

Department of Planning and Environment

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# Glanmire Solar Farm

State Significant Development Assessment Report (SSD 21208499)

November 2023





# Acknowledgement of Country

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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# Preface

This assessment report provides a record of the Department of Planning and Environment's (the Department) assessment and evaluation of the State significant development (SSD) application for the Glanmire Solar Farm, located approximately 10 kilometres east of Bathurst, lodged by Elgin Energy Pty Ltd. The report includes:

- an explanation of why the project is considered SSD and who the consent authority is;
- an assessment of the project against government policy and statutory requirements, including mandatory considerations;
- a demonstration of how matters raised by the community and other stakeholders have been considered;
- an explanation of any changes made to the project during the assessment process;
- an assessment of the likely environmental, social and economic impacts of the project;
- an evaluation which weighs up the likely impacts and benefits of the project, having regard to the proposed mitigations, offsets, community views and expert advice; and provides a view on whether the impacts are on balance, acceptable; and
- an opinion on whether the project is approvable or not, along with the reasons, to assist the Independent Planning Commission in making an informed decision about whether development consent for the project can be granted and any conditions that should be imposed.

# Executive Summary

Elgin Energy Pty Ltd (Elgin) proposes to develop the Glanmire Solar Farm (the project), a new State significant development (SSD) located approximately 10 kilometres (km) east of Bathurst, in the Bathurst Regional Council local government area (LGA).

The project involves the construction of a solar farm with a generating capacity of approximately 60 megawatts (MW), along with the upgrading and decommissioning of infrastructure and equipment over time. The project also includes a 60 MW / 120 MW-hour (MWh) battery energy storage system (BESS) and on-site substation, with connection to an existing transmission line operated by Essential Energy via an underground powerline.

The Department publicly exhibited the EIS from 18 November 2022 until 15 December 2022. In response to the exhibition, the Department received 143 public submissions, consisting of 133 unique objections, nine supporting submissions and one comment. The Department also received a submission from Bathurst Regional Council and advice from 14 government agencies.

Submissions objecting to the project cited a range of issues, with the key issues including land compatibility, loss of agricultural land and visual impacts. Submissions in support generally pointed to the benefits of transitioning to renewable energy sources in order to assist in achieving the Government's emission reduction targets and the sustainable use and diversification of agricultural land.

The Department has undertaken a comprehensive assessment of the merits of the project and considered all potential issues in accordance with the requirements of the *Environmental Planning and Assessment Act 1979*. The key assessment issues identified for the project are energy transition, land use compatibility and visual amenity.

The site is comprised largely of cleared cropping and grazing land, with less than 1 hectare (ha) of native vegetation in the development footprint. The site is bounded by the Great Western Highway to the north and Brewongle Lane to the east, and an existing 66kV transmission line (currently operated at 11kV) is located adjacent to the northern boundary. Consistent with the Department's revised Large-Scale Solar Energy Guideline, the development footprint has been designed to avoid site constraints such as items of heritage value, watercourses, native vegetation, and Biophysical Strategic Agricultural Land (BSAL).

Although the project would include disturbance to a small area of Class 3 land (approximately 39.5 ha), the Department considers that the inherent agricultural capability of the land would not be affected, and the overall agricultural productivity of the region would not be significantly reduced. The site would be returned to agricultural uses following decommissioning and rehabilitation.

The solar farm is relatively low-lying (solar panels up to 3.5 m high) and the visual assessment concluded that the visual impact for all residences surrounding the site would be nil to low due to distance, topography and the extent of intervening vegetation along the project boundary, and Elgin's proposed screen planting.

While the introduction of the project would represent a change to the local rural landscape, the Department considers that Elgin's proposed mitigation measures, including screen planting, would adequately reduce the potential visual impacts of the project to an acceptable level, consistent with the Department's revised Large-Scale Solar Energy Guidelines.

Overall, the Department considers the site to be appropriate for the project as it 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 addition, 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*, as it would contribute 60 MW of renewable energy to the National Electricity Market, enough to power approximately 23,000 homes and save over 127,150 tonnes of greenhouse gas emissions per year.

The project would also provide other flow on benefits to the local community, including up to 150 construction jobs and contributions to Council through a voluntary planning agreement for community enhancement projects valued at \$18,000 per annum for the life of the project. There would be broader benefits to the State through an injection of \$152 million in capital investment into the NSW economy.

The Department considers the project would not result in any significant impacts on the local community or the environment, and any residual impacts can be managed through the implementation of the recommended conditions.

The Department considers that the project would result in benefits to the State of NSW and the local community and is therefore in the public interest and approvable.

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# 1 Introduction

## 1.1 Project

1. Elgin Energy Pty Ltd (Elgin), proposes to develop a 60 megawatt (MW) State significant development (SSD) solar farm and associated battery energy storage system (BESS), approximately 10 kilometres (km) east of Bathurst, in the Bathurst Regional Council (Council) local government area (LGA) (see **Figure 1**).
2. The project would include a 60 MW / 120 MW-hour (MWh) BESS, an on-site substation and connection to the existing 66 kilovolt (kV) transmission line operated by Essential Energy via an underground powerline (see **Figure 2**). It also involves the upgrading and decommissioning of equipment over time.
3. The existing 66 kV infrastructure currently operates at 11 kV and would need to be refurbished by Essential Energy for a distance of approximately 7 km so the project can connect to the electricity grid and export energy, and would be subject to separate assessment under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The refurbishment would require replacing of approximately 47 poles and soil disturbance and vegetation clearing works.
4. Access to the site is proposed via the Great Western Highway and Brewongle Lane. The solar farm would be constructed over approximately 12 months, with a peak construction period of 4 months.
5. The key components of the project are summarised in **Table 1**, shown in **Figure 2**, and described in detail in the Environmental Impact Statement (EIS) and supporting documentation (see **Appendices A, C, D and F**).





**Figure 1 | Project Location**

**Table 1 | Key Components of the Project**

Aspect	Description
<b>Project summary</b>	<p>The project includes:</p> <ul style="list-style-type: none"> <li>• a generating capacity of approximately 60 MW;</li> <li>• approximately 128,000 solar panels mounted on single-axis tracking system (up to 3.5 m high), supported by approximately 35 inverters, transformers and associated control equipment;</li> <li>• underground and aboveground cabling between solar panels and inverters/transformer stations;</li> <li>• an on-site substation and connection into Essential Energy’s 66 kV transmission lines;</li> <li>• a lithium-ion BESS with up to 60 MW / 120 MWh capacity, located in the north-eastern portion of the site near the substation; and</li> <li>• internal access tracks, staff amenities, control buildings, maintenance buildings, offices, laydown areas, car park, watercourse crossings and security fencing.</li> </ul>
<b>Project area</b>	<ul style="list-style-type: none"> <li>• Site: approximately: 186 ha</li> <li>• Development footprint: 159 ha</li> </ul>
<b>Site entry and access route</b>	<ul style="list-style-type: none"> <li>• The proposed access route is from Port Botany (Sydney), via the M4 Motorway, Great Western Highway and Brewongle Lane.</li> <li>• All vehicles would access the site via a new entry point off Brewongle Lane.</li> </ul>
<b>Road upgrades</b>	<p>Road upgrades proposed:</p> <ul style="list-style-type: none"> <li>• construction of a new site access point off Brewongle Lane; and</li> <li>• sealing of Brewongle Lane from its intersection with the Great Western Highway to the new site access point.</li> </ul>
<b>Construction</b>	<ul style="list-style-type: none"> <li>• The construction period is expected to take 12 months, with a peak period of approximately 4 months.</li> <li>• Construction hours limited to Monday to Friday 7am to 6pm and Saturday 8am to 1pm.</li> </ul>
<b>Operation</b>	<ul style="list-style-type: none"> <li>• The expected operational life of the infrastructure is approximately 40 years. However, the project may involve infrastructure upgrades that may extend the operational life.</li> <li>• The solar farm and BESS would operate 24 hours a day, seven days a week.</li> </ul>
<b>Decommissioning and rehabilitation</b>	<p>At the end of the project life, all infrastructure would be removed and the land rehabilitated.</p>
<b>Subdivision</b>	<p>Subdivision would be required to facilitate connection to the transmission network and for the onsite substation (which would become the property of Essential Energy).</p>
<b>Employment</b>	<p>Up to 150 construction jobs and up to 3 operational jobs.</p>
<b>Capital Investment Value</b>	<p>\$152 million.</p>

