Department of Planning and Environment

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Glenellen Solar Farm

State Significant Development Assessment Report (SSD 9550)

October 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 Glenellen Solar Farm, located approximately two kilometres north-east of Jindera, lodged by Trina Solar (Australia) 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
- 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

Trina Solar (Australia) Pty Ltd (Trina) proposes to develop the Glenellen Solar Farm (the project), a new State significant development (SSD) located approximately two kilometres (km) north-east of Jindera, in the Greater Hume local government area (LGA).

The project involves the construction of a solar farm with a generating capacity of approximately 200 megawatts (MW), along with the upgrading and decommissioning of infrastructure and equipment over time. The project would connect to the adjacent Transgrid substation.

The Department publicly exhibited the EIS from 31 October 2020 until 30 November 2020. In response to the exhibition, the Department received 107 public submissions, consisting of 79 objections, 27 supporting submissions and one comment. The Department also received advice from 12 government agencies, along with an objection from Greater Hume Council which it subsequently withdrew.

Submissions in support generally pointed to the benefits of transitioning to renewable energy sources and increased employment opportunities and economic benefits to the local community. Submissions objecting to the project raised a number of concerns, with the key issues including loss of agricultural land, visual impacts and traffic concerns.

In response to agency advice and submissions, Trina undertook additional assessments and made amendments to the project to reduce visual and environmental impacts. The amendments included removal of sections of the development footprint, an increase in spacing between panel rows, and a revised heavy vehicle transport route.

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, visual amenity and traffic.

The site is predominantly used for grazing of sheep and cattle, with infrequent cropping of fodder to support the grazing. The development footprint is wholly located on soils classified as Class 4 under the Land and Soil Capability Mapping in NSW (OEH, 2017). Although this land can support grazing, it requires active management to sustain cultivation on a rotational basis. This is consistent with the Large-Scale Solar Energy Guideline's focus on identifying Biophysical Strategic Agricultural Land (BSAL) and land classes 1, 2 and 3 as constraints that should be considered in site selection.

Even with the other approved solar farms in the Greater Hume LGA, the Department considers that the project would not significantly reduce the overall agricultural productivity of the region as a whole, and that the inherent or long-term agricultural capability of the site would not be affected as the site would be returned to agricultural uses in the future following decommissioning and rehabilitation.

The solar farm is relatively low-lying (solar panels up to 5 m high) and existing vegetation provides screening of the project from most nearby residences. Impacts would be further minimised by the proposed on-site vegetation screening, and Trina has committed to continue to offer neighbour agreements to nearby residences.

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 well-established vegetation along the project boundary, roadside corridors, within neighbouring properties and retained on site.

While the introduction of the project would represent a change to the local rural landscape, the Department considers that Trina'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 Large-Scale Solar Energy Guidelines.

The Department acknowledges that impacts associated with the projected traffic movements was raised in about two-thirds of community submissions, and was a key concern identified by Council.

In response to these concerns, Trina amended the proposed road haulage route in consultation with Council. Importantly, the revised haulage route no longer includes the use of Glenellen Road. In consideration of the revised road haulage route and proposed road upgrades, the Department considers that the project would not result in significant impacts to the road network condition, efficiency or safety, noting Council also confirmed its key concerns had been addressed.

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 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 200 MW of renewable energy to the National Electricity Market, enough to power approximately 76,500 homes and save over 423,800 tonnes of greenhouse gas emissions per year.

The project would also provide other flow on benefits to the local community, including up to 200 construction jobs and contributions to Council through a voluntary planning agreement for community enhancement projects valued at \$2.5 million. There would be broader benefits to the State through an injection of \$250 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 Project

1.1 Project overview

- 1. Trina Solar (Australia) Pty Ltd (Trina) proposes to develop a State significant development (SSD) solar farm, approximately two kilometres (km) north-east of Jindera, in the Greater Hume local government area (LGA) (see **Figure 1**).
- 2. The project involves the construction of a solar farm with a generating capacity of approximately 200 megawatts (MW), along with the upgrading and decommissioning of infrastructure and equipment over time. The project would connect directly in to the adjacent TransGrid substation (see **Figure 2**).
- 3. The key components of the project are summarised in **Table 1** and shown in **Figure 2**, and detailed in the Environmental Impact Statement (EIS) (see **Appendix A**) and supporting documentation (see **Appendix C, D and F**).





Table 1 | Key Components of the Project

Aspect	Description	
Project Summary	 The project includes: approximately 393,960 single-axis tracking solar panels, up to 5 m high, and up to 60 power conversion units (including inverters and transformers); construction of grid connection infrastructure as an expansion of TransGrid's existing Jindera Substation; above and/or below ground cabling across the site; and internal access tracks, staff amenities, maintenance buildings, offices, laydown areas, car park, vegetation screening and security fencing. 	
Project area	Site: 398 ha Development Footprint: 309 ha	
Site entry and road upgrades	 Road upgrades proposed: upgrades to the intersection at Urana / Walla Walla Jindera Road; upgrades to the intersection at Walla Walla Jindera Road / Lindner Road; widening of Lindner and Ortlipp Roads; and upgrades to the intersection at Lindner / Ortlipp Road. 	
Subdivision	For the purposes of a long-term lease, the project involves the subdivision of Lot 3 DP 411022, Lot 3 DP 1190444, Lot 27 DP 753342, Lot 101 DP 791421, Lot 1004 DP 1033823, Lot 1 DP 588720.	
Construction	The construction period would be up to 18 months, with construction hours limited to Monday to Friday 7am to 6pm, and Saturday 8 am to 1 pm .	
Operation	The expected operational life is approximately 30 years. However, the project may involve infrastructure upgrades that could extend operational life .	
Decommissioning and rehabilitation	The project includes decommissioning at the end of the project life, which would involve removing all infrastructure.	
Employment	Up to 200 construction jobs and up to ten full-time jobs during operation	
Capital Investment Value	Approximately \$250 million	



