

# Glanmire Solar Farm



## Presentation to the IPC

### 1. Applicant and Project outline / responsive to community concerns

### 2. Key issues:

- i. Land use compatibility / Agricultural land / Soil classification
- ii. Visual impacts
- iii. Traffic and transport
- iv. Socio-economic impacts (incl. accommodation and workforce) and community benefit
- v. Decommissioning and rehabilitation
- vi. Hazards and risk
- vii. Waste management and contamination
- viii. Energy security and grid connectivity (incl. BESS performance)
- ix. Groundcover management
- x. Heritage (Woodside Inn, Aboriginal cultural heritage)
- xi. Cumulative impacts

### 3. DPE Assessment Report

# 1. About the Applicant

## About Elgin Energy

Founded in 2009 Elgin Energy is a leading international independent solar and energy storage development platform. In the past fourteen years, the team has grown from the four founders to over seventy people.

Elgin delivers solar and energy storage projects from initial concept and landowner engagement through to commercial operation including project financing.

As of 2023 Elgin is operating in four markets; Australia, Ireland, the UK and Germany. Elgin Energy entered the Australian market in 2018 and is now developing projects throughout Victoria, Queensland, and New South Wales.

With a 98% success rate in securing planning permission, Elgin has obtained planning consents on more than 70 projects and delivered 21 projects (230MW) to date. 11+ GW of projects are in development across all markets. Every project developed to date has been energised or has a clear schedule to delivery.

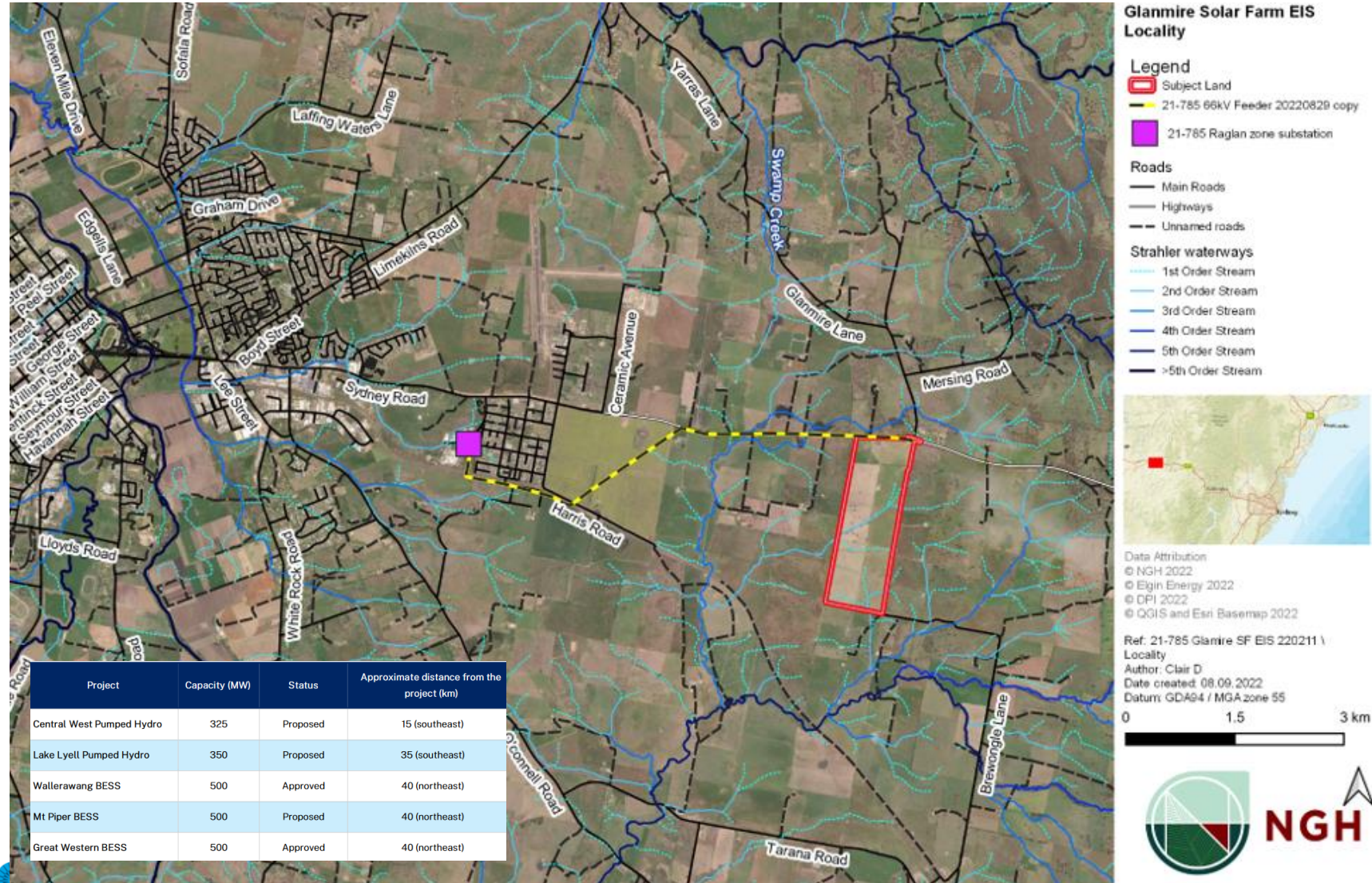


## Key Facts

<b>Established:</b>	2009
<b>Active Markets:</b>	UK, ROI, AUS, GER
<b>Delivered:</b>	over 70 projects
<b>Global Pipeline:</b>	11+ gigawatts (GW)
<b>Aus Pipeline:</b>	15 Projects, 4 GW Solar + BESS 4 Projects in Planning and late-stage development