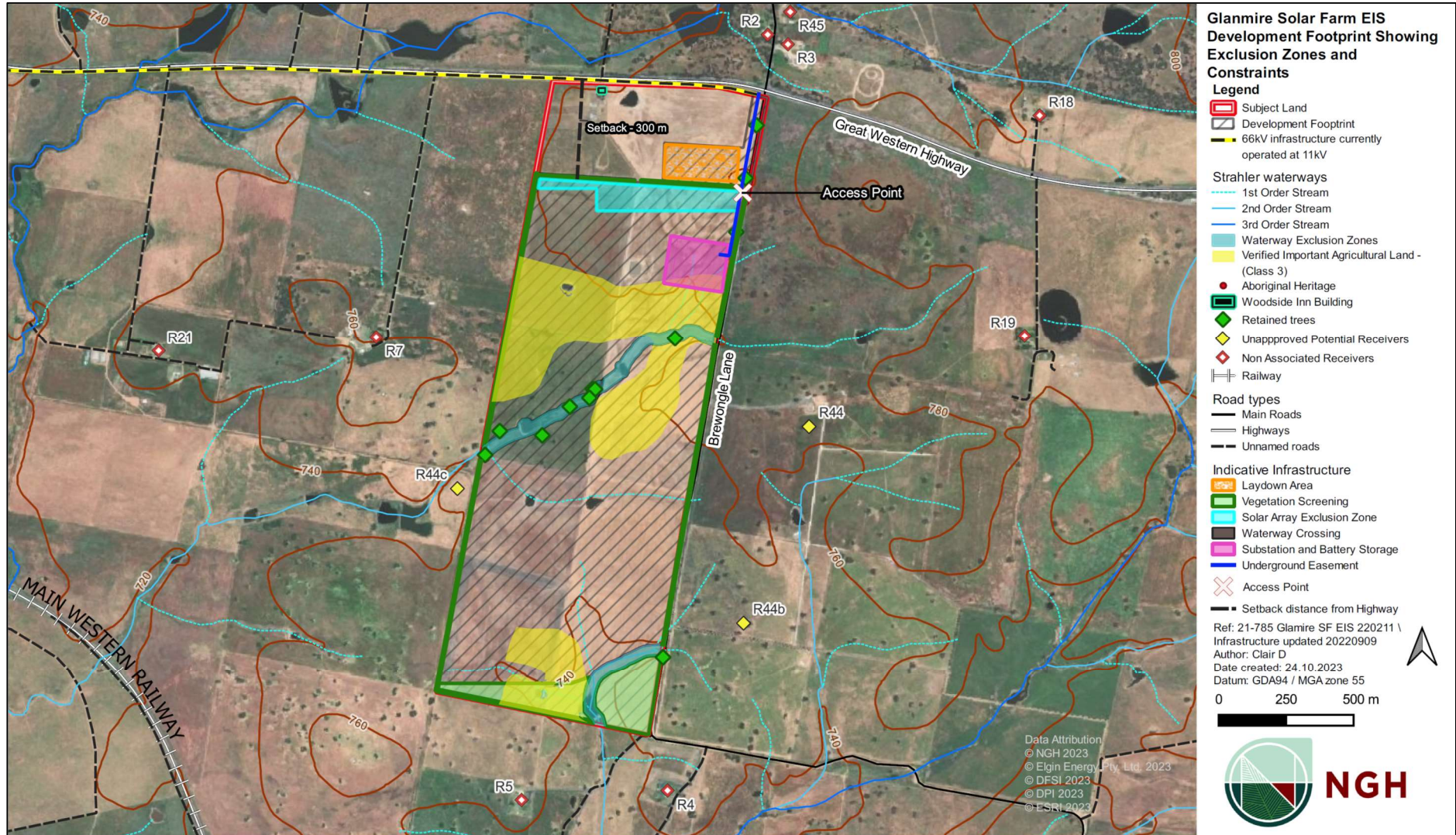


Figure 2 | Indicative Project Layout

## 2 Strategic context

### 2.1 Site and Surrounds

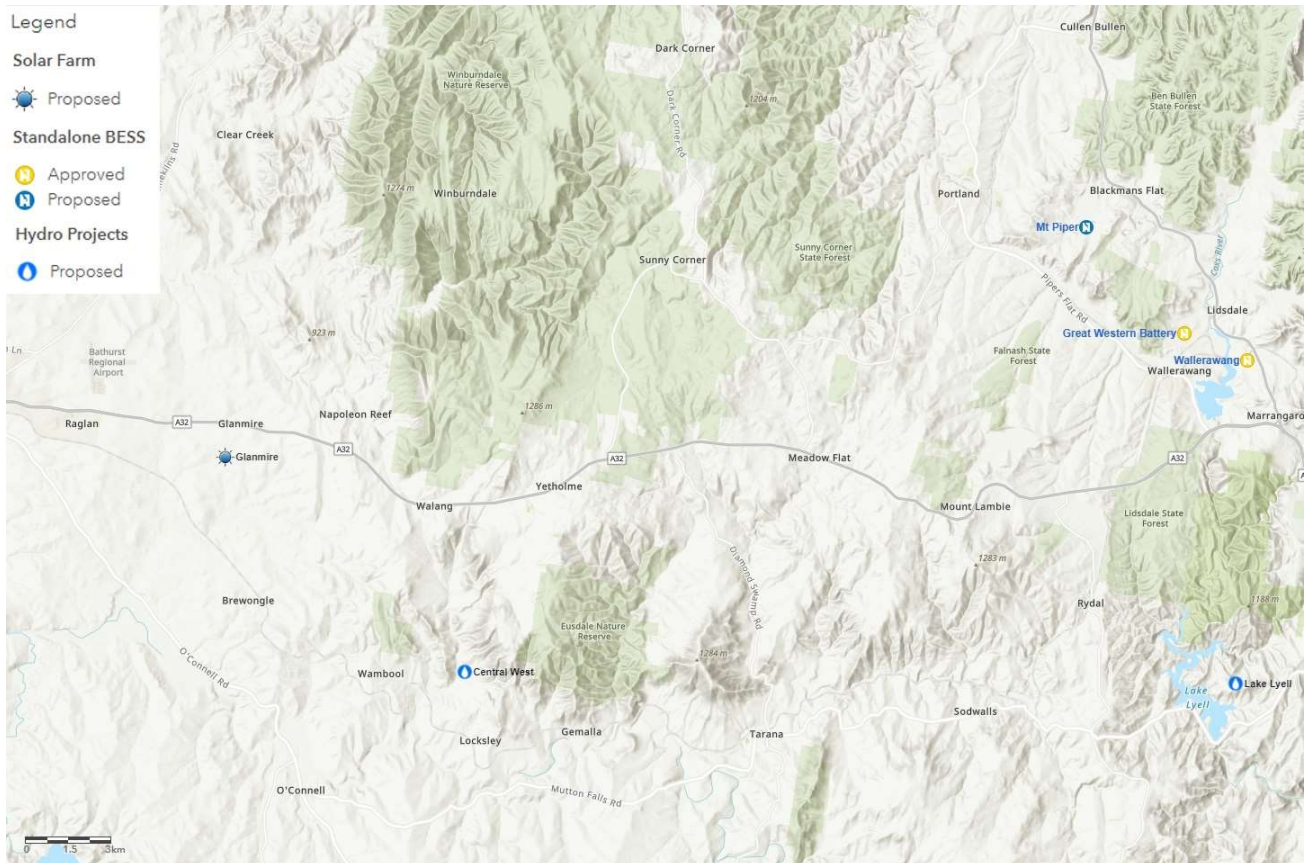
6. The site is comprised largely of cleared cropping and grazing land zoned RU1 (Primary Production), with less than 1 ha of native vegetation mapped in the development footprint. The surrounding land is also zoned RU1 and used predominantly for agricultural purposes.
7. The site is bound by the Great Western Highway to the north and Brewongle Lane to the east and an existing 66kV transmission line (currently operated at 11kV) is located adjacent to the northern boundary. The Main Western Railway is located approximately 1 km to the south-west.
8. The development footprint has been designed to avoid site constraints such as items of heritage value, watercourses and native vegetation, and it does not contain land mapped as Biophysical Strategic Agricultural Land (BSAL). The majority of the site (approximately 72%) is classified as soil and land capability Class 4 (moderate to severe limitations), with the remainder comprising Class 3 (high capability, approximately 22%) and Class 5 (severe limitations, approximately 6%) land.
9. The site is traversed by several ephemeral first and second order streams which are tributaries of Salt Water Creek, located approximately 1.5 km south at its closest point. There are also nine small farm dams within the site, mostly along on these watercourses.
10. There are 34 residences located within 2 km of the site, with the closest non-associated residences (R4 and R3) located 215 m south and 220 m north-east of the site (see **Figure 2**).
11. Consultation with near neighbours by the applicant has determined the possibility of three future residences. Two residences are proposed to be located to the east of the development area and one proposed to the west. All three potential future residences have been determined to be within a 1 km radius of the development footprint.

### 2.2 Other Energy Projects

12. There are five State significant renewable energy projects within 50 km of the project site (see **Table 2** and **Figure 3**). Central West Pumped Hydro (15 km southeast), Lake Lyell Pumped Hydro (35 km southeast) and Mount Piper BESS (40 km northeast) are all in the early stages of the planning process and are yet to submit development applications. Wallerawang BESS (40 km northeast) was approved in August 2022 and Great Western BESS (40 km northeast) was approved in November 2023.
13. Potential cumulative impacts at a regional level relate to the loss in agricultural land and workforce accommodation. The broader potential cumulative impact on agricultural land in the region is discussed further in **Section 5.2** and workforce accommodation is addressed in **Section 5.4**.
14. Potential cumulative impacts on the local roads along the proposed transport route from these projects is discussed further in **Section 5.4**.

**Table 2 | Nearby Renewable Energy Projects**

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)



**Figure 3 | Nearby SSD Renewable Energy Projects**

## 2.3 Renewable Energy Context

15. As the transition from coal-fired power to renewable energy sources accelerates in NSW, there is an increasing need for renewable energy generation sources, including energy storage. NSW is one of the nation's leaders in large-scale solar and the project aligns with a range of national and state policies to provide energy security and reliability, as outlined in **Table 3**.

**Table 3 | Energy Context**

Policy / year	Summary
<i>Australia's Long Term Emissions Reduction Plan (2021)</i>	Sets a pathway to net zero emissions by 2050 and affirms Australia's commitment to meeting its revised 2030 target (43% below 2005 levels).
<i>Australian Energy Market Operator's 2022 Integrated System Plan (ISP)</i>	Notes that: <ul style="list-style-type: none"> <li>without coal, investment is needed to meet significantly increased electricity demand requiring a nine-fold increase in large-scale variable renewable energy generation (wind and solar); and</li> <li>a mix of solar and wind is needed, as they offer complementary daily and seasonal profiles.</li> </ul>
<b>NSW:</b> <i>Climate Change Policy Framework (2016); Transmission Infrastructure Strategy (2018); Electricity Strategy (2019); Electricity Infrastructure Roadmap (2020); Net Zero Plan Stage 1: 2020 – 2030 (2020) and Implementation update (2022); Central West and Orana Regional Plan 2041</i>	Relevant aspects of these policy documents include: <ul style="list-style-type: none"> <li>aims to achieve net zero emissions in NSW by 2050 and reduce emissions by 70% below 2005 levels by 2035;</li> <li>notes that all coal fired power plants in NSW are scheduled for closure within the next twenty years;</li> <li>aimed at encouraging investment in new electricity infrastructure and unlocking additional generation capacity in order to ensure secure and reliable energy in NSW; and</li> <li>regional goals to support the State's transition to lower emissions and Council's goals to promote renewable energy production.</li> </ul>

16. The project would have direct access to the electrical grid. With a capacity of 60 MW, the project would generate enough electricity to power approximately 23,000 homes and save over 127,150 tonnes of greenhouse gas emissions per year.
17. Accordingly, the Department considers that the project is consistent with the policy documents outlined above which identify the need to diversify the energy generation mix and reduce the carbon emissions intensity of the grid, while providing energy security and reliability.

## 2.4 NSW Solar Guideline

18. The Department released the *Large-Scale Solar Energy Guideline* in December 2018 to provide the community, industry, and regulators with guidance on the planning framework for assessing large-scale solar projects and identifying the key planning considerations relevant to solar energy development in NSW.
19. The Guideline was revised in August 2022 following extensive consultation, to ensure the assessment of large-scale solar energy projects continues to be transparent, consistent and supported by the best available information. While the revised guideline does not strictly apply to this project, as SEARs had been issued prior to August 2022 and the EIS was lodged prior to the end of January 2023, the project is broadly consistent with the principles in the revised guideline.
20. The Guideline recognises that large-scale solar projects could help to reduce reliance on fossil fuels, thereby contributing to reduction in air pollution and greenhouse gas emissions, while also supporting regional NSW through job creation and investment in communities that may not have similar opportunities from other industries.

# 3 Statutory context

## 3.1 State Significant Development

21. The project is classified as SSD under Section 4.36 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This is because it triggers the criteria in Clause 20 of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), as it is development for the purpose of electricity generating works with a capital investment value of more than \$30 million.
22. Under Section 4.5(a) of the EP&A Act and clause 1 (b) of section 2.7 of the Planning Systems SEPP, the Commission is the consent authority for the development as the project received more than 50 unique public submissions by way of objection.

## 3.2 Amended Application

23. In accordance with section 37 of the EP&A Regulation, a development application can be amended at any time before the application is determined. Elgin sought to amend its application, the details of which are summarised in **Section 4.5** of this report.
24. An application can be amended with the agreement of the consent authority (i.e. the Commission for this development), however, under the delegation dated 14 June 2022, the Director, Energy Assessments can agree to amendments to an application.

25. The Department accepted the amended application for the following reasons:
- the project amendments did not increase the impacts of the project as a whole;
  - Elgin assessed the impacts of the amended project (see **Appendix D**); and
  - the Department made the additional information available online and sent it to the relevant agencies for comment.

### 3.3 Permissibility

26. The site is located on land zoned RU1 – Primary Production, under the *Bathurst Local Environmental Plan 2014* (Bathurst LEP), the provisions of which are discussed in **Section 5.2**.
27. A solar farm is permissible with consent under the Bathurst LEP on land zoned RU1.

### 3.4 Integrated and Other Approvals

28. Under Section 4.41 of the EP&A Act, a number of other approvals are integrated into the SSD approval process, and therefore are not required to be separately obtained for the proposal.
29. Under Section 4.42 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any development consent for the proposal (e.g. approvals for any works under the *Roads Act 1993*).
30. The Department has consulted with the relevant government agencies responsible for the integrated and other approvals, considered their advice in its assessment of the project, and included suitable conditions in the recommended conditions of consent to address these matters (see **Appendix G**).
31. Elgin considers that the project does not need approval from the Commonwealth Minister for the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as assessments undertaken to date have not identified any significant impacts on matters of national environmental significance listed under the EPBC Act.

### 3.5 Mandatory Matters for Consideration

32. Section 4.15 of the EP&A Act outlines the matters that a consent authority must take into consideration when determining development applications. The Department has considered these matters in its assessment of the projects well as Elgin’s consideration of environmental planning instruments in its EIS, as summarised in **Section 5** of this report. The Department has also considered relevant provisions of the environmental planning instruments in **Appendix I**.
33. Section 2.42 of the Transport and Infrastructure SEPP outlines the matters that a consent authority must take into consideration before granting consent as the site is located on the periphery of the regional city Bathurst (Transport and Infrastructure SEPP Regional Cities Map – Bathurst). These considerations are discussed in detail in **Section 5.2**.