Figure 2 | Indicative Project Layout

2 Strategic context

2.1 Site and Surrounds

- 4. The project is located within the Riverina Murray region of NSW and the site is currently used for agricultural purposes, predominantly grazing of sheep and cattle, with infrequent cropping of fodder to support the grazing.
- 5. The site does not contain any mapped Biophysical Strategic Agricultural Land (BSAL), and land within the development footprint is comprised entirely of Land and Soil Capability (LSC) Class 4 (i.e. land with moderate to severe limitations).
- 6. Land within the site is generally flat to gently undulating and comprises substantially cleared agricultural land, with patches of native vegetation and scattered paddock trees. In addition, there are several ephemeral watercourses traversing the site, including Dead Horse Creek and Kilnacroft Creek flowing from west to east (see **Figure 2**), along with several farm dams scattered across the site.
- 7. There is existing electricity transmission infrastructure surrounding the site, including Transgrid's Jindera substation, which connects with a 22 kilovolt (kV) distribution line, two 132 kV transmission lines traversing the southern portion of the site, and a 330 kV TransGrid transmission line across the northern portion of the site (see **Figure 2**).
- 8. The project site is bounded to the south by Lindner Road, and along its western boundary by Ortlipp Road which would provide access to the site.
- 9. The surrounding land use is primarily agricultural, with 22 rural dwellings within 1 km of the site (comprising two associated residences and 20 non-associated residences). The township of Jindera is located approximately 2 km to the southwest.
- 10. The Jindera Solar Farm, which was approved by the Independent Planning Commission (the Commission) on 22 December 2020, would be located approximately 320 m to the north-west of the site.

2.2 Nearby Solar Farms

- 11. The Riverina Murray region of NSW has attracted considerable interest from solar developers given the presence of major transmission lines and existing electricity substations. There are three approved SSD solar farms within 50 km of the project, namely:
 - Jindera Solar Farm located approximately 320 m north-west;
 - Walla Walla Solar Farm located approximately 18 km north; and
 - Culcairn Solar Farm located approximately 21 km north.
- 12. Should the project be approved, there is the potential for the construction periods of these four projects to overlap.
- 13. The Department's consideration of potential cumulative impacts, including agricultural land, traffic, noise, workforce accommodation and visual amenity is provided in **Section 5**.

2.3 Renewable Energy Context

14. As the transition from coal-fired power to renewable energy sources accelerates in NSW, there is an increasing need for renewable energy generation sources. 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 2** below.

Table 2 | Energy Context

Policy / Year	Summary	
Australia's Long Term Emissions Reduction Plan (2021)	Sets a pathway to net zero emissions by 2050 and affirms Australia's commitment to meeting its revised 2030 target (43% below 2005 levels).	
Australian Energy Market Operator's 2022 Integrated System Plan (ISP)	 Notes that: 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 a mix of solar and wind is needed, and they offer complementary daily and seasonal profiles. 	
NSW:	Relevant aspects of these policy documents include:	
Climate Change Policy Framework (2016);	 aims to achieve net zero emissions in NSW by 2050 and reduce emissions by 70% below 2005 levels by 2035; 	
Transmission Infrastructure Strategy (2018)	 notes that all coal fired power plants in NSW are scheduled for closure within the next twenty years; and 	
Electricity Strategy (2019)	 regional goals to support the State's transition to lower emissions and Council goals to promote renewable energy production. 	
Electricity Infrastructure Roadmap (2020)		
Net Zero Plan Stage 1: 2020 – 2030 (2020) and Implementation update (2022)		
Riverina Murray Regional Plan 2041		

- 15. The project would be located in close proximity to the South West Renewable Energy Zone and would have direct access to the electrical grid. With a capacity of 200 MW, the project would generate enough electricity to power approximately 76,500 homes.
- 16. 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

- 17. 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.
- 18. 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 it was lodged prior to their release, the project is broadly consistent with the principles in the revised guideline.
- 19. 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

- 20. 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 (State and Regional Development) 2011 (SRD SEPP), as it is development for the purpose of electricity generating works with a capital investment value of more than \$30 million.
- 21. Under section 4.5(a) of the EP&A Act and clause 1(b) of section 2.7 of the *State Environmental Planning Policy (Planning Systems) 2021* (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 and Council objected during the exhibition period, noting this objection was subsequently withdrawn.

3.2 Environmental Planning and Assessment Regulation 2000

22. As the development application for the project had been made but was not finally determined before 1 March 2022, the *Environmental Planning and Assessment Regulation 2000* continues to apply to the assessment and determination of this project (instead of *the Environmental Planning and Assessment Regulation 2021*).

3.3 Amended Application

- 23. In accordance with clause 55 of the EP&A Regulation, a development application can be amended at any time before the application is determined. Trina sought to amend its application, the details of which are summarised in **Section 4.6** 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 19 November 2021, 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 have reduced the impacts of the project as a whole;
 - the amended application directly responds to the key issues raised in submissions received by the Department during the exhibition of the original application;
 - Trina 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.

3.4 Permissibility

- 26. The site is located on land zoned RU1 Primary Production, under the *Greater Hume Local Environmental Plan 2012* (Greater Hume LEP). As electricity generating works are not expressly listed as permitted with or without consent, it is a prohibited land use under a strict reading of the Greater Hume LEP.
- 27. However, electricity generating works are permissible with consent on any land in a prescribed rural, industrial or special use zone, including RU1 zones, under Clause 34 of the *State Environmental Planning Policy (Infrastructure)* 2007 (Infrastructure SEPP).
- 28. Consequently, the project is permissible with development consent.

3.5 Integrated and Other Approvals

- 29. 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.
- 30. 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*).
- 31. 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**).
- 32. Trina 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.