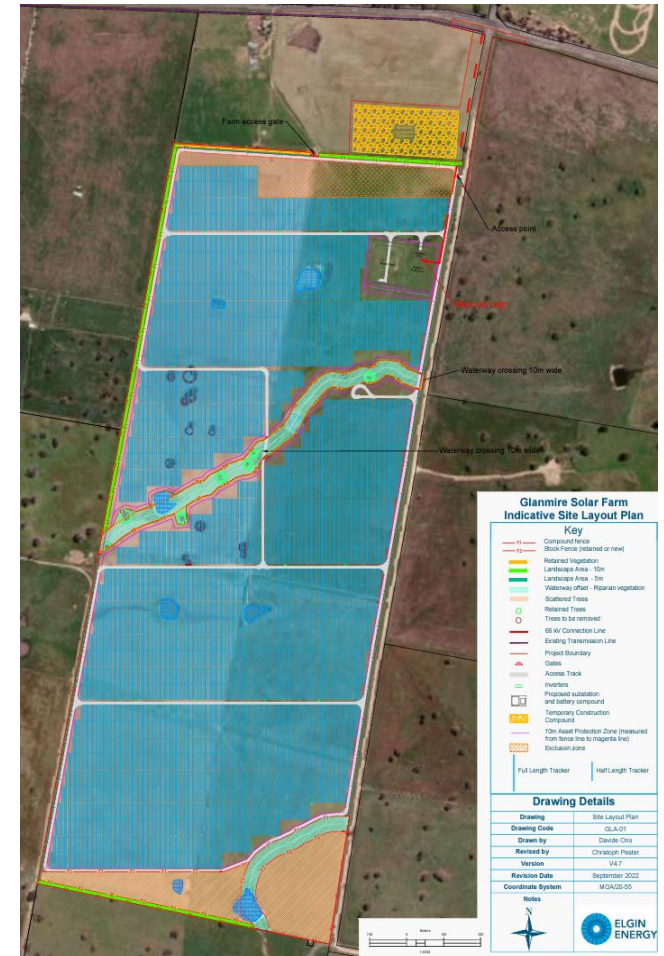
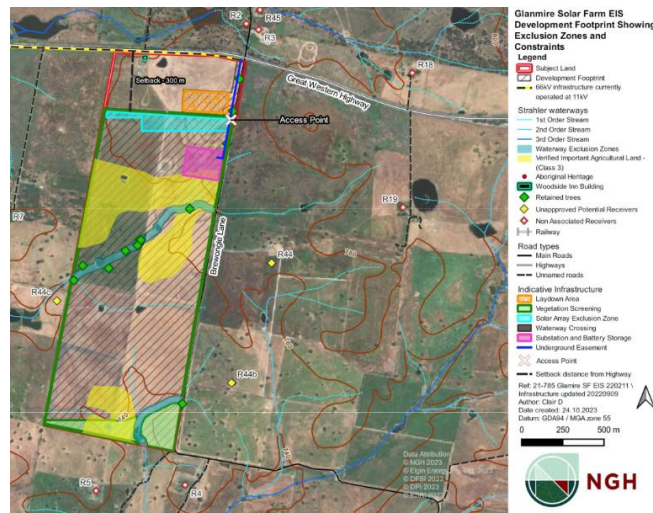
# 1. Applicant and Project outline

## Regional setting of the Glanmire solar farm site



# 1. Applicant and Project Outline

## Development



# 1. Overview of Engagement Activities

## Summary

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### Scoping Phase

- ✓ Meeting with Bathurst Regional Council – April 2020
- ✓ Community Drop-in Session – 14<sup>th</sup>/15<sup>th</sup> May 2021

### EIS Phase

- ✓ Information stall at Bathurst show – 29 - 30 April, 2022
- ✓ Drop-in session at the Bathurst Memorial Entertainment Centre – 18 May, 2022
- ✓ Glanmire Action Group meeting – 19 October, 2022
- ✓ Community Information Session – 20 October, 2022
- ✓ Community Consultative Committee (CCC) meetings – (SEARS)
  - ✓ 9 March, 2022
  - ✓ 26 April, 2022 – including a site visit before the meeting
  - ✓ 17 May, 2022
  - ✓ 14 June, 2022
  - ✓ 18 October, 2022
- ✓ 2023 - Ongoing Communication – Website, email



# 2. Key Issues

## Overview

- i. Land use compatibility / Agricultural land / Soil classification
- ii. Visual impacts
- iii. Traffic and transport
- iv. Socio-economic impacts (incl. accommodation and workforce) and community benefit
- v. Decommissioning and rehabilitation
- vi. Hazards and risk
- vii. Waste management and contamination
- viii. Energy security and grid connectivity (incl. BESS performance)
- ix. Groundcover management
- x. Heritage (Woodside Inn, Aboriginal cultural heritage)
- xi. Cumulative impacts