# 4 Engagement

## 4.1 Departments Engagement

34. The Department publicly exhibited the EIS from 18 November 2022 until 15 December 2022, advertised the exhibition in the *Bathurst Western Advocate*, and notified landowners within 3 km of the project boundary.
35. The Department consulted with Council and relevant government agencies throughout the assessment, and inspected the site on 3 August 2022. The Department also notified and sought comment from Transgrid and Transport for NSW (TfNSW) in accordance with the Transport and Infrastructure SEPP.

## 4.2 Summary of advice from government agencies

36. During exhibition of the EIS, the Department received advice from 14 government agencies. A summary of the agency advice is provided in **Table 4**. A link to the full copies of the advice is provided in **Appendix E**.

**Table 4 | Summary of Agency Advice**

Agency	Key Issues
<b>Biodiversity and Conservation Division (BCD)</b>	<p>BCD sought clarification on the area of impact, and justification on the extent of Category 1 Land mapped within the site, along with requesting corrections to mapping of species polygons, justification for the use of the scattered tree module and consistency between the BAM-C and the BDAR. BCD confirmed the revised BDAR addressed its concerns.</p> <p>BCD also made comment regarding the proposed assessment pathway for the grid connection works proposed to be assessed by Essential Energy under Part 5 of the EP&amp;A Act (see <b>Section 5.4</b>).</p>
<b>Department of Primary Industries – Agriculture</b>	<p>Department of Primary Industries – Agriculture (DPI Agriculture) recommended a number of conditions such as the development of a decommissioning management plan. DPI Agriculture also requested an updated agricultural productivity assessment using the latest data.</p> <p>Following their review of the Submissions Report and Amendment Report, DPI Agriculture confirmed its concerns had been adequately addressed</p>
<b>Department’s Water Group</b>	<p>The Department’s Water Group (DPE Water) sought clarification regarding construction and operational water supply arrangements and recommended that works within waterfront land are in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land</i>.</p>

Agency	Key Issues
<b>Fire and Rescue NSW</b>	Fire and Rescue NSW recommended a number of conditions, including the development of an Emergency Response Plan and Fire Safety Study.
<b>Heritage NSW</b>	Heritage NSW confirmed they agreed with the management recommendations outlined in Aboriginal Cultural Heritage Assessment Report and had no concerns.
<b>Transgrid</b>	Transgrid raised no objections to the project and recommended a due diligence review is conducted to confirm that all grid connection works are considered within the EIS.
<b>Essential Energy</b>	Essential Energy raised no objections to the project and confirmed they will carry out connection work under Part 5 of the EP&A Act, with Essential Energy to be the determining authority.
<b>NSW Rural Fire Service (RFS)</b>	NSW RFS raised no objections subject to compliance with <i>Planning for Bush Fire Protection 2019</i> .
<b>Transport for NSW</b>	<p>Transport for NSW (TfNSW) initially raised concerns regarding the SIDRA analysis, road haulage and OSOM route, swept path analysis and RAVMAP restrictions.</p> <p>Following review of the revised traffic assessment, and additional information, TfNSW confirmed its concerns had been addressed, subject to the implementation of a Traffic Management Plan, including provisions for managing light vehicles.</p>

37. The NSW Environment Protection Authority (EPA), Crown Lands, Heritage Council, Department of Regional NSW – Mining, Exploration and Geoscience (MEG) and Department of Primary Industries – Fisheries confirmed they had no concerns.

### 4.3 Summary of Council’s submission

38. Council provided comments during the exhibition of the EIS and throughout assessment of the project. In particular, Council sought additional information regarding the alignment of the project with the regional and local land use plans, impacts on agricultural land, visual amenity, traffic and historic heritage.
39. Following review of the submissions report and amendment report, Council confirmed that its concerns had been addressed.
40. Elgin has reached an in-principle agreement with Council to enter into a Voluntary Planning Agreement (VPA), consisting of an annual payment of \$18,000 for the life of the project.

## 4.4 Summary of public submissions

41. During the exhibition period, the Department received 143 unique submissions from the public (including six interest groups), of which 133 objected, nine were in support and one provided comment. A summary of the proximity of public submissions is in **Table 5**.
42. A full copy of the public submissions is provided in **Appendix B**.

**Table 5** | Public submissions on the EIS

Submitter distance to development footprint (km)	Number of submissions	Position
<2	23	Object
2 to 5	23	Object
	1	Support
5 to 15	1	Comment
	34	Object
	6	Support
15 to 50	26	Object
	1	Support
>50	27	Object
	1	Support

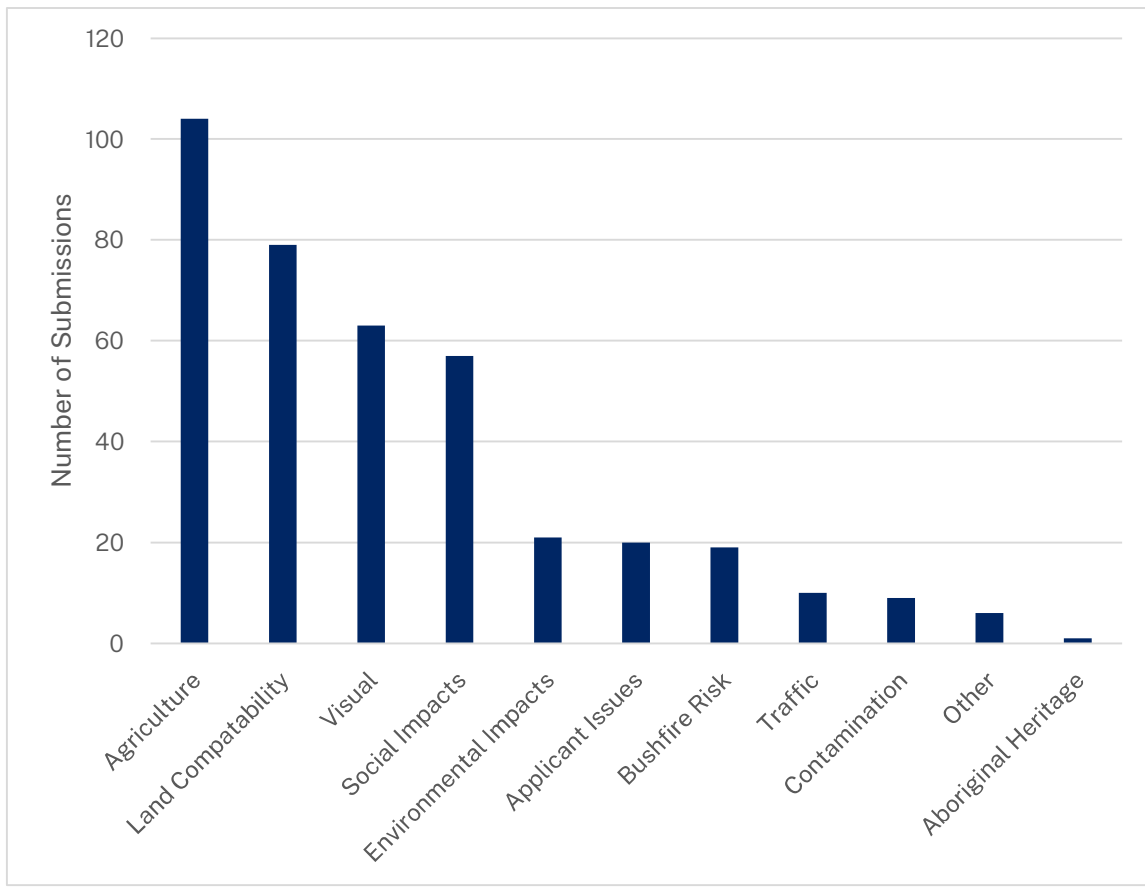
### 4.4.1 Submissions in support

43. Public submissions in support of the project generally pointed to the benefits of transitioning to renewable energy sources in order to assist in achieving the Government's emission reduction targets and the sustainable use and diversification of agricultural land.
44. These submissions also discussed economic benefits to the local community and the minimal environmental impact of the project due to the cleared nature of the site.

### 4.4.2 Submissions in objection

45. Public submissions objecting to the project cited a range of issues, with the key issues including loss of agricultural land, land compatibility and visual impacts (see **Figure 4**).
46. The Department has undertaken a detailed assessment of these issues in **Sections 5.1, 5.2 and 5.3** respectively, including consideration of advice from Government agencies and Council.

- 47. Public objections also raised concerns about the project’s potential social impacts (primarily relating to impacts on insurability of surrounding residences and land devaluation) a number of submissions also commented on the fact that Elgin is foreign-owned.
- 48. Bushfire risk, environmental impacts (including biosecurity, local heat island effect and air quality), traffic, land contamination, Aboriginal heritage and other impacts (e.g. scepticism of renewable energy and issues with the planning process) were also raised in a small number of submissions (see **Figure 4**).
- 49. A further breakdown and summary of key issues raised by the public is summarised in **Appendix H. Section 5** of this report provides a summary of the Department’s consideration of these matters and recommended conditions.



**Figure 4 | Key Issues Raised in Objections**

### 4.5 Response to submissions

- 50. Following the public exhibition period, the Department asked the applicant to respond to the issues raised in submissions and the advice received from government agencies.
- 51. Elgin provided a response to submissions report (see **Appendix C**). and provided additional information during the Department’s assessment (see **Appendix F**).
- 52. The Department published the submissions report on the NSW planning portal and forwarded the submissions report to relevant government agencies and Council for comment.

## 4.6 Amendment report

53. Elgin also amended its application to extend the onsite storage duration of the BESS from one to two hours (see **Appendix D**).
54. Along with the submissions report, the Department published the amendment report on the NSW planning portal and forwarded the submissions report to relevant government agencies and Council for comment.

# 5 Assessment

55. The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the key assessment issues for the project, namely energy transition, land use compatibility and visual amenity.
56. The key constraints for the project are shown in **Figure 2**. The Department has also considered the full range of potential impacts associated with the project and has included a summary of the conclusions in **Section 5.4**.

## 5.1 Energy transition

57. The project aligns with a range of national and state policies, which identify the need to diversify the energy generation mix and reduce the carbon emissions intensity of the grid while providing energy security and reliability.
58. With a generating capacity of 60 MW, the solar farm would generate enough electricity to power about 23,000 homes. This is consistent with the *NSW Climate Change Policy Framework* of achieving net zero emissions by 2050. The inclusion of a battery would enable the project to store solar energy for dispatch to the grid outside of daylight hours and/or during peak demand, increasing grid stability and energy security. As such, the project would play an important role in:
  - increasing renewable energy generation and capacity;
  - firming the grid by including 60 MW / 120 MWh of energy storage; and
  - contributing to the transition to a cleaner energy system as coal fired generators retire.
59. The existing transmission line currently operates at 11 kV and would need to be refurbished for 11 km by Essential Energy to operate at 66kV. Elgin and Essential Energy propose that this would be subject to separate assessment under Part 5 of the EP&A Act. While this is a valid assessment pathway under the EP&A Act, the project is not viable without these works being undertaken. Therefore the Department has recommended that the relevant approvals are obtained for these works prior to the development consent commencing for this project.
60. The project, while not located in a declared Renewable Energy Zone, is in an area with access to the transmission network, subject to upgrades, with available capacity, on land where solar development is permissible on RU1 zoned land with consent.

61. As such, the project would play an important role in increasing renewable energy generation and capacity and contributing to the transition to a cleaner energy system as coal fired generators retire.

## 5.2 Compatibility of proposed land use

62. The Department acknowledges that land use compatibility was a key concern raised in public submissions during the exhibition period (see **Section 4.4**).
63. In particular, the submissions raised concerns regarding the location of the project within the current rural landscape and potential loss of agricultural land. Detailed consideration of these issues is provided below.