3.6 Mandatory Matters for Consideration

- 33. 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 Trina'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 its provisions.
- 34. Since lodgement of the EIS, all NSW State Environmental Planning Policies have been consolidated into 11 policies. The consolidated SEPPs commenced on 1 March 2022, with the exception of *State Environmental Planning Policy (Housing) 2021* (Housing SEPP), which commenced on 26 November 2021.
- 35. The SEPP consolidation does not change the legal effect of the repealed SEPPs, as the provisions of these SEPPs have simply been transferred into the new SEPPs. Further, any reference to an old SEPP is taken to mean the same as the new SEPP. For consistency, the Department has considered the development against the relevant provisions of the SEPPs that were in force when the EIS was lodged.

4 Engagement

4.1 Departments Engagement

- 36. The Department publicly exhibited the EIS from 31 October 2020 until 30 November 2020, advertised the exhibition in the Albury Border Mail, and notified landowners adjacent to the project boundary.
- 37. The Department consulted with Council and relevant government agencies throughout the assessment and inspected the site on 20 May 2022. The Department also notified and sought comment from Transgrid and Transport for NSW (TfNSW) in accordance with the Infrastructure SEPP.

4.2 Summary of Submissions

- 38. During the exhibition period, the Department received 107 public submissions, consisting of 79 objections (including one petition signed by 67 individuals), 27 supporting submissions and one comment. Of the 79 objections received, 77 were considered 'unique' for the purposes of the assessment.
- 39. Advice was also received from 12 government agencies, along with an objection from Council which it subsequently withdrew (see **Section 4.3**).

40. A full copy of the public submissions and agency advice is provided in **Appendix B** and **Appendix E** respectively.

4.3 Advice from Government Agencies

41. A summary of the key matters raised in the government agency advice is provided in Table
3. The Department's consideration of the matters raised is provided in Section 5 of this report.

Table 3 | Agency Advice

Agency	Key Issues
Crown Lands Group	Recommended that tenure arrangements for Crown Roads within the site be formalised and that the project does not interfere with Crown Reserves. Trina confirmed the relevant Crown Road has been purchased
	and there are no Crown Reserves within the site.
Department of Primary Industries – Agriculture	Department of Primary Industries – Agriculture (DPI Agriculture) raised no objections to the project and indicated support for the proposed land management arrangements on the site.
Department's Biodiversity, Conservation and Science Directorate (BCS)	Requested further evidence justifying the extent of Category 1 Land mapped within the site, along with additional flood modelling to ensure appropriate locating of infrastructure.
	Following its review of the Submissions Report and Amendment Report, BCS confirmed its concerns had been adequately addressed, noting the impacts along the revised haulage route had been assessed in the updated BDAR.
Department's Water Group	Sought clarification regarding construction and operational water supply arrangements as well as justification for the proposed riparian buffer widths to watercourses traversing the site.
Fire and Rescue NSW	Recommended a number of conditions, including the development of an Emergency Response Plan, which have been incorporated into the recommended conditions of consent.

Agency	Key Issues
Heritage NSW	Sought clarification on the timing of the proposed community collection of the three artefacts identified on-site, and the need for additional surveys should the project site be amended further. Following its review of the Submissions Report and Amendment Report, Heritage NSW confirmed its concerns had been adequately addressed.
TransGrid	Raised no objections to the project and confirmed it is working with Trina regarding connection of the project to the network.
Transport for NSW (TfNSW)	Initially raised concerns regarding the road haulage route, noting it was only conditionally approved for B-Double access. Following review of the revised road haulage route, TfNSW confirmed it had no residual issues and recommended a Traffic Management Plan be prepared for the project.

The NSW Environment Protection Authority (EPA), Water NSW, Rural Fire Service, Department of Regional NSW – Mining, Exploration and Geoscience and Department of Primary Industries – Fisheries confirmed they had no concerns.

4.4 Summary of Council's Submission

- 42. Council initially objected to the project, citing impacts on biodiversity, loss of agricultural land, road safety, and the potential for the project to limit the future growth of Jindera.
- 43. Other concerns raised by Council included potential amenity impacts to nearby residences, such as dust generation and heat island effects as well as socio-economic impacts, including developer contributions and the potential impacts of the project on the local economy.
- 44. Trina addressed these matters in its Submissions Report and Amendment Report and Council subsequently withdrew its objection, confirming that its concerns had been addressed.

4.5 Summary of Public Submissions

4.5.1 Submissions in Support

- 45. 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.
- 46. These submissions also discussed the positive social impacts of the project, including increased employment opportunities and economic benefits to the local community.

4.5.2 Submissions in Objection

- 47. Public submissions objecting to the project cited a range of issues, with the key issues including loss of agricultural land, visual impacts and traffic concerns (see **Figure 3**).
- 48. The Department has undertaken a detailed assessment of these issues in Sections 5.2.2,
 5.4 and 5.3 respectively, including consideration of advice from Government agencies and Council.
- 49. Public submissions also raised concerns about the project's impacts on land value in the region, proximity of the project to the Jindera township, impacts on biodiversity and water resources, amenity impacts (e.g. noise, dust and the 'heat island effect'), and bushfire risks.
- 50. A number of submissions also commented on a lack of consultation during the assessment process, inadequate timeframes provided for the community to review and comment on the EIS and supporting documentation, and the fact that Trina is foreign-owned.
- 51. 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 3 | Key Issues Raised in Objections

4.6 Response to Submissions and Amendment Report

- 52. Trina provided a response to all matters raised in submissions, in the form of a Submissions Report (see **Appendix C**). Following consideration of submissions on the project, Trina amended its application as detailed in the Amendment Report (see **Appendix D**). Key amendments to the project design include:
 - reduced impact on native vegetation by avoiding 2.7 ha and 4 paddock trees;
 - revised heavy vehicle haulage route;
 - recontouring of an inundation area in the south-east of the site; and

- amendments to project design to reduce visual impacts, including:
 - $\circ\;$ relocation of the substation expansion to the south of the existing Transgrid substation;
 - o removal of more than 22,000 solar panels;
 - \circ increased spacing between solar panel rows from 6 m to 9 m;
 - $\circ~$ reduction in height of fencing (to 2.2 m) and meteorological station (to 6 m);
 - o increased setbacks from Lindner Road, Ortlipp Road and Drumwood Road; and
 - increased vegetation screening around the project site.
- 53. Despite the proposed changes, the generating capacity of the project would remain unchanged at 200_MW.
- 54. The Department provided the Submissions Report and Amendment Report to relevant government agencies for review and comment and made them available on the Department's website. As the project amendments results in a reduction in the development footprint, the Department did not exhibit the Amendment Report.
- 55. The Department also requested additional information from Trina on a number of occasions during the assessment process to assist in addressing residual issues.
- 56. Additional advice received from government authorities is provided in **Appendix E**, and key additional responses from Trina are provided in **Appendix F**.