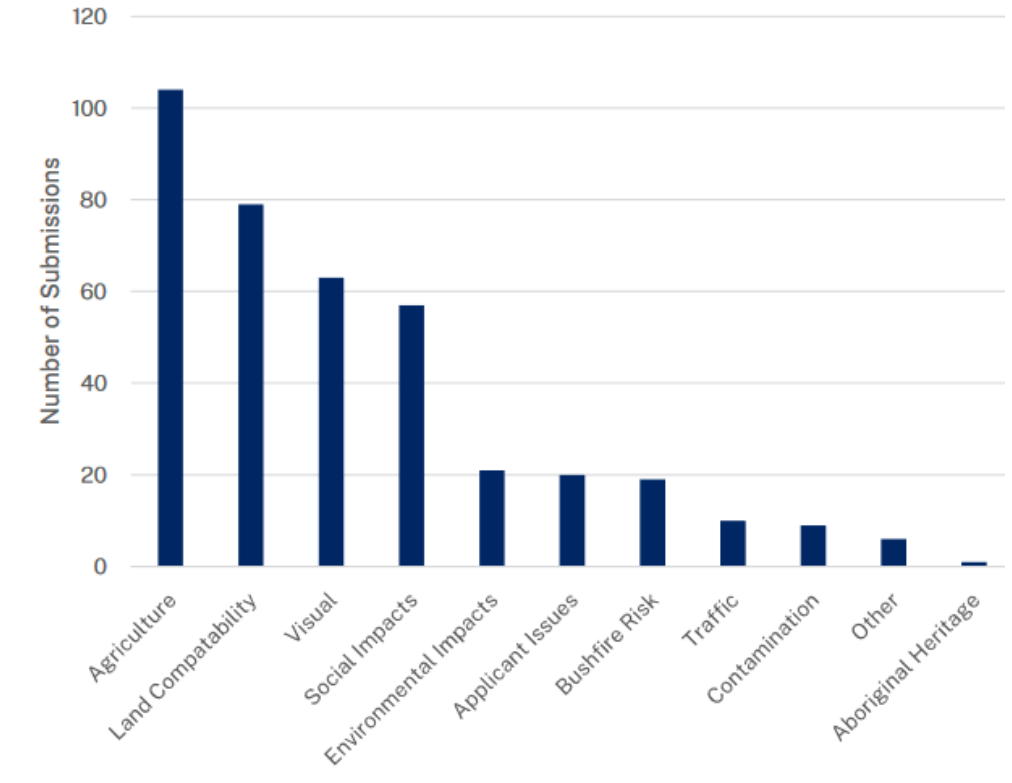


Figure 4 | Key Issues Raised in Objections

## 2. Key issues

### i. Land use compatibility and potential loss of agricultural land

<b>Loss of rural land</b>	<ul style="list-style-type: none"> <li>• Long term loss limited to substation ~0.5 ha out of 186 ha site.</li> <li>• Land capability can be retained in operation under panels and restored for tracks and cables / footings removed in decommissioning</li> </ul>
<b>Appropriate to RU1 zoning</b>	<ul style="list-style-type: none"> <li>• Is approvable with consent</li> <li>• Adds diversification, drought / flood proof income stream</li> <li>• Uses similar trades in operation: fencing, security, vegetation management, weed and pest management</li> </ul>
<b>Impact on agricultural economy</b>	<ul style="list-style-type: none"> <li>• Negligible – even with the permanent removal of some Class 3 land</li> </ul>
<b>Impact on adjacent agricultural activities</b>	<ul style="list-style-type: none"> <li>• No impact on adjacent agricultural activities</li> </ul>
<b>Heat island effect</b>	<ul style="list-style-type: none"> <li>• Unlikely to experience any heat island effect, with perimeter planting and set backs</li> </ul>
<b>Land classification process</b>	<ul style="list-style-type: none"> <li>• updated assessment of land soil capability in the submission report using increase soil survey effort</li> </ul>

## 2. Key issues

### i. Land use compatibility and potential loss of agricultural land

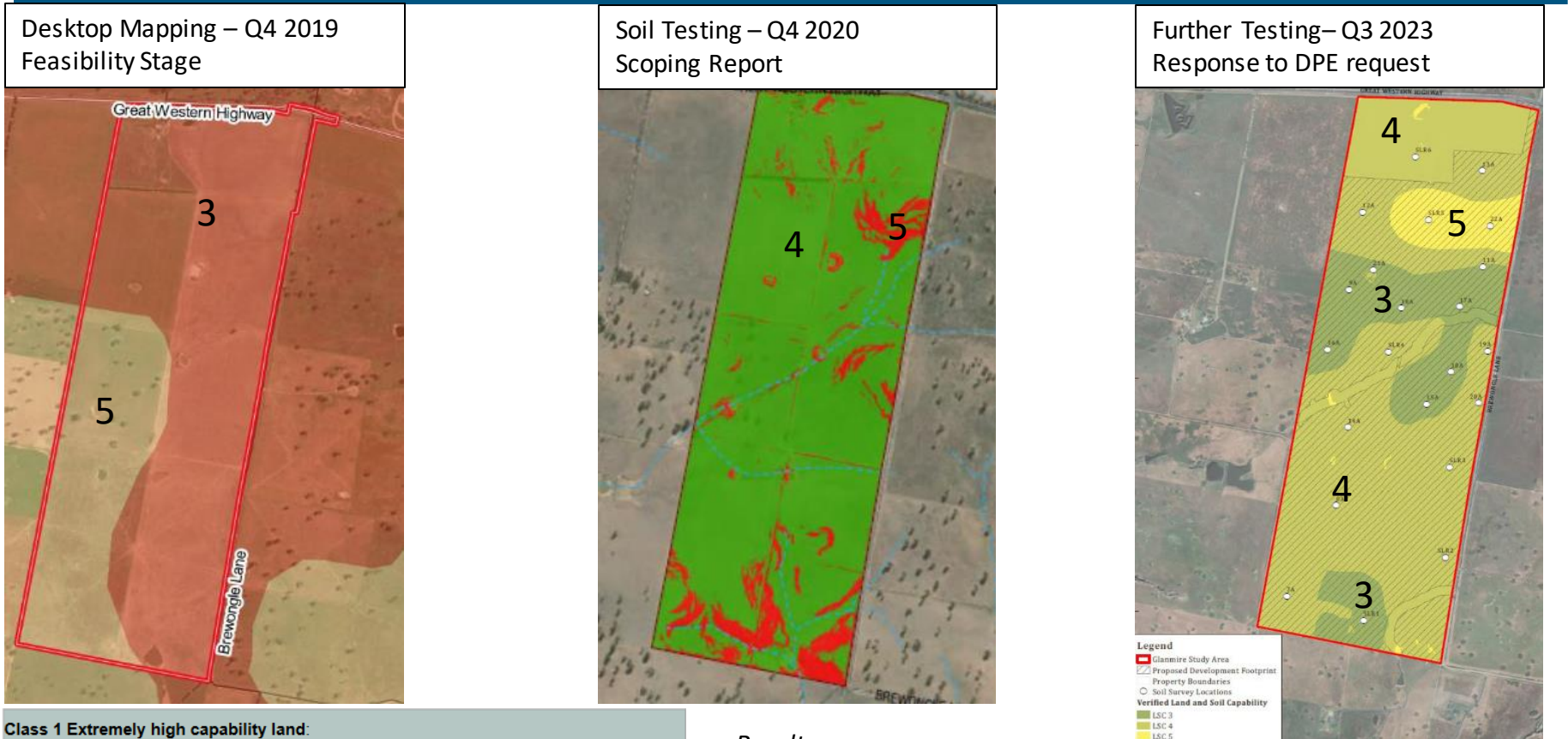
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## 2. Key issues