### 5.2.1 Provisions of the Bathurst LEP

64. The site is located on land within the RU1 Primary Production zone under the Bathurst LEP. As discussed in **Section 3.3**, a solar farm is a permissible land use with consent under the Bathurst LEP.
65. The project is also consistent with the objectives of RU1 zoning under the Bathurst LEP, particularly by:
- providing diversity in primary industry enterprises and systems appropriate for the area;
  - minimising the fragmentation and alienation of resource lands;
  - minimising conflict between land uses within this zone and within adjoining zones; and
  - providing for a range of compatible land uses that are in keeping with the rural character of the locality.
66. While the Bathurst LGA has traditionally relied upon food manufacturing and agriculture, the introduction of solar energy generation would contribute to a more diverse local economy, thereby supporting the local economy and community. In addition, the proposed solar farm would encourage renewable energy development which is consistent with the *Bathurst Region Economic Development Strategy 2018-2022* and the *Bathurst Regional Council Renewable Energy Action Plan 2020*.
67. Further, the development is consistent with key government strategic planning guidance, including the *Central West and Orana Regional Plan 2041*, which includes a direction to leverage new renewable energy opportunities and contribute to the State's transition to lower emissions. The plan identifies renewable energy generation as a future growth opportunity for the region.
68. While the Department considers that the project is compatible with the LEP, and broader strategic planning objectives for the site, the project's impacts on other land uses are further discussed in **Section 5.2.3.3**.

### 5.2.2 Provisions of the Transport and Infrastructure SEPP

69. The site is located on the periphery of the regional city of Bathurst, as identified in the Transport and Infrastructure SEPP. Accordingly, the Department must consider the project in accordance with clause 2.42 of the Transport and Infrastructure SEPP, which applies to the determination of a State significant development application for solar or wind electricity generation on certain land.

70. Clause 2.42 states that the determination of solar or wind electricity generation SSD projects in a regional city must consider any conflict with existing or approved residential or commercial uses of land surrounding the development and whether it is likely to have a significant impact on the regional city's capacity for growth or scenic quality and landscape character.
71. Land in the immediate vicinity of the project is zoned RU1 (Rural), but includes provisions for low density residential development. There are currently a number of existing and approved (but yet to be developed) residences located on the surrounding land.
72. The Department considers that the project would not significantly conflict with any of the existing or approved residential developments or agricultural land uses on the surrounding lots, given:
- these lots all have a minimum lot size of 100 ha in accordance with the Bathurst LEP;
  - the *Bathurst Regional Development Control Plan 2014* requires a boundary set back of 50m for all residential developments on lots greater than 20 ha;
  - the project infrastructure would be setback from the boundary of the site (to allow for vegetation screening and asset protection zones);
  - there would be negligible potential for noise and/or air quality impacts on surrounding lands due to these setback distances, and the large stands of vegetation that would be retained and planted around the site.
73. Other than the surrounding agricultural operations, the key commercial land uses surrounding the site include the Great Western Highway (immediately north of the site), the Bathurst Regional Airport (4 km north-west of the site) and the Main Western Railway Line (1 km to the south-east of the site).
74. The Department notes that the *Draft Bathurst Local Strategic Planning Statement* seeks to minimise the encroachment of incompatible land uses in the vicinity of the Bathurst Regional Airport and the Main Western Railway Line.
75. In relation to these two operations, Council acknowledged in its comments on the EIS that there was no risk of glare impacts on the Bathurst Regional Airport, and that the project is likely to result in minimal conflict with the Main Western Railway Line due to the distance between the operations.
76. The Department has also considered the impacts of the project on the Great Western Highway in detail in **Section 5.4** and concluded that the proposal is unlikely to have a significant impact on this asset.
77. In relation to potential to restrict Bathurst's capacity for growth, the Department notes the site is located on fringes of the regional city of Bathurst, approximately 12 km from the 'city centre', and 4.5 km east of the nearest R1 (General Residential) zoned land.
78. Importantly, the site and its wider locality have not been identified for future growth by Council or the Department in any strategic planning documents, including the *Draft Bathurst Local Strategic Planning Statement*.

79. Further to this, although Council is still in the process of undertaking investigations to finalise the future growth areas for Bathurst, the current *Draft Bathurst Local Strategic Planning Statement* does not identify any future residential or employment areas within 4 km of the site. The nearest future employment area is located immediately east of the Bathurst Regional Airport, while all future residential expansion areas are located west of Raglan (approximately 7 km west of the site).
80. Overall, the Department considers the project would not have a significant adverse impact on the capacity for growth of either existing or approved residential or commercial uses of land surrounding the development or Bathurst's capacity for growth.
81. The Department has also considered the landscape and visual impacts of the proposal in detail in **Section 5.3**. For the reasons stated in that section, the Department considers the proposal is unlikely to have a significant adverse impact on Bathurst's scenic quality and landscape character.
82. Overall, the Department is satisfied the location of the site meets the requirements of clause 2.42 of the Transport and Infrastructure SEPP.

### 5.2.3 Potential loss of agricultural land

83. The project has a development footprint of approximately 159 hectares, the majority of which has been previously cleared and used for agricultural activities including grazing and some cropping.
84. The Soil and Agricultural Impact Assessment (Soil Assessment) submitted with the EIS, which included an expert peer-review, concluded that the entire project area was verified non-BSAL with Land and Soil Capability (LSC) ranging between Class 4 (moderate to severe limitations) and Class 7 (severe limitations).
85. In response to the large number of submissions received on the EIS asserting that the land was of a higher or more productive land class, the Department engaged an independent soils expert, Dr David McKenzie to review the Soil Assessment, with particular focus on the methodologies employed and the conclusions drawn.
86. Dr. McKenzie's review identified deficiencies in the methodology employed within the Soil Assessment and recommended additional work be undertaken.
87. In response, the applicant prepared an amended Soil Assessment, which included additional soil surveys, and revised land classification of the site as summarised in **Table 6**.
88. Dr. McKenzie's subsequently confirmed that the methodologies within the amended Soil Assessment were adequate and the revised land classification was appropriate (see **Appendix J**).
89. Although the project would include disturbance to a small area of Class 3 land, the inherent agricultural capability of the land would not be affected given the relatively low scale of the development, and Elgin's commitment to return the land back to existing levels of agricultural capability following decommissioning.



**Table 6 | Land Capability Class**

Class	Description	Site (ha)	Development Footprint (ha)
3	Moderate limitations, capable of cropping using more intensive management practices. Careful management required to avoid environmental degradation.	40.6 (22%)	39.5 (25%)
4	Moderate to severe limitations, suitable for grazing and occasional cultivation with special management practices	133 (71%)	107 (68%)
5	Severe limitations, more suitable for grazing, occasional cultivation for fodder crops	12.6 (7%)	12.5 (7%)

90. To this end, the Department has included requirements to maintain the site's current land capability, including ground cover within the development footprint, where practicable, during the construction and operation of the project. Elgin would be required to fully reinstate the agricultural capability of the land following decommissioning of the project, including the requirement to return the development footprint to existing land and soil capability.
91. The Department notes that neither Council nor DPI Agriculture raised concerns that the project would compromise the long-term use of the land for agricultural purposes, subject to the removal of project infrastructure at decommissioning.
92. Importantly, the potential loss of a small area of agricultural land in the region must be balanced against:
- the broader strategic goals of the Commonwealth and NSW governments for the development of renewable energy into the future;
  - the environmental benefits of solar energy, particularly with reducing greenhouse gas emissions;
  - the economic benefits of solar energy in an area with good solar resources and capacity in the existing electricity network; and
  - the benefits of dispatchable energy for grid stability and reliability
93. Based on these considerations, the Department considers that the proposed solar farm represents an effective and compatible use of the land within the region and that the site is suitable to accommodate the development, noting the majority of the development footprint avoids BSAL and Class 3 land, consistent with the Department's revised Large-Scale Solar Energy Guideline.
94. The Department considers that the development would not fragment or alienate any resource lands in the LGA, and the land could readily be returned to agricultural land following decommissioning.
95. The Department considers that the project represents an effective and compatible use of the land within the region and that the site is suitable to accommodate the development.

## 5.3 Visual

96. Public submissions objecting to the project raised concerns about the solar farm changing the character of the area as well as potential impacts to the visual landscape, rural outlook and scenic quality for the residents and surrounding region.

### 5.3.1 Visual Context

97. The site comprises of cleared grazing land and sown paddocks with scattered trees that gently undulate to a series of small valleys and dams.

98. The project is surrounded by rural agricultural landscape, rolling hills and road corridors. Although views of the site would be limited beyond the screening of roadside vegetation and surrounding hills, it would potentially be visible from elevated locations to the south, east and west. The Winburndale Nature Reserve (including associated ridgelines) is located approximately 6.5 km east of the site, however the project would not be visible from this location.

### 5.3.2 Project Design Considerations

99. Elgin has incorporated a number of measures into the project design to minimise its visual impacts. These include (see **Figure 2**):

- a 300 m buffer between the solar arrays and the Great Western Highway;
- locating the substation, BESS, and operations and maintenance facility to the south of a natural rise in landform;
- single portrait panel arrays (up to 3.5 m high rather than double portrait (up to 5 m high);
- setting a 4-degree resting angle during backtracking to reduce the potential glare on surrounding residences;
- use of underground cabling to connect to the Essential Energy infrastructure at the northern end of the site;
- planting of vegetation screening around the full perimeter of the site; and
- retention of vegetation within the riparian zone of the main watercourses which traverse the site.

### 5.3.3 Impacts on Landscape Character

100. To assess the potential visual impacts of the solar farm on the local landscape character, four viewpoints were identified as being representative of public locations that could potentially be impacted by the project. These included two locations along the Great Western Highway, one location along Brewongle Lane and one location along Mersing Road (see **Figure 5**).

101. Views of the project for vehicles travelling both directions along the Great Western Highway would be largely shielded due to the 300 m set back of the northern frontage from the highway, the existing vegetation, and supplementary plantings along the northern frontage of the development footprint.

- 102. There would be filtered views of the project at distance for vehicles travelling east along the Great Western Highway. The views would be further reduced by supplementary plantings along the western boundaries.
- 103. Although impacts along Brewongle Lane, the local road immediately adjacent the site, are initially predicted to be 'moderate', they would be reduced to 'low' following the implementation of proposed vegetation screening along the eastern boundary of the site (see **Figure 2**). The three other locations are all predicted to experience 'very low' or 'nil' impacts even prior to the implementation of the proposed screening described above.



Figure 5 | Locations Subject to Detailed Visual Assessment

104. The views of the project for vehicles travelling both directions along the Great Western Highway, would be largely shielded from the highway immediately adjacent to the project due to the 300 m set back of the northern frontage from the highway, the existing vegetation and supplementary plantings along the northern frontage of the development footprint.
105. There would be filtered views of the project at distance for vehicles travelling east along the Great Western Highway. The views would be further reduced by supplementary plantings along the western boundaries.
106. The Department recognises that the introduction of the solar farm to a rural setting would result in a change to the local landscape, but considers the development would have a limited impact beyond the project's immediate vicinity given it would not be visible from the regional city of Bathurst or significantly impacts the views on the approach into or out of Bathurst.

### 5.3.4 Impacts on Residences

107. A total of 34 residences were identified within 2 km of the site. Of these, 11 warranted a detailed assessment in accordance with the preliminary assessment tool in the Large-Scale Solar Farm Guideline (see **Figure 5**).
108. The results of the detailed assessment confirmed that visual impacts were only predicted to occur at 8 residences (see **Table 7**).

**Table 7 | Summary of impacts to residences with views of the site**

Receiver ID and distance to project	Visual impact rating without mitigation	Proposed mitigation measures	Visual impact rating with mitigation	Department's assessment
<b>R4 (215 m)</b> <b>R5 (325 m)</b>	Very low	Vegetation screening along the southern boundary of the site.	Very low	Given the proximity to the project's southern boundary, views of the site are possible, albeit would be very low. The proposed vegetation screening ( <b>Figure 2</b> ) would further reduce the visual impacts by fragmenting potential views of the project.
<b>R7 (466m)</b>	Very low	Vegetation screening along the western boundary of the site	Very low	Given the proximity to the project's western perimeter, views of the site are possible, albeit would be very low. The proposed vegetation screening ( <b>Figure 2</b> ) would further reduce the visual impacts by fragmenting potential views of the project.
<b>R8 (858m)</b> <b>R9 (1,054m)</b> <b>R14 (912m)</b>	Very low	Vegetation screening along the northern boundary of the site	No visual impact	There would be limited views of the project due to existing intervening vegetation and the undulating landform. Proposed vegetation screening along the northern boundary (see <b>Figure 2</b> ) would further ensure potential visual impacts are further reduced.