5 Assessment

- 57. 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 land use compatibility, visual amenity and traffic impacts.
- 58. 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**.

5.1 Energy Transition

- 59. 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.
- 60. With a generating capacity of 200 MW, the solar farm would generate enough electricity to power about 86,500 homes. This is consistent with the *NSW Climate Change Policy Framework* of achieving net zero emissions by 2050.
- 61. The project, while not located in a declared Renewable Energy Zone, is in an area with direct access to the transmission network with available capacity and abundant solar resources. It

is located in the Riverina Murray region, on land where solar development is permissible with consent under the Infrastructure SEPP.

62. 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

- 63. The Department acknowledges that land use compatibility was a key concern raised in public submissions during the exhibition period (see **Section 4.5**).
- 64. 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 Project Location

- 65. The site is located wholly within the RU1 Primary Production zone under the Greater Hume LEP.
- 66. The Department acknowledges that under a strict reading of the Greater Hume LEP, a solar farm is a prohibited land use. However, as identified in **Section 3.4**, the project is permissible with consent in accordance with the provisions of the Infrastructure SEPP.
- 67. In addition, giving consideration of the objectives of the land zone and other strategic documents for the region, the Department considers that there is no clear intention to prevent the development of a solar farm on the project site.
- 68. Importantly, the project is not inconsistent with the objectives of the land zone, particularly in relation to:
 - encouraging diversity in primary industry enterprises and systems appropriate for the area; and
 - minimising fragmentation and alienation of resource lands.
- 69. While the Greater Hume LGA has traditionally relied upon agriculture, the introduction of solar energy generation would contribute to a more diverse local industry, thereby supporting the local economy and community. In addition, the proposed solar farm would encourage renewable energy development which is consistent with the *Greater Hume Local Strategic Planning Statement 2018*.
- 70. The project is consistent with the Department's *Riverina Murray Regional Plan 2041*, which identifies the development of renewable energy generation as a future growth opportunity for the region.
- 71. The Department considers that the development would not fragment or alienate any resource lands in the LGA, as the land could be returned to agricultural land following decommissioning, as the inherent agricultural capability of the land would not be affected in the long term and Trina would continue sheep grazing within the development footprint.

- 72. Council objected to the project with a number of concerns including its view that the development would restrict the ability for Jindera to grow in the direction of the site. The site is approximately 1 km north of the nearest lots zoned R2 low density residential, noting that these lots do not currently have dwellings on them. The *Greater Hume Local Strategic Planning Statement 2018*, which is Council's 20-year vision for land use in the area, does not identify land to the north of Jindera for residential expansion.
- 73. As the site is located on land zoned RU1 Primary Production, and is not identified as a future growth area by Council, and noting that Council has confirmed its previous concerns have been addressed and withdrew its objection, the Department considers the project would not impact the future growth of Jindera.

5.2.2 Potential Loss of Agricultural Land

- 74. The majority of public submissions raised the loss of agricultural land as a key concern. Further to this, one of the reasons for Council's original objection to the project was the potential loss of agricultural land.
- 75. As outlined in **Section 2.1**, the project is located within the Riverina Murray region of NSW, which has a strong and diverse agricultural sector, with over 9.1 million ha of the region being used for agriculture output. The site does not contain any mapped BSAL and 90% of the site is currently used for sheep and cattle grazing, with approximately 10% being cropped for fodder to support the grazing on site.
- 76. In response to the concerns raised by Council and the wider community, Trina commissioned an Agricultural Impact Statement, including a Land and Soil Capability Assessment, which determined that the land within the development footprint is comprised entirely of LSC Class 4. LSC Class 4 is broadly defined in the NSW Land and Soil Capability Assessment Scheme (OEH, 2012) as land with moderate to severe limitations, which can support grazing but requires active management to sustain cultivation on a rotational basis.
- 77. This is consistent with the Large-Scale Solar Energy Guideline's focus on identifying BSAL and land classes 1, 2 and 3 as constraints that should be considered in site selection.
- 78. Sheep grazing within the site would continue during the operation of the project. In consideration of the implementation of grazing, the project would only result in a 25% reduction in productive sheep carrying capacity across the site.
- 79. The inherent agricultural capability of the land would also not be affected by the project due to the relatively low scale of the development.
- 80. The Department notes that DPI Agriculture did not raise any concerns with the project and confirmed that it supported the proposed grazing activities to minimise any reduction in agriculture productivity within the development footprint.
- 81. Furthermore, following its review of the Submissions Report and Amendment Report, Council confirmed that its concerns had been addressed and that it no longer objected to the project.
- 82. Regarding potential cumulative impacts, the development footprint of the project combined with other operational, approved and proposed SSD solar farms in the Riverina Murray region

would be approximately 8,000 ha. The loss of 8,000 ha of agricultural land represents a very small fraction (0.09%) of the 9.1 million ha of land being used for agricultural output in the Riverina Murray region¹, and would result in a negligible reduction in the overall productivity of the region.

- 83. The Department considers that the project represents a reasonable use of the land that is generally consistent with the broader and specific land use planning objectives for the site and the region under relevant planning instruments and strategies.
- 84. To ensure impacts on agricultural land is minimised, the Department has recommended conditions requiring Trina to maintain the capability of the agricultural land, and to fully reinstate the agricultural capability of the land following decommissioning of the project.