### i. Land use compatibility, potential loss of agricultural land, and soil classification



#### Class 1 Extremely high capability land:

Land has no limitations. No special land management practices required. Land capable of all rural land uses and land management practices.

#### Class 8 Extremely low capability land:

Limitations are so severe that the land is incapable of sustaining any land use apart from nature conservation. There should be no disturbance of native vegetation.

#### Results

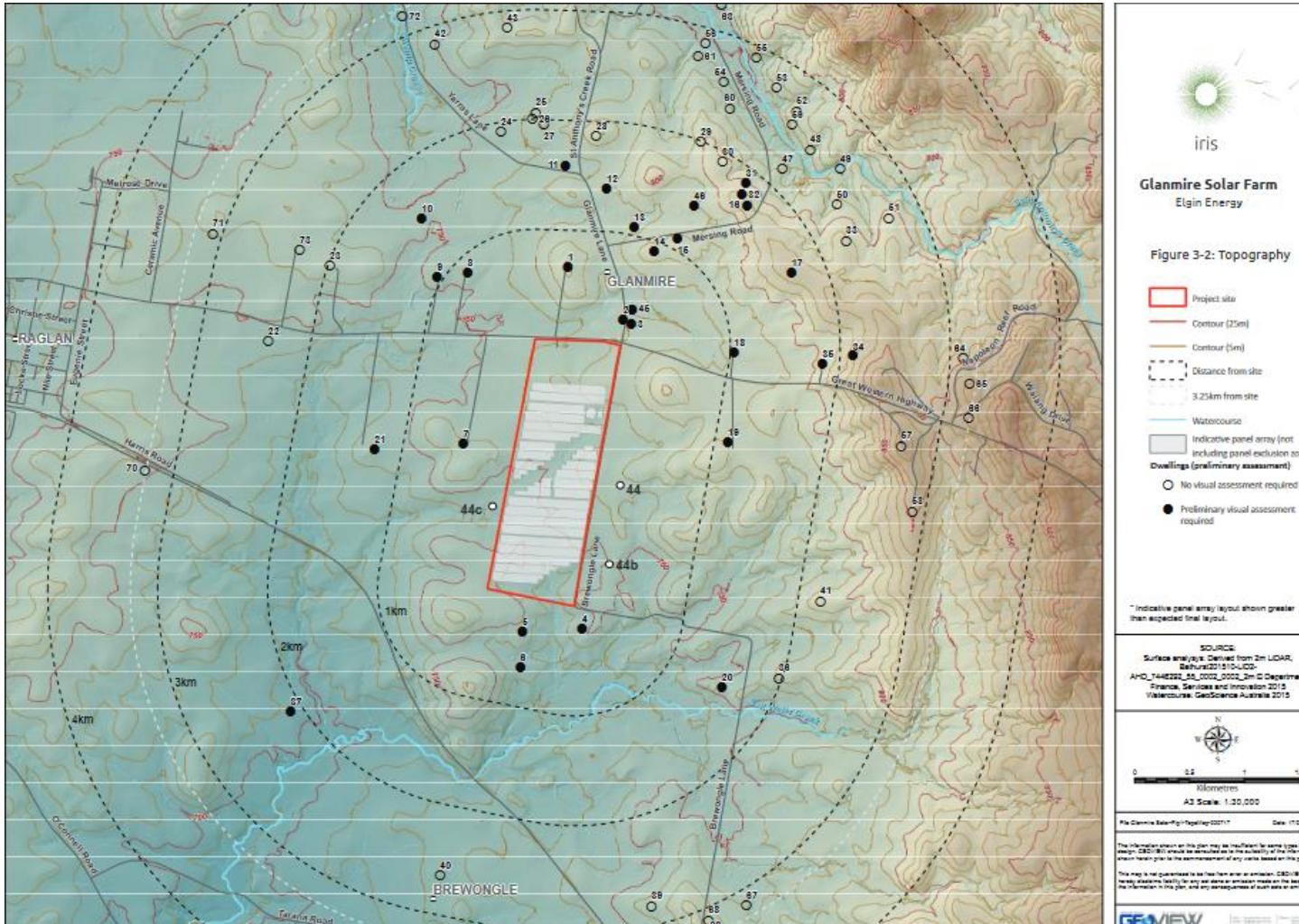
The results differ to the earlier assessment as follows:

The Glanmire Solar Farm project impacts on the follow LCS classes:

- LSC class 3 = 40.6 ha (an increase of 40.6 ha and representing 22% of the Study Area).
- LSC class 4 = 132.9 ha (a decrease of 39.1 ha).
- LSC class 5 = 12.6 ha (a decrease of 1.4 ha).

