279264 and Lot 5

RP36424. Existing services to these two dwellings will be retained and improved where necessary, to conform to the requirements of the Code.

### ***Infrastructure Charges***

There are no infrastructure charges applicable to this application.

### **Options**

Council:

1. Approves the application subject to conditions as recommended.
2. Approves the application subject to conditions other than as recommended.
3. Refuses the application giving reasons for the refusal.

## Recommendation

THAT the application for Material Change of Use for a Renewable energy facility (Solar farm) on land at Gleesons Road, Jensens Road and Freestone Road, Sladevale, described as Lots 1, 4 & 5 RP36424, Lot 416 SP141378, Lots 417 & 418 W3010, Lot 415 SP279264, Parish of Warwick, County of Merivale, be approved subject to conditions:

### Schedule 1 - Southern Downs Regional Council Conditions

#### Approved Plans

1. The development of the site is to be generally in accordance with the following proposal plans submitted with the application, and subject to the final development being amended in accordance with the conditions of this approval.

Plan Name	Plan No.	Date
Site Layout	PR136472-01	28/03/2018
Warwick Solar Farm Preliminary Layout	SP-01 Rev4	10/01/2018
Landscape View Study	136472-5 L-0-01 Rev C	09/04/2018

2. Where there is any conflict between the conditions of this approval and the details shown on the approved plans and documents, the conditions of approval prevail.

#### Land Use and Planning Controls

3. This approval allows for the use of the site and existing dwellings for a Renewable energy facility (Solar farm) and ancillary activities including administration, research and education.
4. No solar panels are to be erected within an area approximately 200 metres wide located at the southern end of the site, abutting Robinson Road, Freestone Road and Jensens Road, generally as shown on the plan titled *Warwick Solar Farm - Approximate spatial extent of the 200m buffer from Robinson Road*. Within this area, random plantings of a variety of native trees and shrubs of differing growth habits are to be provided. The trees and shrubs must be of species that are fast growing, frost resistant and drought hardy. The vegetated buffer is to be maintained so it provides an effective visual buffer.
5. The Renewable energy facility (Solar farm) may operate for a maximum of 20 years from the date the facility, or part of the facility, becomes operational. This timeframe may be extended for a further period of five years subject to soil tests demonstrating that there have been no adverse impacts on soil quality.
6. Site coverage of the solar panels must not exceed 30% approximately.
7. A minimum separation distance of 2.5 metres must be provided between the rows of solar panels.
8. The solar panels are to have a maximum height of 2.6 metres at maximum tilt.
9. The mounts for the solar panels are to be generally pile driven or screwed into the ground.
10. All coatings on cables and structures must be anti-reflective.
11. The site is to be used for the grazing of stock.
12. Grass cover is to be maintained throughout the site, except in those areas used for major access tracks.
13. The solar panels are to be maintained in working order. If a panel is damaged or becomes inoperable, the panel is to be removed as soon as practicable.
14. Prior to commencement of the use, the following plans are to be submitted to Council for approval:
  - (a) Construction environmental management plan;

- (b) Decommissioning program and asset removal schedule (including the removal of all infrastructure associated with the Solar farm, including all underground infrastructure); and
- (c) Land rehabilitation and monitoring plan (including how the land will be rehabilitated to allow for future agricultural use).

The Construction Environmental Management Plan must be prepared by a suitably qualified person and address the following:

- Hours of building and operational work activity
  - Air and noise quality management – emissions monitoring (day/night)
  - Stormwater quality management – including erosion and sediment control
  - Waste management
  - Complaint monitoring and community engagement procedures
  - Dust suppression (road watering) program
  - Traffic management and monitoring plan
15. The site is to be decommissioned and rehabilitated in accordance with the approved Decommissioning program and asset removal schedule and Land rehabilitation and monitoring plan.

#### **Amenity and Environmental Controls**

16. During the construction phase of the development, all wastes must be separated into recyclables (where possible) and landfill wastes, and disposed of at the Warwick Central waste facility.
17. Declared pest plants on **all** the land subject to this application must be destroyed to the satisfaction of the Manager Environmental Services, prior to Council signing the Plan of Subdivision.
18. The loading and/or unloading of delivery and other service vehicles (excluding general waste collection vehicles) is limited between the hours of 7.00am and 7.00pm, Monday to Saturday, and between the hours of 8.00am and 3.00pm on Sundays. No heavy vehicles must enter the development site outside these times to wait for unloading/loading.
19. All wastes are to be suitably collected and disposed of so as not to adversely impact on the environment.
20. Any external lighting must be installed so that light shines down and away from adjacent properties and roads, and does not exceed 8 lux at the property boundary.
21. Prior to commencement of construction, certification from a suitably qualified person is to be submitted to Council demonstrating that electromagnetic radiation (EMR) levels from equipment and infrastructure will not exceed recommended levels in accordance with the National Health and Medical Research Council's *Interim Guidelines on the limits of exposure to 50/60Hz electric and magnetic fields (1989)*.