5.3 Traffic

- 85. Traffic movements associated with the project, particularly during the construction phase, have the potential to result in decreases in road condition and intersection performance, along with increases in travel time and road safety issues.
- 86. Daily traffic movements during the 12 to 18 month construction phase of the project would be comprised of approximately 40 light vehicles, 13 buses, and up to 45 heavy vehicles. Light and heavy vehicle movements during the operational phase would be negligible.
- 87. The Department acknowledges that impacts associated with these projected traffic movements was raised in roughly two-thirds of community submissions (see **Section 4.5**), and was a key concern identified by Council.
- 88. In particular, Council's comments raised concern regarding the ability of the Glenellen Road to accommodate the anticipated heavy vehicle traffic, while community submissions focused on safety concerns associated with the heavy vehicle movements through Jindera, and potential interactions with school buses.
- 89. In response to these concerns, Trina amended the proposed road haulage route in consultation with Council, and conducted a revised Traffic Impact Assessment. Importantly, the revised haulage route no longer includes the use of Glenellen Road. In light of this, Council withdrew its original objection to the project.
- 90. The amended road haulage route, assuming that site components would be delivered from the Port of Newcastle, follows the Hume Highway, Thurgoona Drive, Union Road, Urana Road, Walla Walla Jindera Road, Lindner Road, and Ortlipp Road.
- 91. A second route was also assessed, in the instance where site components would be delivered from a port in Melbourne. In this instance, components would be railed from Melbourne to the Ettamogah Rail Hub then transported to site via Hub Road, Gerogery Road, Wagga Road, Catherine Crescent, Union Road, Urana Road, Walla Walla Jindera Road, Lindner Road, and Ortlipp Road.

¹ Riverina Murray Agricultural Industries Final Report, Department of Planning and Environment, January 2016.

- 92. The majority of roads along these routes are B-Double approved and able to accommodate the proposed traffic movements. However, a number of upgrades would be required in order to improve the safety and efficiency of the road network. These include:
 - upgrade the Urana Road / Walla Walla Jindera Road intersection to a Channelised Right;
 - upgrade the Walla Walla Jindera Road / Lindner Road intersection to a Basic Auxiliary Right;
 - widen the Lindner Road approach to accommodate the passing of a 26m B-double and passenger car;
 - widen Lindner Road and Ortlipp Road to a formation width of 8m with 3.5m wide travel lanes; and
 - upgrade the intersection of Lindner Road / Ortlipp Road to accommodate 26m Bdouble movements.
- 93. In relation to cumulative impacts, there would be no reduction in the Level of Service (LOS) on any roads along the haulage route, even if the peak construction period for the project overlaps with that of the Jindera Solar Farm.
- 94. Overall, the Department considers that the project would not result in significant impacts to the road network condition, efficiency or safety given the implementation of the proposed upgrades.
- 95. To ensure potential impacts are minimised, the Department has recommended conditions requiring Trina to:
 - prepare a Traffic Management Plan in consultation with TfNSW and Council:
 - undertake the road upgrades outlined above;
 - limit the number of heavy vehicle movements (including over-dimensional vehicles) during construction, upgrading and decommissioning;
 - prohibit heavy vehicle movements along Glenellen Road;
 - undertake dilapidation surveys of Ortlipp and Lindner Roads and repair any damage caused by the project to the satisfaction of Council;
 - prohibit heavy vehicle movements through the Jindera township during school zone times of 8am to 9.30am and 2.30pm to 4pm;
 - limit heavy vehicle movements during school bus pick off and drop off times in consultation with Council and the relevant bus companies; and
 - encourage construction workers to travel to site via a bus service supplied by Trina.

5.4 Visual

- 96. Concerns about visual impacts were raised in more than half of the public submissions on the project. These concerns included the proximity of the project to surrounding residences and potential impacts on the scenic quality, landscape and rural outlook of the locality.
- 97. Trina provided a Landscape and Visual Impact Assessment with the EIS, an addendum assessing the amended application and further information clarifying the assessment of impacts at a number of non-associated dwellings.
- 98. The Department visited the site and nearby non-associated residences to assess visual impacts and to further understand residents' concerns.
- 99. The Department's *Large Scale Solar Energy Guideline* (2018) applies to the assessment as it was in force at the time of the development application.
- 100. However, to ensure its assessment is in line with contemporary landscape and visual requirements, the Department also considered the content of the revised Large-Scale Solar Energy Guideline (2022) (2022 Solar Guideline) and accompanying Technical Supplement Landscape and Visual Impact Assessment, which provides a detailed description of the landscape character and visual impact assessment process for large-scale solar energy development in NSW.

5.4.1 Visual Context

- 101. Land within the site is generally flat to gently undulating, with a small rise at its centre, and comprises substantially cleared land, with patches of native vegetation and scattered paddock trees.
- 102. The surrounding area comprises a relatively flat landscape predominantly characterised by agricultural uses, including farmland, rural residences and road corridors.
- 103. There are 20 non-associated residences within 1 km of the site, and a further 70 residences between 1 km and 2 km from the site (see**Figure 4**).
- 104. The approved (but yet to be developed) Jindera Solar Farm is located approximately 320 m northwest of the site, while the township of Jindera is located just over 2 km to the southwest.

5.4.2 Impact Assessment

Impacts on Landscape Character

- 105. Due to the relatively flat nature of the local landscape, the buffer distances between project infrastructure and local roads, and the retention of remnant native vegetation, both along the perimeter of the site and within the site, views of the project would be limited beyond its immediate vicinity. Existing landscape features including roadside vegetation and topography screen the project from the majority of public locations.
- 106. Public views are limited to local roads with a low frequency of use, that run adjacent to the project boundary. There would be limited views of the project from Urana Road, Dights Forest

Road, Glenellen Road and Nioka Road due to existing well-established roadside vegetation. There would be filtered views of the project for vehicles travelling along Ortlipp Road and Drumwood Road, with topography, existing vegetation and supplementary plantings along the fringes of the development footprint limiting the visual impact experienced while travelling these roads.