# 2. Key issues

## ii. Visual impacts



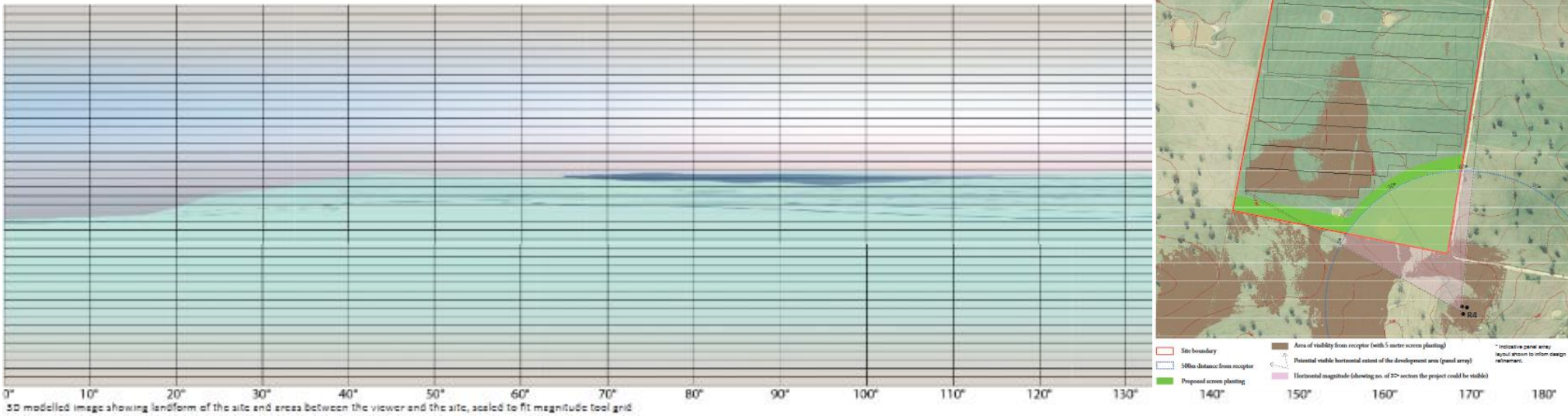
For residences the highest visual impacts are for :

- Unmitigated - low (2 dwellings; **R17** and **R34**) to very low (6 dwellings)
- Mitigated - very low (3 dwelling; **R4**, **R5**, **R7**) to nil (5)

## 2. Key issues

### ii. Visual impacts

The view shed modelling was used to design the southern set back for **R4** and R5.



Distance to development	Viewpoint type	Viewpoint sensitivity	Scenic quality	Overall sensitivity	Occupied cells	Magnitude rating	Impact rating	Impact rating with mitigation
215 metres	Rural dwelling, secondary view	Low	Moderate*	Low	5-6**	Very low	Very low	Very low

## 2. Key issues

### ii. Visual impacts

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#### Great Western Highway largely shielded

- 300 m set from the northern boundary,
- Existing vegetation and supplementary plantings proposed

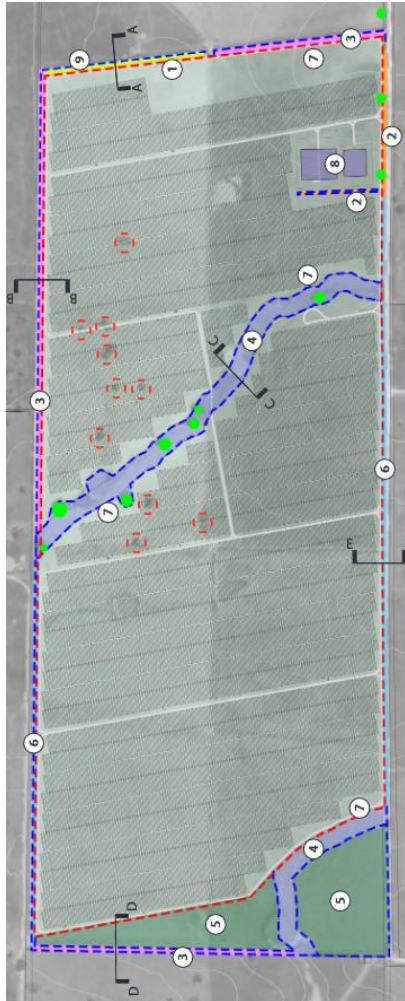
#### Highest visual impact will be along the public view point from Brewongle Lane

- Short term planting results are shown above



# 2. Key issues

## ii. Visual impacts

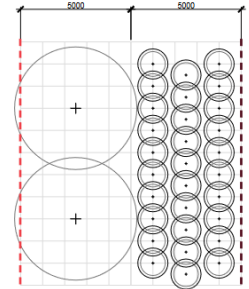


### Zones:

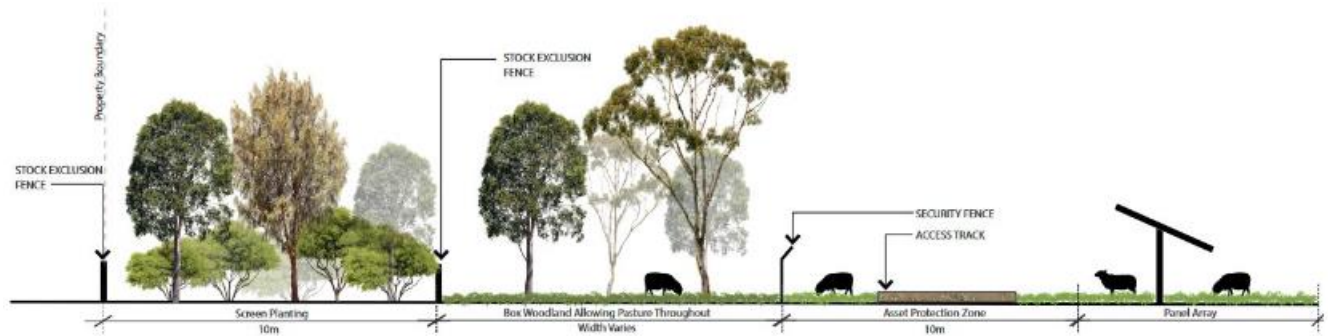
1. Supplementary native planting
2. 5m native screen planting
3. 10m native screen planting
4. Supplementary riparian planting
5. Pasture and open woodland
6. Linear tree planting