Receiver ID and distance to project	Visual impact rating without mitigation	Proposed mitigation measures	Visual impact rating with mitigation	Department's assessment
R17 (1,689m) R34 (2,114m)	Low	Vegetation screening along the northern and eastern boundaries of the site	No visual impact	Given the elevation of these dwellings, views of the project are possible. Due to the proximity, intervening vegetation and undulating landform, visibility to the site is limited. Proposed vegetation screening along the north and east boundary (see <b>Figure 2</b> ) would further ensure potential visual impacts are further reduced.

### 5.3.5 Glint and Glare

109. While solar panels are designed to absorb rather than reflect sunlight, the Department recognises that some project components have the potential to generate glare or reflection, including the galvanised steel used for the mounting framework, but that diminishes over time.
110. The project would present a low impact to the nearby residences, road users and aircrafts, and any impacts (if experienced) would be temporary, depending on the season, time of day and location of the residence.
111. One residence (R7) is predicted to experience a yearly total of 100 minutes of glare (less than five minutes a day on sunrise, for about a month in mid-winter) prior to the implementation of proposed vegetation screening. Views from this residence would be obstructed over time with the establishment of the proposed screening vegetation along the north western boundary, and glare impacts are predicted to be nil.
112. Notwithstanding, Elgin would limit the resting angle of all solar panels during backtracking to a minimum of 4 degrees to reduce the potential glare risk associated with the project.
113. The Department has recommended conditions requiring Elgin to minimise the off-site visual impacts of the development, including by limiting the angle backtracking, and to ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape.
114. Subject to the recommended conditions, the Department is satisfied that the project would not cause significant glint or glare to nearby residences.

### 5.3.6 Night lighting

115. Minimal night-time lighting would be required by the project and would generally be limited to low level lighting for security, night-time maintenance (if required) and emergency purposes.
116. Notwithstanding, the Department has recommended conditions requiring Elgin to minimise the offsite lighting impacts of the development, and ensure that any external lighting is installed as low intensity lighting (except where required for safety or emergency purposes), does not shine above the horizontal and complies with *Australian/New Zealand Standard AS/NZS 4282:2019 – Control of Obtrusive Effects of Outdoor Lighting*.

### 5.3.7 Cumulative Impacts

117. The project is not in close proximity to other energy projects in the surrounding locality, and there are no locations where the project would be able to be viewed simultaneously with other projects.
118. Although refurbishment of the existing transmission line may require poles up to 6 m higher than the existing line, the Department considers this is unlikely to result in a significant visual impact, including cumulative impact, relative to the existing infrastructure.
119. In consideration of the limited developments within the area (see **Section 2.2**), and the existing and proposed vegetation screening, the Department considers that cumulative visual impacts with the Glanmire Solar Farm would be minor.

### 5.3.8 Conclusion

120. The site selection and project design are consistent with the Department's revised Large-Scale Solar Energy Guideline, particularly in avoiding sites with high visibility such as those on prominent or high ground positions, or sites which are located in a valley with elevated nearby residences.
121. The Department considers that there would be no significant visual impacts, including cumulative visual impacts, on surrounding residences, and the scenic quality and landscape character of the area would be preserved as far as practicable.
122. To ensure this occurs, the Department has recommended conditions requiring Elgin to:
  - minimise the off-site visual impacts of the development;
  - establish and maintain a vegetation buffer in accordance with the draft landscape plan provided in the EIS;
  - limit the angle of solar panel backtracking to a minimum of 4 degrees;
  - ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape; and not mount any advertising signs or logos on site, except where this is required for identification or safety purposes; and
  - minimise the off-site lighting impacts of the development, and ensure that any external lighting is installed as low intensity lighting (except where required for safety or emergency purposes), does not shine above the horizontal and complies with *Australian/New Zealand Standard AS/NZS 4282:2019 – Control of Obtrusive Effects of Outdoor Lighting*.

## 5.4 Other Issues

123. The Department's consideration of other issues is summarised in **Table 8** below.

**Table 8 | Assessment of other issues**

Issue	Recommended conditions
<p><b>Biodiversity</b></p> <ul style="list-style-type: none"> <li>• The site covers an area of 186 ha, which includes a disturbance footprint of approximately 159 ha.</li> <li>• The site has been subject to decades of agricultural use and is comprises predominantly of paddock trees with exotic pasture.</li> <li>• A total of approximately 0.8 ha of native vegetation (including paddock trees) would be cleared for the project. One native Plant Community Type (PCT) has been mapped within the site, namely PCT 1330 <i>Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</i>.</li> <li>• The occurrence of PCT 1330 within the site conforms to the Critically Endangered Ecological Community (CEEC) ‘<i>White Box Yellow Box Blakely’s Red Gum Woodland</i>’, listed under the BC Act but given the poor quality and low Vegetation Integrity score of the mapped community, no ecosystem credits are required to be retired. It also does not meet the criteria of CEEC under the EPBC Act due to the poor condition of the vegetation.</li> <li>• Species credits are required for two species that were assumed to be present within suitable habitat in the development footprint: <ul style="list-style-type: none"> <li>– Southern Myotis (<i>Myotis macropus</i>) – 1.5 ha (4 credits); and</li> <li>– Superb Parrot (<i>Polytelis swainsonii</i>) – 0.8 ha (4 credits).</li> </ul> </li> <li>• The above species credits would be retired in accordance with the NSW Biodiversity Offset Scheme prior to the commencement of construction of the project.</li> <li>• Given the minor extent of clearing and the degraded nature of the vegetation within the site, the Department considers the project would not result in a Serious and Irreversible Impact to any biodiversity values.</li> <li>• The refurbishment of the transmission line, although not included in this application, has been considered at a high level. The soil disturbance and vegetation clearing works required for the refurbishment is considered of low impact given the highly modified grassland vegetation that would be disturbed.</li> </ul>	<ul style="list-style-type: none"> <li>• Retire the applicable biodiversity offset credits in accordance with the NSW Biodiversity Offsets Scheme.</li> <li>• Prepare and implement a Biodiversity Management Plan in consultation with BCS, including measures to protect and manage vegetation and fauna habitat outside the approved disturbance area.</li> <li>• Defer commencement of the development consent until development for the refurbishment and augmentation of the existing transmission line is approved.</li> </ul>

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>Although the Department acknowledges comments from the BCD recommending the biodiversity impacts associated with the works for the transmission line refurbishment be included in the BDAR, the Department considers the proposed assessment pathway is a valid assessment pathway subject to its recommendation that the relevant approval for these works to be in place prior to the development consent commencing.</li> <li>Overall, the Department considers that the biodiversity impacts associated with the project are acceptable and can be managed in accordance with the recommended conditions.</li> </ul>	
<b>Heritage</b>	
<p><b>Aboriginal Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>Surveys of the project area identified two Aboriginal sites; a culturally modified tree within the riparian corridor which would be avoided by the project, and an isolated artefact within the development footprint of low significance.</li> <li>Prior to the commencement of construction, and in consultation with the RAPs, the isolated artefact would be relocated in accordance with the <i>Code of Practice of archaeological Investigation of Aboriginal Objects in NSW</i> (DECCW, 2010).</li> <li>If additional Aboriginal artefacts or skeletal material are identified during construction all work would cease and an unexpected finds procedure would be implemented.</li> <li>With the implementation of these measures, the Department and Heritage NSW consider that the project is unlikely to result in significant impacts on the Aboriginal heritage values of the locality.</li> </ul> <p><b>Historic Heritage</b></p> <ul style="list-style-type: none"> <li>“Woodside” (formerly the Woodside Inn) is a cottage located at the northern end of the site that was constructed between 1850 and 1860, and is listed as locally significant under the Bathurst LEP<sup>1</sup>.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the development does not cause any direct or indirect impacts on any items located within exclusion zones or outside the approved development footprint.</li> <li>Salvage and relocate Aboriginal items in consultation with RAPs.</li> </ul> <p>Prepare and implement a Heritage Management Plan in consultation with RAPs and Heritage NSW.</p>

<sup>1</sup> Although the EIS stated that Woodside is listed on the State Heritage Register, the Heritage Council of NSW confirmed this is not correct and it is not of State heritage significance.



Issue	Recommended Condition
<ul style="list-style-type: none"> <li>Importantly, Woodside is located outside the development footprint and would not be directly impacted by the project. The operational area of the solar farm would be located a minimum of 300 m from Woodside.</li> <li>Existing vegetation would be supplemented across the entire northern extent of the operational area at a width of 10 m in order to limit views of the operation from Woodside and the Great Western Highway. This would screen the view of the solar array from the road and ensure the environmental context of Woodside remains intact.</li> <li>The heritage surveys also identified two isolated objects (a brick fragment and a metal tool tip) and a cement water tank in a state of ruin within the site. These items were all considered to have nil to low historical significance.</li> <li>The Department considers that the project would not have any adverse impacts on historic heritage items in the area.</li> </ul>	<ul style="list-style-type: none"> <li>Cease any works and notify the NSW Police and Heritage NSW if human remains are identified over the life of the project.</li> </ul>
<b>Amenity</b>	
<p><b>Noise</b></p> <ul style="list-style-type: none"> <li>Noise generated during construction, upgrading and decommissioning activities is predicted to be well below the ‘highly noise affected’ criterion of 75dB(A) in the EPA’s <i>Interim Construction Noise Guideline</i> (the ICNG) at all non-associated residential receivers and construction is limited to daytime hours.</li> <li>Construction noise levels are predicted to exceed the ‘noise management level’ of 45 dB(A) in the ICNG under some scenarios at six of the nearest receivers (R2, R3, R4, R5, R44b and R44c).</li> <li>It should be noted that R44b and R44c are possible future residences and may not be built and/or occupied during the construction phase of the Project.</li> <li>Exceedance of the noise management level is only predicted to occur when the construction works are within 700 m of a residence, which would typically be limited to a very short period (i.e. 2-3 days) over the construction phase.</li> </ul>	<ul style="list-style-type: none"> <li>Minimise noise generated by the construction, upgrading or decommissioning activities on site in accordance with best practice requirements outlined in the ICNG.</li> <li>Comply with the noise management levels as derived from the <i>NSW Noise Policy for Industry</i> (EPA, 2017) at any non-associated residence.</li> </ul>

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>• When construction works are more than 700 m from these residences, the noise levels would comply with the noise management level of 45 dB(A).</li> <li>• Notwithstanding, Elgin has prepared a Noise Management Plan (provided in Appendix D6 of the EIS) which would be implemented for the project.</li> <li>• Operational noise would comply with relevant noise criteria, as calculated in accordance with the <i>NSW Noise Policy for Industry</i> (NPfI), at all residences except for Receiver R44c, where a 1 dB(A) exceedance is predicted during the evening and night periods during adverse conditions. Importantly, the NPfI states that exceedances of up to 2dB(A) are considered negligible and would not be discernible by the average person.</li> <li>• Road traffic noise during construction and operation would comply with the relevant criteria in the EPA's <i>Road Noise Policy</i>.</li> <li>• Vibration impacts from construction works are not predicted to impact any surrounding residences due to the large distances between the residences and the construction activities. No operation ground vibration sources were identified.</li> <li>• The Department considers that noise generated during construction and operation of the project can be appropriately managed through implementation of the proposed mitigation measures and adherence with the recommended conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• Restrict construction hours to Monday to Friday, 7am to 6 pm and Saturday, 8 am to 1 pm.</li> <li>• Minimise dust generated by the development.</li> <li>• Establish and maintain groundcover with appropriate perennial species within 3 months following the completion of any construction or upgrading.</li> </ul>
<p><b>Dust</b></p> <ul style="list-style-type: none"> <li>• The project would require minimal earthworks/excavation expected to be limited to ground-breaking, levelling (cutting and filling), piling works and trenching. However, these works have the potential to adversely impact on local air quality through generation of dust and vehicle emissions.</li> <li>• To manage air quality during construction, several mitigation measures have been proposed in the EIS including management protocols, dust suppression during construction and cessation of works that disturb vegetation, soil or stockpiles during high winds (over 40km/h).</li> </ul>	