107. The Department recognises that the introduction of the solar farm to a rural setting would result in a material change to the local landscape, but considers it would have a limited impact beyond the project's immediate vicinity and would not be visible from the township of Jindera.

Impacts on Residences

- 108. In response to the submissions provided on the EIS, there were a number of amendments to the project design to reduce potential visual impacts (see **Section 4.6** and **Figure 2**) and a revised Visual Assessment was prepared, which included an assessment against the 2022 Solar Guideline.
- 109. The nature of the proposed development would minimise its visibility from surrounding residences, as the solar panels would be relatively low lying (up to 5 m high) and maintenance buildings, inverter stations and the onsite substation would generally be a similar size to agricultural sheds commonly used in the area.
- 110. The presence of several roads surrounding the project site, and the associated wellestablished vegetation along the road corridors, means that there is a natural separation and setback between the majority of residences and the site.
- 111. With the exception of the residences noted below, the visual impact for residences surrounding the site is expected to be negligible due to distance, topography and the extent of intervening well-established vegetation along the project boundary, roadside corridors, within neighbouring properties and retained on site.
- 112. Some residences within close proximity to the site have the potential to experience low visual impacts. This is summarised in **Table 4** below.

Residence ID and distance to solar panels	Trina's visual impact rating	Proposed mitigation measures and Department's assessment
Lindner Road, Ortlipp Road and Drumwood Road (LIN001, 004, 005, 007 and DRM008)	Low	 These residences are at the same elevation as the site and existing intervening vegetation would fragment views, resulting in low visual impacts. The proposed vegetation screening would further reduce views of the project. Noting proximity to the site, Trina has committed to continue to offer neighbour agreements to mitigate visual impacts. In addition, the Trina has committed to providing additional vegetation screening or scattered trees at residences, in consultation with landowners.

Table 4 | Summary of impacts to residences assessed to have low visual impacts

Residence ID and distance to solar panels	Trina's visual impact rating	Proposed mitigation measures and Department's assessment
Nioka Road and Redhill Road (NIK002, 003, 010 and MLA01, 02)	Low	 In accordance with the 2022 Solar Guideline, the existing visual impact would be low at all residences. Whilst these residences are in an elevated position (35 m - 90 m above the site), existing well established vegetation would fragment views. Proposed vegetation screening would further reduce impacts. Trina has committed to continue to offer neighbour agreements to mitigate visual impacts at NIK003 and MLA01. In addition, the Trina has committed to providing additional vegetation screening or scattered trees at residences NIK003 and MLA01, in consultation with landowners.
Other residences with low visual impact rating MLA03, LIN006, WWJ006, 016, ORT008, FM0002, BRE001.	Low	 In accordance with the 2022 Solar Guideline, the existing visual impact would be low at all residences. These residences are elevated 15 m - 30 m above the site. Existing vegetation would fragment views and proposed vegetation screening would assist in screening views to the project.

- 113. Trina has committed to developing a detailed Landscape Plan, in consultation with Council and nearby landowners, to ensure that plantings are effective in minimising views and are maintained.
- 114. The Department considers that there would be no significant visual impacts on surrounding residences, and the rural character and visual quality of the area would be preserved as far as practicable.
- 115. To ensure this occurs, the Department has recommended conditions requiring Trina to:
 - minimise the off-site visual impacts of the development;
 - establish and maintain a vegetation buffer as per the draft landscape plan provided in the EIS;
 - 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.



Figure 4 | Location of Surrounding Residences



Figure 5 | Predicted Visual Impacts at LIN005 – Before and After Mitigation

5.4.3 Glint and Glare

- 116. 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.
- 117. 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.
- 118. The existing intervening vegetation, along with the proposed vegetation screening, would shield or minimise views of the development from surrounding residences, including views of infrastructure with the potential to create glare or reflection.
- 119. To ensure this occurs, the Department has recommended conditions requiring Trina to minimise the off-site visual impacts of the development, including the potential for any glare or reflection, and to ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape. Subject to the recommended conditions, the Department is satisfied that the project would not cause significant glint or glare to nearby residences.

5.4.4 Cumulative Impacts

- 120. As outlined above, the approved (but yet to be developed) Jindera Solar Farm is located approximately 320 m north-west of the site, and while there is potential to view the two solar farms simultaneously from a static viewpoint, these opportunities are limited. Existing intervening vegetation would largely screen any potential views of both projects simultaneously, and both projects have committed to further mitigating visual impacts with additional vegetation screening.
- 121. The project would not be visible from other solar farms in the LGA, including Walla Walla Solar Farm (18 km north) and Culcairn Solar Farm (21 km north), and the set back of the project prevents any opportunities to view solar farms in quick succession along major travel routes.
- 122. As such, the Department considers that any potential cumulative visual impacts with the Jindera Solar Farm would be minor.

5.4.5 Conclusion

- 123. The site selection and project design is consistent with the Department's 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 with views toward the site.
- 124. The Department considers that Trina has adequately reduced the potential visual impacts of the project to an acceptable level, while largely maintaining the proposed solar power generating capacity.