### Plant Species List

Scientific Name	Common Name	Height at Maturity	Source
<b>Trees</b>			
<i>Acacia dealbata</i>	Silver Wattle	10m	+>
<i>Acacia implexa</i>	Hickory Wattle	10m	>
<i>Acacia melanoxylon</i>	Black Wattle	10m	>
<i>Allocasuarina littoralis</i>	Blackwood	10m	>
<i>Allocasuarina verticillata</i>	Drooping Sheoak	10m	>
<b>Shrubs</b>			
<i>Acacia buxifolia</i>	Box leaf Wattle	4m	>
<i>Acacia genistifolia</i>	Early Wattle	3m	>
<i>Acacia rubida</i>	Red Stem Wattle	5m	*
<i>Bursaria spinosa</i>	Blackthorn	5m	>
<i>Callistemon citrinus</i>	Crimson Bottlebrush	3m	>
<i>Coprosma quadrifida</i>	Prickly Currant-bush	2-4m	>
<i>Daviesia latifolia</i>	Bitter Pea	3m	>
<i>Dadonea viscosa</i>	Hop Bush	4m	>
<i>Hakea dactyloides</i>	Finger Hakea	3m	>
<i>Leptospermum grandifolium</i>	Mountain Teatree	1.5-6m	>
<i>Leptospermum obovatum</i>	Tea Tree	3m	*



SECTION D-D



## 2. Key issues

### iii. Traffic and transport

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- **The State road network has sufficient capacity to accommodate construction traffic of projects that are approved and not yet constructed, as well as those currently under assessment and proposed.**
- **The project would not result in significant impacts on road network capacity, efficiency or safety**
- **Key mitigation includes:**
  - Road upgrades between the Great Western Highway and the site access from Brewongle Lane – sealing about 300m
  - Traffic Management Plan to manage:
    - Number and size of vehicles
    - Scheduling
    - Driver conduct protocols
    - Manage cumulative interactions (the McPhillamys Gold project was identified)
    - Provide for dilapidation surveys and repair of any damage caused by the project

## 2. Key issues

### iv. Socio-economic impacts

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<b>Community fund and contribution to assets</b>	<ul style="list-style-type: none"><li>• Annual payment of \$18,000 for the life of the project (consistent with the upper limit of \$300 per megawatt per annum)</li><li>• Sealing of 300m of brewongle lane will improve safety and dust at this intersection</li></ul>
<b>Economic stimulus</b>	<ul style="list-style-type: none"><li>• Up to 150 workers would be required over the 12-month construction period.</li><li>• Flow on stimulus to local services expected</li><li>• Broader benefits to the State through an injection of \$152 million in capital investment into the NSW economy.</li></ul>
<b>Accommodation and Employment Strategy</b>	<ul style="list-style-type: none"><li>• Prioritize employment of local workers</li><li>• Ensure there is sufficient accommodation for the workforce associated with the project</li><li>• Consider cumulative impacts with other projects in the area</li><li>• Both ensures the benefits of the project are spread to the local community and manages impacts</li></ul>
<b>Other social impacts</b>	<ul style="list-style-type: none"><li>• Hazards and risks – discussed below</li><li>• Land values and insurance – both are addressed by ensuring the project has low impact on neighbours and is well managed in all phases of the Project's life, as demonstrated</li></ul>

## 2. Key issues

### v. Decommissioning and rehabilitation

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<b>Security / bond</b>	<ul style="list-style-type: none"><li>• Commercial agreement with landowner</li><li>• Conditions require timing and degree of infrastructure removal</li><li>• Value of assets a further security (constituent materials include steel, copper, glass, rare minerals)</li></ul>
<b>Rehabilitation</b>	<ul style="list-style-type: none"><li>• Base line provided by high soil survey effort</li><li>• Most of the site will be shaded rather than have soil disturbance</li><li>• Construction and operational commitments include:<ul style="list-style-type: none"><li>• 3 months to restore post construction ground cover</li><li>• Maintain 70% ground cover through operation</li></ul></li><li>• Decommissioning commitments regarding soil and infrastructure</li></ul>
<b>Permanent impacts</b>	<ul style="list-style-type: none"><li>• Overall soil disturbance is estimated as 4% of the site.</li><li>• The Essential Energy substation area will be subdivided and accounts for 0.5 ha of the 186 ha development footprint</li><li>• Tracks and other infrastructure (ie tanks) may be retained by land owner</li><li>• Cabling more than 1m deep may be left (more impact to remove than leave in place)</li></ul>



## 2. Key issues

### vi. Hazards and risks

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- A potential hazard relevant to the project is that of a battery fire
- Risks of battery fire can be managed in design by providing minimum separation distance between BESS containers, asset protection zones, and use of non-combustible materials
- Bushfire risks can be suitably controlled through the implementation of standard fire management procedures
- Agency advice has been incorporated into the Fire safety study, Emergency response plan
- The project would comply with Planning for Bushfire Protection, regarding asset management zones and access around the site to ensure defensible space for fire fighting.