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>The Department considers that dust generated during construction and operation of the project can be appropriately managed through implementation of the proposed mitigation measures and adherence with the recommended conditions.</li> </ul> <p><b>Heat Island Effect</b></p> <ul style="list-style-type: none"> <li>Concerns were raised in some submissions about potential changes to the microclimate as a result of solar panels, also referred to as “Photovoltaic Heat Island Effect”.</li> <li>While evidence shows that solar panels can increase air temperatures above solar panels, a study commissioned by Greater Shepparton Council in 2018 found that lateral temperatures drop very quickly from the perimeter of a solar farm in part due to natural convections, which take warm air upwards.</li> <li>The study found that changes to air temperatures would be negligible within 30 m of the development footprint, and that any impacts would be further reduced once vegetation screening at the project boundary became effective.</li> <li>Consistent with the Department’s revised Large-scale Solar Energy Guidelines, the development footprint includes a 30 m setback from the north and south boundaries fully contained within the site.</li> <li>The eastern footprint of the solar arrays boundary is set back 30 m when incorporating the Brewongle Lane road reserve.</li> <li>Although the western edge of the solar arrays is set back less than 30 m, the Department considers the buffer which have been incorporated (i.e. minimum of 20 m) is appropriate given there is no horticultural or cropping activity on the adjacent property and the proposed landscaping buffer would further mitigate potential heat-island effects.</li> <li>The project would incorporate screen planting along the entire perimeter which would aid in mitigating any potential heat island effects that occur from the project.</li> </ul>	

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>The Department considers that, with the implementation of the recommended conditions of consent, including setback distances and vegetation screening, the project would not significantly impact neighbouring properties.</li> </ul>	
<b>Hazards and Bushfire Risk</b>	
<p><b>Battery Storage</b></p> <ul style="list-style-type: none"> <li>The project includes battery storage, which would be located in the north-eastern corner of the site.</li> <li>The Preliminary Hazard Analysis (PHA) found that subject to mitigation measures, including minimum separation distance between BESS containers and use of non-combustible materials, the project risks at the site boundary did not exceed acceptable criteria, and propagation risks within the site were acceptable.</li> <li>Subject to the recommended conditions and commitments set out in the EIS, the Department considers that risks associated with the BESS would be minimal.</li> </ul> <p><b>Bushfire Risk</b></p> <ul style="list-style-type: none"> <li>Nineteen public submissions raised concerns regarding increased bushfire impacts.</li> <li>To actively manage risk, Elgin would implement a range of management measures including (but not limited to): <ul style="list-style-type: none"> <li>establish and maintain a 10 m Asset Protection Zone around all critical project infrastructure;</li> <li>the substation and transformer would be provided with an increased 20m wide APZ;</li> <li>comply with the requirements of RFS's <i>Planning for Bushfire Protection 2019</i> and <i>Standards for Asset Protection Zones</i>;</li> <li>prepare an Emergency Plan, consistent with the recommendations of Fire and Rescue NSW.</li> </ul> </li> <li>The Department considers the bushfire risks can be suitably controlled through the implementation of standard fire management procedures.</li> </ul>	<ul style="list-style-type: none"> <li>The BESS must not exceed the proposed total capacity of 60 MW across the project site and must be installed in an arrangement consistent with the EIS.</li> <li>Prepare and implement a detailed Emergency Plan and Emergency Services Information Package, that identifies procedures for managing risks on site.</li> <li>Implement procedures and controls for managing fire hazards, including maintenance of an asset protection zone in accordance with requirements of the RFS's <i>Planning for Bushfire Protection guidelines 2019</i>.</li> </ul>

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>• A number of submissions also stated that the project may impact insurance premiums, and the ability of neighbouring landowners to obtain insurance. The submissions assert that insurance companies would not provide relevant insurances to adjoining landowners given: <ul style="list-style-type: none"> <li>– the risk that fire could spread from their properties into the site and cause significant damage to the project infrastructure; or</li> <li>– the project would increase the risk of bushfire on adjacent properties.</li> </ul> </li> <li>• The Department considers that the risk of fire spreading into the site from an adjoining property, or from the solar arrays and infrastructure to an adjoining property would be adequately mitigated with implementation of the above management measures and adherence to the recommended consent conditions. While insurance premiums/availability can vary to take into account different factors including where there is increased bushfire risk, the Department considers that with the recommended conditions there would not be an increase in bushfire risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare a Fire Safety Study for the development.</li> </ul>
<b>Traffic</b>	
<ul style="list-style-type: none"> <li>• The main increase in traffic would occur during the 12 month construction period with a peak period of up to four months. The estimated peak daily vehicle movement would be up to 60 heavy vehicle, and 107 light vehicle movements.</li> <li>• Traffic generation during operations would be significantly less than the construction phase (i.e. up to 6 vehicle movements per day and occasional light vehicle deliveries).</li> <li>• TfNSW raised concerns about the traffic modelling (SIDRA analysis) and rail corridor access for transmission line works. TfNSW also requested clarification of heavy and light vehicle access routes and a review of the swept path assessment and turn warrants assessment.</li> <li>• Council expressed concerns regarding Brewongle Lane and requested the road be sealed between the Great Western Highway and the proposed site entry, which Elgin has agreed to.</li> </ul>	<ul style="list-style-type: none"> <li>• Complete the relevant road upgrades between the Great Western Highway and the site access on Brewongle Lane.</li> <li>• Restrict the number of vehicles during construction, upgrading and decommissioning to the peak volumes identified.</li> </ul>

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>• In response to submissions and advice received from Council and TfNSW, Elgin provided an updated Traffic Impact Assessment with a revised SIDRA analysis, turn warrants assessment and swept path assessment. Elgin also provided detail regarding transmission line works within the rail corridor, indicating the Accredited Service Provider would obtain the appropriate approval at the detailed design stage.</li> <li>• The primary heavy vehicle transport route during construction is from Port Botany via Foreshore Road, M1, M5, M7, M4, the Great Western Highway, and Brewongle Lane. Site access would be restricted to Brewongle Lane via the Great Western Highway only. The Department has also recommended conditions for a dilapidation survey and repair of any development related damage to Brewongle Lane.</li> <li>• The Traffic Impact Assessment identified potential cumulative traffic impacts with the McPhillamys Gold project. This project is estimated to generate 30 light vehicle and 20 heavy vehicle deliveries per day during the construction phase. Given the location of the McPhillamys Gold project to the west of Bathurst, only a very small proportion of staff trips would be expected to pass the Glanmire Solar Farm. A larger proportion of heavy and delivery vehicles would be expected to be generated from the east and therefore utilise the Great Western Highway past Brewongle Lane.</li> <li>• 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.</li> <li>• Following review of additional information provided by Elgin, TfNSW confirmed its concerns had been addressed, subject to the implementation of a Traffic Management Plan, including provisions for managing light vehicles.</li> <li>• Subject to the recommended conditions, the Department considers that the project would not result in significant impacts on road network capacity, efficiency or safety.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure the length of vehicles (excluding heavy vehicles requiring escort) does not exceed 26 m.</li> <li>• Restrict access to the designated transport route.</li> <li>• Prepare and implement a Traffic Management Plan, including provisions for dilapidation surveys, details of the employee shuttle bus service, and details of the measures that would be implemented to address road safety.</li> </ul>

Issue	Recommended Condition
<p><b>Water and erosion</b></p> <ul style="list-style-type: none"> <li>• The project is traversed by several first and second order streams which are tributaries of Salt Water Creek (see <b>Figure 2</b>).</li> <li>• Flood modelling demonstrated that the project is not predicted to have a significant impact on flood behaviour for the 1% AEP event, with flood levels, depths, velocities and hazards remaining largely unchanged.</li> <li>• Parts of the site may be at risk of minor flooding during high rainfall events, which poses a minor safety risk to workers (e.g. electrical hazards and potential mobilisation of equipment in floodwaters). Elgin has committed to developing a flood response plan to manage these risk, which would outline a process for removing any necessary equipment and materials offsite and out of flood risk areas.</li> <li>• Importantly, the peak flood levels and velocities would remain relatively unchanged across the majority of the site, given most of the infrastructure would be located outside high hazard areas of the floodplain. Although there may be minor localised changes to flood behaviour, these are not predicted to adversely affect adjoining properties.</li> <li>• The project would require around 28 ML of water during construction for dust suppression and other construction purposes. Potable water would be imported to the site during the construction period. The potable water supply would be augmented by rainwater collected in tanks installed during construction.</li> <li>• Any erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques.</li> <li>• The project is not expected to affect groundwater resources or groundwater dependent ecosystems.</li> <li>• Subject to the recommended conditions, the Department consider that the project would not result in significant impacts on water resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare and implement a Soil and Water Management Plan in consultation with DPE Water, prior to the commencement of construction.</li> <li>• Ensure the project is designed, constructed and maintained to reduce impacts on water resources.</li> <li>• Minimise erosion in accordance with OEH's <i>Managing Stormwater: Soils and Construction Manual</i> (Landcom, 2004) and ensure that the project is constructed and maintained to avoid causing erosion.</li> <li>• Ensure all works are undertaken in accordance with <i>Guidelines for Controlled Activities on Waterfront Land</i> (NRAR, 2018).</li> </ul>

Issue	Recommended Condition
<p><b>Accommodation and workforce</b></p> <ul style="list-style-type: none"> <li>• Up to 150 workers would be required over the 12-month construction period.</li> <li>• These 150 jobs could potentially place strain on local accommodation supply, particularly if peak construction were to coincide with tourism events.</li> <li>• Although Council did not raise any issues about the availability of workforce accommodation, Elgin has committed to source workers from the local community to reduce accommodation and service pressures.</li> <li>• Importantly, given this project is not located inside a designated renewable energy zone, there is less pressure on local accommodation relative to other recent solar farm applications, particularly noting there are only five other renewable energy developments within 50 km of the project (see <b>Section 2.2</b>).</li> <li>• In addition, the Department has recommended that Elgin be required to develop an Accommodation and Employment Strategy in consultation with Council. The Strategy would require Elgin to: <ul style="list-style-type: none"> <li>– prioritise employment of local workers;</li> <li>– propose measures to ensure there is sufficient accommodation for the workforce associated with the project;</li> <li>– consider cumulative impacts with other projects in the area; and</li> <li>– monitor and review the effectiveness of the strategy, including regular monitoring during construction.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Prepare an Accommodation, and Employment Strategy for the project in consultation with Council, with consideration to prioritising the employment of local workers.</li> </ul>
<p><b>Social Impacts</b></p> <ul style="list-style-type: none"> <li>• Public submissions raised concerns that the project would: <ul style="list-style-type: none"> <li>– reduce the ability of neighbouring residences to obtain insurance (see ‘Hazards and Bushfire Risk’ section above);</li> <li>– have an adverse impact on neighbouring land values; and</li> <li>– rely on materials sourced through forced labour.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• No specific conditions recommended.</li> </ul>