5.5 Other Issues

125. The Department's consideration of other issues is summarised in **Table 5** below.

Table 5 | Other Issues

Issue	Recommended conditions
Biodiversity	
 The project site covers an area of 398 ha, which includes a disturbance footprint of approximately 309 ha. The site has been subject to decades of clearing for agricultural use and is comprised predominantly of paddock trees with exotic pasture. Notwithstanding, two native Plant Community Types (PCT) have been mapped within the site (including along the revised road haulage route), namely PCT 277 (Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion) and PCT 9 (River Red Gum - Wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion). The occurrence of PCT 277 within the site conforms to the Critically Endangered Ecological Community (CEEC) 'White Box Yellow Box Blakely's Red Gum Woodland', listed under the BC Act. However, it does not meet the criteria of CEEC under the EPBC Act due to the poor condition of the vegetation. A total of approximately 8.7 ha of native vegetation (including paddock trees) would be cleared for the project, noting this was reduced from approximately 11.4 ha in response to submissions received on the EIS (see Section 4.5). This includes, approximately 95% (7.3 ha) of PCT 277 and 1 ha of PCT 9. Importantly, approximately 95% (7.3 ha) of PCT 277 within development footprint lacked a midstorey, and the groundcover was dominated by exotic pasture. Given the very low quality of this 7.3 ha, the vegetation integrity (VI) score was calculated to be 18, only just meeting the minimum VI score of 15 required to generate ecosystem credits under the NSW Biodiversity Assessment Method. Three threatened species listed under the BC Act have suitable habitat within the site: Southern Myotis (Myotis Macropus) – 1 ha; Austral Pillwort (Pilularia novae-hollandiae) – 1 ha; and Squirrel Glider (Petaurus norfolcensis) – 0.05 ha. Given the minor extent of clearing and the degraded nature of the vegetation within the site, the Department cons	 Retire the applicable biodiversity offset credits in accordance with the NSW Biodiversity Offsets Scheme. 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.

Issue	Recommended conditions
Heritage	
 Aboriginal Cultural Heritage Surveys identified 3 stone artefact sites within the development footprint. All items were assessed to be of low significance. These would be salvaged and relocated in consultation with Registered Aboriginal Parties (RAPs) and prior to the commencement of construction. If Aboriginal artefacts or skeletal material are identified during construction of the project all work would cease and an unexpected finds procedure would be implemented. With these measures, the Department considers that the project is unlikely to result in significant impacts on the heritage values of the locality. Historic Heritage No heritage items listed on Commonwealth, National or State registers are located within or surrounding the site. Site inspections undertaken did not identify any new heritage sites or items occurring within or near the development footprint. The nearest locally listed heritage item is "Drumwood" homestead and outbuildings, with its curtilage being approximately 30m southeast of the site. Based on the outcomes of the visual assessment, visual impacts on "Drumwood" and its curtilage are expected to be low. The Department considers that the project would not have any adverse impacts on local heritage items in the area. 	 Prepare and implement a Heritage Management Plan, including procedures for unexpected finds, in consultation with RAPs. Salvage and relocate Aboriginal items in consultation with RAPs.
Amenity	
 Noise Public submissions expressed concern about the noise impacts of the project including cumulative impacts from several solar farms within the locality. Construction noise levels are predicted to exceed the 'noise management level' of 50 dB(A) in the <i>EPA's Interim Construction Noise Guideline</i> (ICNG) at the nearest residences (as represented by LIN007 and ORT005). Exceedances of up to 23dB(L_{Aeq}) are predicted, however these impacts would be short-term (approximately one to two weeks) and intermittent (two to three hours per day). Construction noise would be limited to standard daytime construction hours, and would be transient as construction progresses across the site. All noise generated during construction, upgrading and decommissioning activities would be below the 'highly noise affected' criterion of 75 dP(A) in the ICNG at all nearby residences. 	 Minimise noise generated by the construction, upgrading or decommissioning activities on site in accordance with best practice requirements outlined in the ICNG. Comply with the noise management levels as derived from the NSW Noise Policy for Industry (EPA, 2017) at any non-associated residence.

Issue

- Noise mitigation work practices set out in the ICNG would be implemented, which may include scheduling activities to minimise noise, use of acoustic barriers and maximising separation distances.
- Operational noise would comply with relevant noise criteria, as calculated in accordance with the NSW Noise Policy for Industry (EPA, 2017), at all residences.
- Consistent with the impacts identified above, consideration of cumulative noise impacts found that no residences would experience exceedances of the highly-affected noise management criterion in the event that Glenellen and Jindera solar farms were constructed concurrently.
- Road traffic noise during construction of the project would comply with the relevant criteria in the EPA's *Road Noise Policy,* provided construction traffic is limited to 40 km/hr along Ortlipp and Lindner Roads, which Trina has committed to in its EIS.
- 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.

Dust

- Public submissions raised concern that the project would result in unacceptable dust impacts in the local area. Some submissions expressed concern about the project's potential to generate dust during construction, whilst others were concerned with potential dust impacts during operation of the project, in the event that groundcover on site could not be sufficiently established due to overshadowing by solar panels.
- To manage dust suppression along the haulage route to the site during construction, a water truck would be used and 40 km/hr speed limits would be adhered to.
- In addition, the Department considers the likelihood of dust generation during operation of the project is low given ground cover would be quickly established across the site to enable the proposed sheep grazing operations.
- 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.

Heat Island Effect

- 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".
- 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.

Recommended conditions

- Restrict construction hours to Monday to Friday, 7am to 6 pm and Saturday, 8 am to 1 pm.
- Minimise dust generated by the development.
- Establish and maintain groundcover with appropriate perennial species as soon as practicable following construction.

Issue	Recommended conditions
 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. The development footprint is located more than 30 m away from the boundary of adjacent private properties, and has incorporated visual screening which would aid in mitigating any potential heat island effects that occur. 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. 	
Water and Erosion	
 The project is located within the Upper Murray River catchment, and the site contains two third order streams, namely Kilnacroft Creek and Dead Horse Creek, along with a number of smaller unnamed tributaries (see Figure 2). Flood modelling confirmed that the project would result in a negligible impact on peak water surface height and peak flows across the site. The project would require around 17.5 ML per annum of water during construction for dust suppression and other construction purposes. The project would require 1.8 ML per annum during operation, most of which will be allocated for cleaning of solar panels (approximately 1.2 ML). It is estimated that 0.39 ML would be allocated to other maintenance activities including the proposed landscaping. Trina has confirmed with Council that the water usage required during the construction and operational phases of the project can be provided from the Council village water scheme. Water would be drawn from the standpipe at the intersection of Urana Road and Jindera Walla Walla Road and transported to the site via truck. If additional water is required, Trina would obtain relevant approvals and licences under the <i>Water Management Act 2000</i> before commenting any works which intercept or extract groundwater or surface water from the site. In response to comments regarding drainage impacts on neighbouring properties, a small inundation area in the south-eastern part of the site would be re-contoured to prevent any backfilling inundation into adjacent properties. Any erosion and sedimentation risks associated with the project can be effectively managed using best practice construction techniques. The project is not expected to affect groundwater resources or groundwater dependent ecosystems. Subject to the recommended conditions, the Department considers that the project would not result in significant impacts on water resources. 	 Ensure the project is designed, constructed and maintained to reduce impacts on surface water, localised flooding and groundwater. Minimise soil erosion in accordance with OEH's Managing Stormwater: Soils and Construction Manual (Landcom, 2004) and ensure that the project is constructed and maintained to avoid causing erosion on site. Ensure all works are undertaken in accordance with Guidelines for Controlled Activities on Waterfront Land (NRAR, 2018).
Hazards Analysis and Bushfire Risk	
 <u>Hazards Analysis</u> A preliminary risk screening was undertaken in accordance with <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> (former provisions), and the relevant Hazardous Industry Planning Advisory Papers. 	• Prepare and implement a detailed Emergency Plan, that