All EMR sources within the Proposed Solar Farm are located at an appropriate distance from the property boundary to ensure the electro-magnetic radiation risk to the general public is negligible.

#### **Fencing, Landscaping and Buffers**

22. A security fence shall be erected along all property boundaries of the solar farm in accordance with the Landscape View Study Plan (136472-5-L-0-01 Revision C). **Details of the proposed fencing are to be submitted to and approved by the Director Planning, Environment and Corporate Services prior to construction commencing.** Fencing is to be provided and maintained in accordance with the approved details.
23. Landscaping is to be provided in accordance with the Landscape View Study plan (136472-

5-L-0-01 Revision C), and within the approximately 200 metre wide buffer area at the southern end of the site.

24. **A detailed Landscaping Plan**, prepared by an appropriately qualified person, **is to be submitted to and approved by the Director Planning, Environment and Corporate Services** prior to construction commencing. The detailed Landscape Plan must include details of the location and species of plants, and the irrigation system. Plants are to be generally fast growing, frost resistant and drought hardy, and must not include weed species. Root barriers are to be installed around trees that are located within 3 metres of any underground infrastructure. The site is to be landscaped and maintained in accordance with the approved Landscaping Plan, and to ensure it provides an effective visual buffer.

### **Car Parking and Vehicle Access**

25. A gravel crossover crossing, adequate to cater for construction traffic, is to be constructed at the Jensens Road entrance to the site. The access gateway to the property must be located within a setback such that all vehicles proposed to enter and/or exit the land are able to stand clear of the carriageway whilst the property gateway is being opened and/or closed.
26. All vehicular access to and from the Solar farm must be via Jensens Road only.
27. The internal driveways are to be designed and constructed to allow an 8.8 metre service vehicle to enter and leave the site in forward gear.
28. At least five (5) car parking spaces are to be provided on site. Provision is to be made for disabled parking.
29. All loading and unloading of goods related to the development must be carried out within the confines of the site boundary. Under no circumstances will the loading or unloading of goods on the public roadway system be permitted.

### **Roadworks**

30. A dedicated heavy vehicle access to the site shall be constructed at the location nominated on the Site Layout Plan (PR136472-01) prepared by RPS. The site access shall be constructed to an all-weather heavy vehicle standard and include measures to prevent the tracking of soil and silt from the site onto the road network.
31. A Road Safety Assessment, as recommended in the Traffic Impact Assessment Report prepared by Premise and dated 28 March 2018, is to be carried out by an RPEQ or accredited road safety auditor, and the recommendations of that assessment are to be carried out as part of the required works for the development. The Road Safety Assessment is to include Freestone Road between the Cunningham Highway and Freestone Creek Road, Robinson Road between Freestone Road and Jensen Road, and Jensens Road between Robinson Road and the site access. Where this condition requires works or alterations to Council's infrastructure, these alterations shall require an Operational Works Approval.
32. A pre-construction condition assessment, including joint inspections by the developers certifying engineer and Council's officers, is to be conducted on each of Robinson Road, Jensen Road, McMahon's Road and Gleeson Road. The roads are to be re-inspected upon completion of the construction period, and the developer shall rectify any damage caused to Council's infrastructure during the construction period. Inspections are to be organised and programmed by the developer. Please contact Council's Development Engineer to arrange these inspections.
33. Dust suppression measures are to be put in place on unsealed roads utilised by construction traffic to access the development, where those roads are within 200 metres of a dwelling house.

### **Stormwater Drainage**

34. The developers Consulting Engineer shall carry out catchment analyses and runoff modelling to confirm the suitability of existing stormwater infrastructure under Jensen's Road. The modelling shall account for partial area effects and determine the critical storm duration for

the infrastructure. The provisions with regards to QUDM Table 4.5.4 regarding change from dryland broad-acre farming and grazing to retained groundcover are to be addressed in runoff modelling.

35. The modelling shall be based upon a detailed design surface of the site, which includes any drainage paths, access roads and other features which will concentrate stormwater flow.
36. Council's design standard for minor road culvert crossings is immunity up to and including 1 in 10 year ARI. Where the developers consulting engineer determines upgrades or modifications to the existing infrastructure are necessary, these works shall require an Operational Works Approval. Any works undertaken to the existing waterways shall conform to the DAF code for self-assessable waterway barrier works, & construction and maintenance of culverts.

### **Water Supply and Waste water**

37. All sewage generated from this property must be disposed of by means of an on-site sewage facility (OSSF) in accordance with the AS/NZS 1547:2012 - *On-site Domestic Wastewater Management, Queensland Plumbing and Wastewater Code* and the *Standard Plumbing and Drainage Regulation 2003*.