Issue	Recommended Condition
<ul style="list-style-type: none"> <li>• In relation to property values, the Department considers the project would not result in any significant or widespread reduction in land values in the areas surrounding the solar farm.</li> <li>• The Department notes that: <ul style="list-style-type: none"> <li>– the project is permissible with development consent under both State and local planning instruments;</li> <li>– a detailed assessment of the merits of the project has found that the project is unlikely to generate significant economic, environmental or social impacts;</li> <li>– the impacts of the project can be further minimised by imposing suitable conditions on the project, and requiring a range of standard mitigation measures, such as vegetation screening, to be implemented;</li> <li>– the Department considers that the visual impacts of the project on the surrounding residences and road users would not be significant; and</li> <li>– the Land and Environment Court has ruled on several occasions that the assessment of the impacts of projects on individual property values is not generally a relevant consideration under the EP&amp;A Act, unless the project would have significant and widespread economic impacts on the locality, which is not the case in this instance.</li> </ul> </li> <li>• In relation to the ethical sourcing of material to construct the project, Elgin has committed working with the relevant trade associations and supply chain partners to seek transparency and traceability throughout the supply chain.</li> <li>• It is not appropriate to recommend conditions relating to the sourcing of products required for the project as it is not considered to be a planning matter under the EP&amp;A Act, but rather a consideration under the NSW <i>Modern Slavery Act 2018</i> and Commonwealth <i>Modern Slavery Act 2018</i>.</li> </ul>	

Issue	Recommended Condition
<p><b>Community Benefit</b></p> <ul style="list-style-type: none"> <li>The Department considers that, in addition to its contribution to energy transition, the project would generate direct and indirect benefits to the local community, including: <ul style="list-style-type: none"> <li>– up to 150 construction jobs over the 12 month construction period;</li> <li>– expenditure on accommodation and businesses in the local economy by workers involved in the project; and</li> <li>– the procurement of goods and services by Elgin and associated contractors;</li> </ul> </li> <li>Further, Elgin has reached an in-principle agreement with Council to enter into a VPA, consisting of an annual payment of \$18,000 for the life of the project which is consistent with the upper limit of \$300 per megawatt per annum provided in the revised <i>Large-Scale Solar Energy Guideline</i> for community benefits.</li> <li>The project is unlikely to result in significant demand on community services and infrastructure (excluding roads considered above) given the relatively low level of local employment generated once it is operational.</li> <li>Noting the above, the Department considers that the project would have a positive socio-economic impact on the local community.</li> </ul>	<ul style="list-style-type: none"> <li>Enter into a VPA with Council.</li> </ul>
<p><b>Subdivision</b></p> <ul style="list-style-type: none"> <li>Elgin proposes to subdivide Lot 141 DP1144786 for an area for Essential Energy assets within the substation area.</li> <li>The proposed subdivision of the lots would be below the minimum lot size of 100 ha and prohibited under a strict reading of the LEP.</li> <li>Under Section 4.38(3) of the EP&amp;A Act, development consent for the project can be granted despite the subdivision component of the application being prohibited by the LEP.</li> </ul>	<ul style="list-style-type: none"> <li>Subdivide the lot in accordance with the requirements of the EP&amp;A Act, EP&amp;A Regulation and the <i>Conveyancing Act 1919</i> (NSW).</li> </ul>

Issue	Recommended Condition
<ul style="list-style-type: none"> <li>• The Department considers that the subdivision should be approved as it:               <ul style="list-style-type: none"> <li>– is necessary for the operation of the substation, the battery and the ancillary facilities;</li> <li>– would not result in any additional dwelling entitlements on the subdivided lots; and</li> <li>– is consistent with the key objectives of the RU1 zone as it would encourage diversity and primary industry enterprises and minimise conflict between land uses.</li> </ul> </li> </ul>	
<b>Decommissioning and Rehabilitation</b>	
<ul style="list-style-type: none"> <li>• The operational life of the project is 40 years, however there is potential to operate for a longer period of time if solar panels are upgraded over time, which would be permitted under the recommended conditions of consent.</li> <li>• The Department’s revised Large-Scale Solar Energy Guideline identifies four key decommissioning and rehabilitation principles for circumstances where an applicant ceases operating a project, which are the removal of project infrastructure, returning the land to its pre-existing use, including rehabilitating and restoring the pre-existing LSC Class where previously used for agricultural purposes, and the owner/operator of the project should be responsible for the decommissioning and rehabilitation and this should be reflected in an agreement with the host landowner(s).</li> <li>• With the implementation of objective-based conditions and monitoring requirements, which are consistent with these key principles, the Department considers that the solar farm would be suitably decommissioned at the end of the project life, or within 18 months if operations cease unexpectedly, and that the site be appropriately rehabilitated.</li> </ul>	<p>Include rehabilitation objectives requiring the site to be rehabilitated within 18 months of cessation of operations.</p>

## 6 Evaluation

124. The Department has assessed the development application, EIS, Submissions Report, Amendment Report and additional information and has carefully considered:
- submissions received from members of the community;
  - comments provided by Council; and
  - advice received from State and local Government agencies.
125. The Department has also considered the objectives of the EP&A Act, including the ESD principles, and relevant considerations under section 4.15(1) of the EP&A Act. The Department has given consideration to Elgin's evaluation of the project's merits against applicable statutory and strategic planning requirements.
126. The project is permissible with consent in accordance with the Bathurst LEP and is located on agricultural land, most of which has been historically cleared and modified for grazing. The project has been designed to avoid site constraints such as items of heritage value, watercourses, native vegetation, and BSAL, while maintaining its ability to utilise the existing electricity infrastructure and road network. This is consistent with the Department's revised Large-Scale Solar Energy Guideline's focus on avoiding or minimising impacts during site selection and design.
127. Submissions in support generally pointed to the benefits of transitioning to renewable energy sources in order to assist in achieving the Government's emission reduction targets. However the majority of public submissions objected to the project, citing a range of issues, including land compatibility, loss of agricultural land and visual impacts. The Department has considered these concerns in detail throughout its assessment.
128. Firstly, the Department's assessment concluded that the project would not result in conflict with existing or approved residential or commercial uses of land surrounding the development, nor would it have a significant impact on the Bathurst's capacity for growth or scenic quality and landscape character.
129. Secondly, although the project would include disturbance to a small area of Class 3 land (approximately 39.5 ha), the Department considers that the inherent agricultural capability of the land would not be affected, and the overall agricultural productivity of the region would not be significantly reduced, given the site would be returned to agricultural uses following decommissioning and rehabilitation. To this end, the Department has included rehabilitation objectives in the recommended conditions to maintain the productivity of the agricultural land over the life of the project.
130. Finally, the visual assessment concluded that the visual impact for all residences surrounding the site would be nil to low, due to distance, topography and the extent of intervening vegetation along the project boundary, which would be further enhanced by Elgin's proposed screen planting.
131. To address the residual impacts of the project, the Department has recommended a range of detailed conditions, developed in conjunction with agencies and Council, to ensure these impacts are effectively minimised, managed and/or offset. Elgin has reviewed the conditions and does not object to them.

132. The project would assist in transitioning the electricity sector from coal and gas-fired power stations to low emissions sources. It would generate over 132,400 MWh of clean electricity annually, which is enough to power approximately 23,000 homes and save over 127,150 tonnes of greenhouse gas emissions per year. It is therefore consistent with the goals of the *NSW Climate Change Policy Framework and Net Zero Plan Stage 1: 2020 - 2030*.
133. The project would also provide flow-on benefits to the local community, including up to 150 construction jobs and a capital investment of \$152 million. A VPA involving payments to Council of \$18,000 per annum for the life of the project is also proposed.
134. Overall, the Department considers that the project achieves an appropriate balance between maximising the efficiency of the solar resource development and minimising the potential impacts on surrounding land uses and the environment.
135. On balance, the Department considers that the project is in the public interest and is approvable, subject to the recommended conditions of consent (see **Appendix G**).

**Prepared by:**

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Ellena Tsanidis, Environmental Assessment Officer

**Recommended by:**



10/11/2023

Nicole Brewer

**Director**

**Energy Assessments**



10/11/2023

Clay Preshaw

**Executive Director**

**Energy, Resources and Industry**

# Appendices

Appendix A – Environmental Impact Statement

Appendix B – Submissions

Appendix C – Submissions Report

Appendix D – Amendment Report

Appendix E – Agency Advice on Assessment

Appendix F – Additional Information

Appendix G – Recommended Development Consent

Appendices A to G available at: <https://www.planningportal.nsw.gov.au/major-projects/projects/glanmire-solar-farm>

## Appendix H – Consideration of community views

The Department exhibited the Environmental Impact Statement (EIS) for the project from 18 November 2022 until 15 December 2022 and received 143 unique submissions from the community (133 objections and nine were in support and one provided comment).

The Department consulted with government agencies and Bathurst Regional Council throughout the assessment process.

The key issues raised by the community (including in public submissions) and considered in the Department's Assessment Report include land use compatibility (including suitability of the proposed site and loss of agricultural land) and visual impacts.

Other issues are addressed in detail in the Department's Assessment Report.

Issue	Consideration
<b>Compatibility of proposed land use</b> <ul style="list-style-type: none"><li>Suitability of the proposed site</li><li>Loss of agricultural land</li></ul>	<b>Assessment</b> <ul style="list-style-type: none"><li>The project is consistent with the <i>Central West and Orana Regional Plan 2041</i>.</li><li>The project site is located on land zoned RU1 (Primary Production) under the Bathurst LEP and is permitted with consent within this zone.</li><li>The project would not result in conflict with existing or approved residential or commercial uses of land surrounding the development, nor would it have a significant impact on the Bathurst's capacity for growth or scenic quality and landscape character.</li></ul>

Issue	Consideration
<ul style="list-style-type: none"> <li>Impacts on neighbouring agricultural activities</li> </ul>	<ul style="list-style-type: none"> <li>The Soil Assessment submitted with the EIS, which included an expert peer review, concluded that the entire project area was verified non-BSAL with Land and Soil Capability (LSC) ranging between Class 4 and Class 7.</li> <li>The Department engaged an independent expert to review the Soil Assessment which found deficiencies in the methodology and recommended additional work be conducted.</li> <li>The amended Soil Assessment included additional surveys and revised land classification of the site including the addition of 39.4 ha of Class 3 land within the development footprint.</li> <li>Although the project would include disturbance to a small area of Class 3 land, the inherent agricultural capability of the land would not be affected given the relatively low scale of the development, and Elgin’s commitment to return the land back to existing levels of agricultural capability following decommissioning.</li> <li>The agricultural operations of adjoining landholders would not be impacted as weeds would be controlled through strict land management measures, erosion and sediment risks can be managed effectively by implementing a control plan, water pollution is not permitted, and noise and dust would not be significant and minimised.</li> <li>Based on these considerations, the Department considers that the proposed solar farm represents an effective and compatible use of the land within the region and that the site is suitable to accommodate the development.</li> </ul> <p><b>Recommended Conditions:</b></p> <ul style="list-style-type: none"> <li>Rehabilitate the site to the satisfaction of the Planning Secretary.</li> <li>Ensure the solar panels and ancillary infrastructure are designed, constructed and maintained to avoid causing any erosion on site.</li> <li>Restore land capability to pre-existing productive capacity.</li> <li>Establish and maintain groundcover with appropriate perennial species within 3 months following the completion of any construction or upgrading and manage weeds within the groundcover.</li> <li>Ensure that the development does not cause any water pollution, as defined under Section 120 of the POEO Act.</li> <li>Ensure that noise associated with the construction, operation, upgrading and decommissioning of the project complies with the relevant noise criteria.</li> <li>Minimise dust generated by the development.</li> </ul>
<p><b>Visual Amenity</b></p> <ul style="list-style-type: none"> <li>Impacts on landscape views and rural character</li> <li>Glint and glare</li> </ul>	<p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>The project has been designed to minimise potential impacts on the surrounding landscape and receivers through implementation of the following measures: <ul style="list-style-type: none"> <li>a 300 m buffer between the solar arrays and the Great Western Highway;</li> <li>locating the substation, BESS, and operations and maintenance facility to the south of a natural rise in landform;</li> </ul> </li> </ul>