## 2. Key issues

### vii. Waste management and contamination

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<b>Waste streams</b>	<ul style="list-style-type: none"><li>• The use of the required resources is considered reasonable in light of the benefits of offsetting fossil fuel electricity generation.</li><li>• Wastes can be minimized in accordance with statutory requirements</li></ul>
<b>Reused / recycle</b>	<ul style="list-style-type: none"><li>• Solar panels and mounting system.</li><li>• Metals from posts, cabling, fencing.</li><li>• Buildings and equipment such as the inverters, transformers and similar components would be removed for resale or reuse, or for recycling as scrap.</li><li>• CSIRO is confident that lithium-ion batteries are highly recyclable would be used to manufacture new batteries in the future, as the demand for these batteries increases (CSIRO, 2019).</li></ul>
<b>Contamination</b>	<ul style="list-style-type: none"><li>• Risk of panel breakage is low (0.04%)</li><li>• BESS risks include release of electrolyte (liquid/ vented gas) from the battery cell, coolant leak and refrigerant leaks. The likelihood rating for these events resulting in consequences with controls in place was concluded as very unlikely.</li><li>• Management protocols are considered.</li><li>• Overall risk of contamination is considered negligible and no effects on human health have been identified.</li></ul>

## 2. Key issues

### viii. Energy security and grid connectivity (including BESS performance)

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#### **Augmentation of the existing 11kV line for 7.5km**

- Low risk, demonstrated by the EIS's risk assessment, specifically heritage and biodiversity were investigated
- Also aviation and visual impacts
- Concern regarding height of lines impacting harvesting machinery may be improved

#### **Grid connectivity**

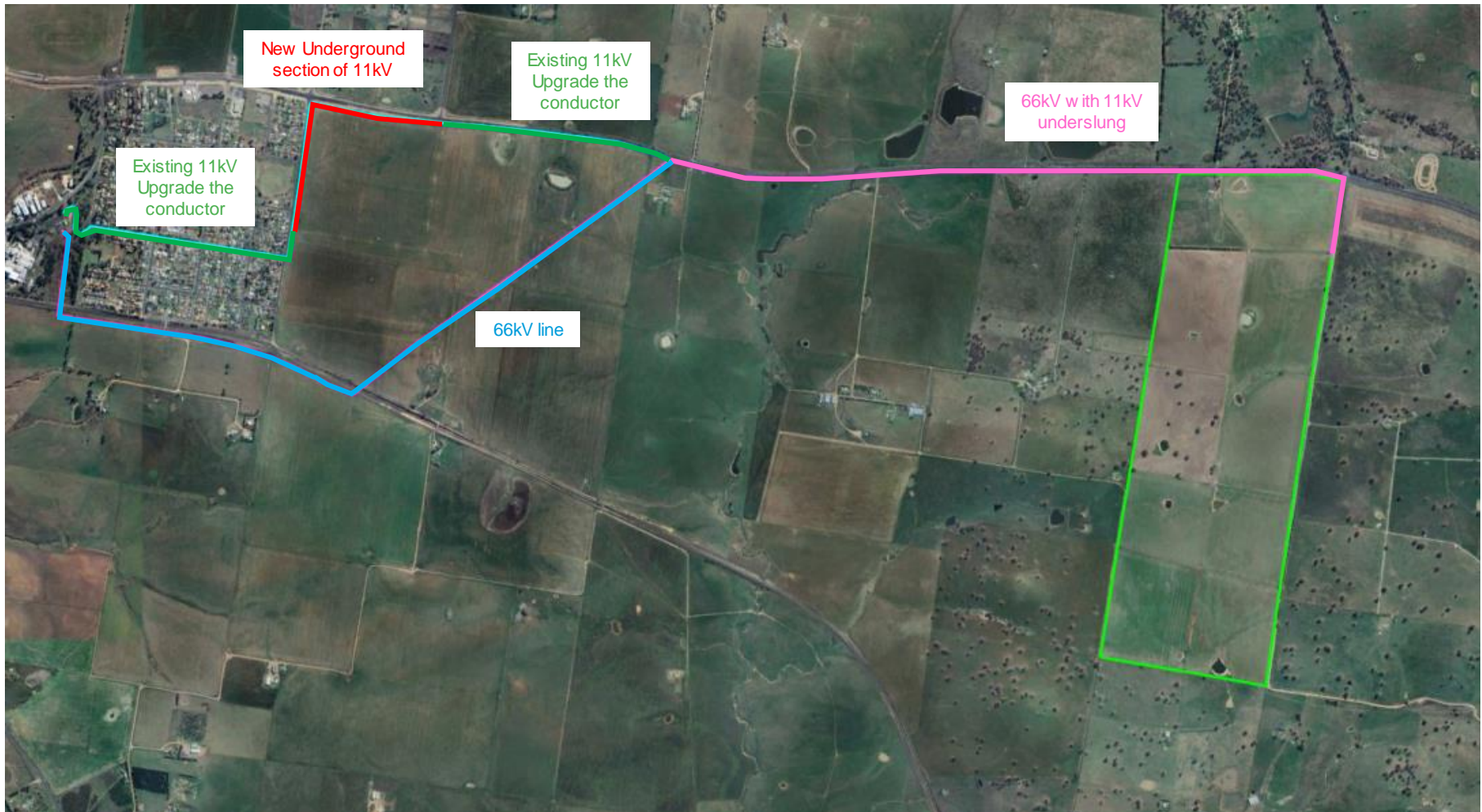
- Connection into the existing Raglan 11/66kV substation which has existing capacity to connect
- Existing powerline operating at 11kV will be upgraded to its initial design capacity of 66kV
- Secondary 11kV line to be upgraded

#### **BESS performance**

- Approximately 60MW/120MWh
- Plays an important part of NSW's transition away from coal-fired energy, towards renewable energy
- Allows storage of renewable energy during periods of abundant generation/low energy demand for export into the grid during periods of high demand
- Provides a fast injection of energy, or fast reduction of energy, to maintain the frequency of the system within the normal operating band