### **Advisory Notes**

- (i) Unless otherwise stated, all conditions of this approval are to be complied with to the satisfaction of the Director Planning, Environment and Corporate Services, prior to the use commencing, and then compliance maintained at all times while the use continues.
- (ii) Any proposal to increase the scale or intensity of the use on the subject land, that is assessable development under the Planning Scheme, would be subject to a separate application for assessment in accordance with the *Planning Act 2016* and would have to comply with the requirements of the Planning Scheme.
- (iii) The General Environmental Duty under the *Environmental Protection Act 1994* prohibits unlawful environmental nuisance caused by noise, aerosols, particles dust, ash, fumes, light, odour or smoke, beyond the boundaries of the property during all stages of the development including earthworks, construction and operation.
- (iv) Any storage of flammable and/or combustible liquids must comply with the minor storage provision of Australian Standard AS1940 *The Storage and Handling of Flammable and Combustible Liquids*.
- (v) Council will not be sealing Robinson Road or Jensens Road as a result of any dust complaints received.
- (vi) An application must be submitted and approved by Council for a permit under Southern Downs Regional Council's Subordinate Local Law No. 1.15 (Carrying Out Works on a Road or Interfering with a Road or its Operation).
- (vii) Site works must be constructed such that they do not, at any time, in any way restrict, impair or change the natural flow of runoff water, or cause a nuisance or worsening to adjoining properties or infrastructure.
- (viii) All engineering drawings/specifications, design and construction works must be in accordance with the requirements of the relevant *Australian Standards* and must be approved, supervised and certified by a Registered Professional Engineer of Queensland.

### **Aboriginal Cultural Heritage**

- (ix) All reasonable and practicable measures must be taken to ensure that no harm is caused to Aboriginal cultural heritage (the "cultural heritage duty of care"). The cultural heritage duty of care is met if the development is conducted in accordance with gazetted cultural heritage duty of care guidelines. Further information on cultural heritage, together with a copy of the duty of care guidelines and cultural heritage search forms, may be obtained from [www.datsima.qld.gov.au](http://www.datsima.qld.gov.au)

**Schedule 2 - Department of State Development Manufacturing Infrastructure and Planning's conditions as a Concurrence agency**

1804-4793 SRA

**Attachment 1—Conditions to be imposed**

No.	Conditions	Condition timing
<b>Material change of use</b>		
10.9.4.2.4.1—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Transport and Main Roads (DTMR) to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following conditions:		
1.	The development must be carried out generally in accordance with the following plan: <ul style="list-style-type: none"> <li>Warwick Solar Farm Preliminary Layout prepared by Terrain Solar dated 10 January 2018, reference Drawing No. SP01 (revision 4).</li> </ul>	Prior to the commencement of use and to be maintained at all times.
2.	Any excavation, filling/backfilling/compaction, retaining structures, stormwater management measures and other works involving ground disturbance must not encroach or de-stabilise the state-controlled road or the land supporting this infrastructure, or cause similar adverse impacts.	At all times.
3.	<p>(a) Pay a monetary contribution to DTMR (Darling Downs District) towards protecting or maintaining the safety or efficiency of the Freestone Road pavement structure in accordance with section 146(2)(a) of the <i>Planning Act 2016</i>. The amount of the contribution:</p> <ul style="list-style-type: none"> <li>i. is to be \$15,168.00</li> <li>ii. is to be indexed based on the Road and Bridge Construction Index, Queensland – Class 3101, published quarterly by the Australian Bureau of Statistics (ABS Cat No. 6427, Series ID A2333727L) to the date of payment.</li> </ul> <p>(b) Maintain records which document the quantity of vehicles hauled on the State-controlled road network and submit these records to DTMR (Darling Downs District) at the time of payment referenced in part (a) of this condition.</p>	<p>(a) Prior to commencing the development construction phase.</p> <p>(b) As indicated</p>
4.	<p>(a) Road works comprising a Basic Left Turn (BAL) must be provided at the northbound lane of Freestone Road at the intersection with Robinson Road.</p> <p>(b) The road works must be designed and constructed in accordance with DTMR's Road Planning &amp; Design Manual, and any extrinsic material referenced therein.</p>	At all times.
5.	Direct access is not permitted between Freestone Road and the subject site.	At all times.
6.	No landscaping is to be established within the road reserve of Freestone Road.	At all times.



## **Attachment 2—Reasons for decision to impose conditions**

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The reasons for this decision are:

- Condition 1 – To ensure the development is carried out generally in accordance with the plans of development submitted with the application.
- Condition 2 – To ensure the development and its construction does not cause adverse structural impacts on state-transport infrastructure.
- Condition 3 – To offset the impacts of development on the safety and efficiency of the state-controlled road.
- Condition 4 – To ensure the road works on, or associated with, the state-controlled road network are undertaken in accordance with applicable standards.
- Condition 5 – To ensure access to the state-controlled road from the site does not compromise the safety and efficiency of the state-controlled road. Direct access to the state-controlled road is prohibited where not required.
- Condition 6 – To ensure that landscaping is not placed within the state-controlled road reserve.

### **Evidence or other material on which the findings were based**

- development application material
- assessment and recommendation by applicable technical agency
- State Development Assessment Provisions published by the Department of State Development, Manufacturing, Infrastructure and Planning
- *Planning Act 2016*
- Planning Regulation 2017

## **Attachments**

Nil