Issue	Consideration
	<ul style="list-style-type: none"> <li>– single portrait panel arrays (up to 3.5 m high) rather than double portrait (up to 5 m high);</li> <li>– setting a 4-degree resting angle during backtracking to reduce the potential glare on surrounding residences;</li> <li>– use of underground cabling to connect to the Essential Energy infrastructure at the northern end of the site;</li> <li>– planting of vegetation screening around the full perimeter of the site; and</li> <li>– retention of vegetation within the riparian zone of the main watercourses which traverse the site.</li> </ul> <ul style="list-style-type: none"> <li>• The solar farm is relatively low-lying (solar panels up to 3.5 m high) and the visual assessment concluded that visual impact for all residences surrounding the site would be nil to low due to distance, topography and the extent of intervening vegetation along the project boundary, which would be further enhanced by Elgin’s proposed tree planting.</li> <li>• There would be low glare risk to one dwelling (R7). This low impact rating is due to a yearly total of 100 minutes of glare risk (less than five minutes a day on sunrise, for about a month in mid-winter). Views to this area of the solar farm would be obstructed over time with the establishment of the proposed screening vegetation along the north western boundary, and there would be no glare impact.</li> </ul> <p><b>Recommended Conditions:</b></p> <ul style="list-style-type: none"> <li>• Limit the angle of solar panel backtracking to a minimum of 4 degrees to reduce glare impacts.</li> <li>• Minimise the off-site visual impacts of the development, including the potential for any glare or reflection.</li> <li>• Ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in with the surrounding landscape, where reasonable and feasible.</li> <li>• Establish and maintain a vegetation buffer (landscape screening) in accordance with the draft landscape plan provided in the EIS.</li> <li>• Prepare a detailed Landscaping Plan prior to commencing construction, which would include a program to monitor and report on the effectiveness of the landscape screening.</li> </ul>



## Appendix I – Statutory Considerations

In line with the requirements of Section 4.15 of the EP&A Act, the Department’s assessment of the project has given detailed consideration to a number of statutory requirements. These include:

- the objects found in Section 1.3 of the EP&A Act; and
- the matters listed under Section 4.15(1) of the EP&A Act, including applicable environmental planning instruments and regulations.

The Department has considered all of these matters in its assessment of the project and has provided a summary of this assessment below.

Aspect	Summary
<p><b>Objects of the EP&amp;A Act</b></p>	<p>The objects of most relevance to the Commission’s decision on whether to approve the project are found in section 1.3(a), (b), (c), (e) and (f) of the EP&amp;A Act.</p> <p>The Department considers the project encourages the proper development of natural resources (Object 1.3(a)) and the promotion of orderly and economic use of land (Object 1.3(c)), particularly as the project:</p> <ul style="list-style-type: none"> <li>• is a permissible land use on the subject land;</li> <li>• is located in a logical location for efficient solar energy development;</li> <li>• is able to be managed such that the impacts of the project could be adequately minimised, managed, or at least compensated for, to an acceptable standard;</li> <li>• would contribute to a more diverse local industry, thereby supporting the local economy and community;</li> <li>• would not fragment or alienate resource lands in the LGA; and</li> <li>• is consistent with the goals of NSW’s <i>Climate Change Policy Framework and Net Zero Plan Stage 1: 2020 – 2030</i> and would assist in meeting Australia’s renewable energy targets whilst reducing greenhouse gas emissions.</li> </ul> <p>The Department has considered the encouragement of ESD (Object 1.3 (b)) in its assessment of the project. This assessment integrates all significant socioeconomic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences.</p> <p>In addition, the Department considers that appropriately designed SSD solar facility development, in itself, is consistent with many of the principles of ESD. Elgin has also considered the project against the principles of ESD. Following its consideration, the Department considers that the project can be carried out in a manner that is consistent with the principles of ESD.</p> <p>Consideration of environmental protection (Object 1.3(e)) is provided in <b>Section 5</b> of this report. Following its assessment, the Department considers that the project could be undertaken in a manner that would at least maintain the biodiversity values of the locality over the medium to long term and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts could be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity offset credits.</p>

Aspect	Summary
	<p>Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is also provided in <b>Section 5</b> of this report. Following its assessment, the Department considers the project would not significantly impact the built or cultural heritage of the locality, and any residual impacts can be managed and/or mitigated by imposing appropriate conditions.</p>
<p><b>State Significant Development</b></p>	<p>Under Section 4.36 of the EP&amp;A Act the project is considered a State Significant Development.</p> <p>Under Section 4.5(a) of the EP&amp;A Act and clause 8A of the Planning Systems SEPP, the Independent Planning Commission is the consent authority for the development as the project received more than 50 unique public submissions by way of objection.</p>
<p><b>Environmental Planning Instruments</b></p>	<p>The Bathurst LEP applies and is discussed in <b>Sections 3.3</b> and <b>5.2</b> of this report, particularly regarding permissibility and land use zoning. As discussed in <b>Section 3.3</b> of this report, solar farms are permitted with consent within the relevant land use zoning. In addition, Council’s strategic planning documents specifically promote renewable energy projects for the region.</p> <p>Elgin completed a preliminary risk screening in accordance with the <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> (Hazards SEPP) and confirmed that subject to mitigation measures, including minimum separation distance between BESS containers and use of non-combustible materials, the project risks at the site boundary did not exceed acceptable criteria.</p> <p>The Department’s consideration of this analysis is discussed in <b>Section 5.4</b>. The Department has also considered the remediated land provisions of the Hazards SEPP, a preliminary assessment of the land found no contaminated land within the project site and the Department is satisfied the site is suitable for the development. Further to this, the use of metals in solar panels has not been found to pose a risk to the environment as they are enclosed in thin layers between sheets of glass or plastic within the solar panel. To readily release contaminants into the environment, solar panels would need to be ground to a fine dust. As such, contamination of soil resulting from the proposal is not expected.</p> <p>The Department has also reviewed the proposal against the <i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i> (Transport and Infrastructure SEPP). The Department notified Bathurst Regional Council, Transport for NSW Essential Energy and Transgrid about the project, in accordance with Transport and Infrastructure SEPP requirements to notify relevant public authorities and electricity supply authorities about developments that may affect public infrastructure or public land.</p> <p>The Department has considered the provisions of the <i>State Environmental Planning Policy (Primary Production) 2021</i> (Primary Production SEPP), which aims to achieve a balance between rural needs, including agriculture, and development. Of relevance to the project, Primary Production SEPP also aims to reduce the risk of land use conflict and rural land fragmentation. The Department has considered these matters in <b>Section 5.2</b> of this report and concluded that the project is generally consistent with the broader and specific land use planning objectives for the site and the region under the relevant planning instruments and strategies.</p>

Aspect	Summary
	<p>The Department has consulted with public authorities and considered the matters raised in its assessment of the project (see <b>Section 4</b>). Where appropriate, the Department has also developed conditions of consent to address the recommendations and advice of public authorities consulted for the project including Council. Overall, the Department considers that the proposal is located to avoid land use conflicts with existing and approved uses of land (see <b>Section 5.2</b>).</p> <p>The Department has considered the <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> particularly Chapter 4, Koala habitat protection 2021. Whilst the Bathurst Regional LGA is listed in Schedule 2 of the Biodiversity and Conservation SEPP, the provisions of the SEPP do not apply to land zoned RU1 (Primary Production). Nonetheless, the Biodiversity Development Assessment Report prepared for the project has assessed the potential for impacts on Koala habitat, including targeted survey efforts that did not record this species.</p>

## Appendix J – Dr David McKenzie’s review of the revised Soil Assessment

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26 September 2023

Dear Joe

**RE: Soil Assessment at the Glanmire Solar Farm**

This letter presents the latest of a series of responses to the request I received from Department of Planning and Environment (Department) to give expert advice regarding soil-related aspects of the Glanmire Solar Farm proposed by Elgin Energy near Bathurst NSW.

The 186 ha Glanmire Solar Farm involves the construction and operation of a 60 MW solar farm including grid connection and battery energy storage system of 60 MW / 120 MWh, with a development footprint of 159 ha.

The applicant prepared an Agricultural Impact Assessment via SLR Consulting Australia Pty Ltd (SLR), including peer review by Minesoils Pty Ltd, which attempted to establish the land class of the site through soil testing and verification.

The Department asked me to review soil-related aspects of the report and give advice around the methodologies used, their adequacy and any gaps.

A key issue was whether or not the SLR soil survey achieved minimum standards outlined in the following document:

- NSW Department of Planning and Environment (2022). 'Large-Scale Solar Energy Guideline'. (Guideline)

In my letter to the Department dated 30 June 2023, major deficiencies were identified with the design and implementation of the SLR soil sampling program.

The field work had to be re-done. The results of this work are presented in a new report entitled:

- 'Glanmire Solar Farm: Soil, land and agricultural impact assessment'. Report No. MS-103: Prepared for NGH Consulting Pty Ltd by Minesoils Pty Ltd, August 2023.

Relative to the quality of the original SLR report, the Minesoils study represents a significant improvement for everyone involved with the proposed Glanmire Solar Farm project. It is in accordance with the following key requirements of the Guideline.

- A soil sampling inspection density of 1 site per 5 ha to 25 ha is stipulated.
- The following soil survey resource should be included as a reference: McKenzie NJ, Grundy MJ, Webster R and Ringrose-Voase AJ (2008) Guidelines for Surveying Soil and Land Resources. Second Edition. CSIRO Publishing, Melbourne. ('CSIRO Blue Book')

A highlight for me is the addition of informative new field data – particularly soil pit profile photographs.

The conclusions about ASC<sup>1</sup> soil types (Figure 11; Sodosols, Chromosols) and Verified 'Land and Soil Capability' (LSC) (Figure 12; LSC = 3, 4 and 5) do appear to be sound. I agree with comments about the importance of soil dispersion management at the Glanmire Site, and the plans to deal with associated challenges such as erosion and sedimentation risks.

There are some secondary issues that need to be considered.

In the Preface, Minesoils infer that they and their SLR colleagues have reluctantly been pushed into doing an unreasonable amount of extra work. They state (Page 6, paragraph 6) that: "The updated results now reflect a survey well in excess of standard requirements and far more detailed than similar studies undertaken for other large-scale solar or mining sites." The message is repeated on page 34, third-last paragraph. This reaction is puzzling, given that the SLR report failed to report the presence of 40.6 ha of LSC Class 3 land (requiring a 'Level 3' assessment<sup>2</sup> rather than 'Level 2') because of a flawed soil sampling plan, ie. a very serious error.

The claim by Minesoils that their recent Glanmire soil survey represents an approach that is far more detailed than similar studies undertaken for other large-scale solar or mining sites is incorrect. McKenzie Soil Management Pty Ltd (trading as 'Soil Management Designs'; SOILmgt) has shown that this is not the case. Their detailed but clearly presented Gateway work at Spur Hill<sup>3</sup> for example was strongly supported by NSW Government regulators. The field methodology and comprehensive reporting/mapping procedures were strongly endorsed and encouraged by John Friend and Liz Rogers, NSW Office of Agricultural Sustainability & Food Security (part of NSW Department of Primary Industries). They worked in conjunction with NSW Office of Environment & Heritage to develop the 2013 'Interim protocol for site verification and mapping of 'biophysical strategic agricultural land'.

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<sup>1</sup> ASC = Australian Soil Classification

<sup>2</sup> See Figure 4 in the 'Large-Scale Solar Energy Guideline'.

<sup>3</sup> The first of several SOILmgt Gateway Reports was the 'Spur Hill Underground Coking Coal Project, November 2013. Agricultural Resource Assessment.' McKenzie Soil Management Pty Ltd. and Resource Strategies Pty Ltd: [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2021/03/spur-hill-underground-coking-coal-project/draft-gateway-application/appendix-a\\_-\\_agricultural-resource-assessment.pdf](chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2021/03/spur-hill-underground-coking-coal-project/draft-gateway-application/appendix-a_-_agricultural-resource-assessment.pdf)

In summary, the Glanmire LSC and soil type conclusions in the Minesoils report do appear to be appropriate and sound. Their efforts to address deficiencies with the earlier SLR report have taken into account requirements of the NSW 'Large-Scale Solar Energy Guideline'.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'David McKenzie', with a decorative flourish underneath.

Dr David McKenzie CPSS-AusSS

**Soil Science Consultant**