## 2. Key issues

### viii. Energy security and grid connectivity (including BESS performance)



## 2. Key issues

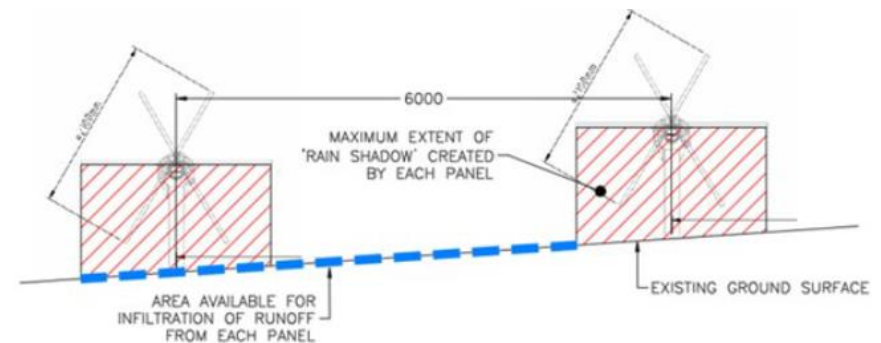
### ix. Ground cover management

#### Advantages to lessening agricultural practices over the life of the Project;

- Less soil disturbance to soil structure from cropping and harvesting activities.
- Less grazing intensity, specific triggers used to ensure a perennial cover is maintained as far as practical.
- Shading and microclimate effects likely to enhance soil moisture and reduce compaction, under the arrays, in comparison to agricultural use

S3 A Groundcover Management Plan would be developed in consultation with an agronomist and to ensure final land use includes perennial grass cover establishment across the site as soon as practicable after construction and maintained throughout the operation phase. The plan would cover:

- Soil handling, restoration and preparation requirements.
- Plant Species election.
- Soil preparation.
- Establishment techniques.
- Maintenance and monitoring requirements.
- Perennial groundcover targets, indicators, condition monitoring, reporting and evaluation arrangements – i.e. A target of 70% live grass cover would apply to protect soils, landscape function and water quality. Additional measures would be implemented where practical when live grass cover falls below 70%. Grass cover would be monitored on a fortnightly basis using an accepted methodology.
- Contingency measures to respond to declining soil or groundcover condition. I.e., any grazing stock would be removed from the site when cover falls below the target of 70% live ground cover.
- Identification of baseline conditions for rehabilitation following decommissioning.
- Preserve the native composition as much as possible.



## 3. Key Issues

### x. Heritage (Woodside Inn, Aboriginal cultural heritage)

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#### **Historic heritage**

Woodside” (formerly the Woodside Inn) is a cottage located at the northern end of the site that was constructed between 1850 and 1860. It is listed as locally significant under the Bathurst LEP and Council raised it in its submission.

The operational area of the solar farm would be located a minimum of 300 m from Woodside. The onsite buildings (site office, storage shed and amenities building) would be located within the area identified for the substation and BESS about 600 metres from the ‘Woodside Inn’. Due to the existing intervening vegetation and landform, there is unlikely to be a view from this location that would result in an adverse visual impact of any significance.

The proposed vegetation screening along the northern boundary of the site would also provide screening of views towards this area of the site.

The vegetation (existing and proposed) will screen the view of the solar array from the road and ensure the environmental context of Woodside Inn building remains intact. This will ensure no loss of heritage value to the Woodside Inn building.

#### **Aboriginal heritage**

Surveys identified two Aboriginal sites; a culturally modified tree within the riparian corridor which would be avoided and a n isolated artefact within the development footprint of low significance. In agreement with RAPs, this will be relocated to the riparian area and also avoided from further impacts.

Heritage NSW confirmed they agreed with the management recommendations outlined in Aboriginal Cultural Heritage Assessment Report and had no concerns.

## 2. Key Issues

### xi. Cumulative Impacts

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Project	Capacity (MW)	Status	Approximate distance from the project (km)
Central West Pumped Hydro	325	Proposed	15 (southeast)
Lake Lyell Pumped Hydro	350	Proposed	35 (southeast)
Wallerawang BESS	500	Approved	40 (northeast)
Mt Piper BESS	500	Proposed	40 (northeast)
Great Western BESS	500	Approved	40 (northeast)

## 3. DPE Assessment Report

### Summary

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#### **The key assessment issues identified for the project are energy transition, land use compatibility and visual amenity**

##### **The site has:**

- Good solar resources, available capacity on the existing electricity network and is consistent with the Department's revised Large-Scale Solar Energy Guideline in terms of site suitability criteria.

##### **The Project is:**

- Consistent with the Commonwealth's Renewable Energy Target and NSW's Climate Change Policy Framework and the Net Zero Plan Stage 1: 2020 – 2030.

##### **The Project would:**

- Contribute 60 MW of renewable energy to the National Electricity Market, powering approximately 23,000 homes and saving over 127,150 tonnes of greenhouse gas emissions per year.

##### **The development footprint:**

- Has been designed to avoid site constraints such as items of heritage value, watercourses, native vegetation, and limit visual impact.

##### **The inherent agricultural capability of the land:**

- Would not be affected, the overall agricultural productivity of the region would not be significantly reduced.

##### **Visual impacts:**

- Would be nil to low impact at all residences, due to distance, topography and the extent of intervening vegetation along the project boundary, and Elgin's proposed screen planting.

##### **Flow on benefits:**

- Include up to 150 construction jobs, \$18,000 per annum contributions to Council for the life of the project, broader benefits to the State through an injection of \$152 million in capital investment into the NSW economy.



# 3. DPE Assessment Report

## Conditions

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### Key Management Plans:



Landscape management plan



Ground cover management plan / Soil and water management plan / Rehabilitation plan



Traffic management plan



Biodiversity management plan / Aboriginal heritage cultural management plan

- Vegetation Buffer
- Land Management
- Decommissioning and Rehabilitation
- Traffic Management Plan
- Biodiversity Management Plan
- Cultural Heritage Management Plan