Issue	Recommended conditions
 It was determined that the type and quantity of chemicals expected to be stored at the site would be below all relevant thresholds and, as such, the project was not deemed to be 'potentially hazardous' and a Preliminary Hazard Analysis was not required. Bushfire Risk Portions of the site and its surrounds are mapped as bushfire prone land (Vegetation Category 2) on the <i>Greater Hume Shire Bushfire Prone Land Map</i>. To actively manage risk, Trina would implement a range of management measures including (but not limited to): establish and maintain a 10 m Asset Protection Zone around all project infrastructure; comply with the requirements of RFS's <i>Planning for Bushfire Protection 2019</i> and <i>Standards for Asset Protection Zones;</i> providing four 10,000 litre water tanks at locations agreed with the RFS for the sole use of fire protection; and prepare an Emergency Plan, consistent with the recommendations of Fire and Rescue NSW. 	 identifies procedures for managing risks on site. Implement procedures and controls for managing fire hazards, including maintenance of an asset protection zone in accordance with requirements of the RFS' Planning for Bushfire Protection guidelines.
standard fire management procedures.	
Social and Economic Impacts	
 The project would generate direct and indirect benefits to the local community, including: up to 200 construction jobs over the 12 to 18 month construction period; expenditure on accommodation and businesses in the local economy by workers involved in the project; and the procurement of goods and services by Trina and associated contractors; Council raised concerns that the local economic benefits of the project would largely be realised in nearby towns, rather than within Jindera, given the limited availability of accommodation in the township for the construction workforce. 	 Prepare an Accommodation, and Employment Strategy for the project in consultation with Council, with consideration to prioritising the employment of local workers. Enter into a VPA with Council.
 The Department has recommended conditions requiring Trina develop an Accommodation and Employment Strategy in consultation with Council which would aim to maximise the use of local accommodation, local businesses and workers within the Greater Hume LGA in the first instance, before looking further afield. Trina has offered a VPA with Council, totalling \$2.5 million. 	
 In addition to the above contributions, Trina has offered neighbour agreements to ten properties neighbouring the project as an additional means of acknowledging that minor residual impacts may still occur, and that the anticipation of potential impacts may be a cause of angst in the local community. 	
• These agreements would take the form of a one off financial contribution, and seek to pre-emptively share a portion of the financial returns from the project with neighbours.	

Issue		Recommended conditions
•	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. Noting the above, the Department considers that the project would provide economic benefits for the local community.	
La	nd Value	
•	The Department considers that the project would not result in any significant or widespread reduction in land values in areas surrounding the project. The Department notes that: - the project is permissible with development consent under both State and local planning instruments; - a detailed assessment of the merits of the project has found that the project is unlikely to generate significant	No specific conditions required
	economic, environmental or social impacts;	
	 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; and 	
	 the Department considers that the visual impacts of the project on the surrounding residences and road users would not be significant; and 	
	 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&A Act, unless the project would have significant and widespread economic impacts on the locality, which is not the case in this instance. 	
•	Decommissioning and Rehabilitation	
•	The operational life of a large-scale solar project is likely to range between 20 to 30 years, however they have the potential to operate for a long period of time if solar panels are upgraded over time, which would be permitted under the recommended conditions of consent.	 Include rehabilitation objectives requiring the site to be rehabilitated within 18
•	The 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).	months of cessation of operations.
•	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.	

6 Evaluation

- 126. 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.
- 127. 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 Trina's evaluation of the project's merits against applicable statutory and strategic planning requirements.
- 128. The project is permissible with consent in accordance with the Infrastructure SEPP and is located on agricultural land, most of which has been historically cleared and modified for grazing. The project has been designed to largely avoid site constraints, including remnant native vegetation, on-site watercourses, and farm dams, while maintaining its ability to utilise the existing electricity infrastructure and road network. This is consistent with the Large-Scale Solar Energy Guideline's focus on avoiding or minimising impacts during site selection and design.
- 129. Submissions in support highlighted the benefits of transitioning to renewable energy sources, along with employment opportunities and economic benefits to the local community. However the majority of public submissions objected to the project, citing a range of issues, including loss of agricultural land, visual impacts and traffic concerns.
- 130. Firstly, with respect to impacts on agricultural land, the Department considers that the development would not fragment or alienate any resource lands in the LGA, as the land would be returned to agricultural land following decommissioning. 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.
- 131. Secondly, the Department considers that with the additional setbacks from the nearest sensitive receivers, intervening existing vegetation and proposed additional landscape planting, the project is not likely to have significant visual impacts on surrounding residences.
- 132. Finally, in consideration of the revised road haulage route and proposed road upgrades, the Department also considers that the project would not result in significant impacts to the road network condition, efficiency or safety.
- 133. 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. Trina has reviewed the conditions and does not object to them.
- 134. As highlighted in the supporting submissions, the project would assist in transitioning the electricity sector from coal and gas-fired power stations to low emissions sources. It would

generate over 441,504 MWh of clean electricity annually, which is enough to power approximately 76,400 homes and save over 423,800 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.

- 135. The project would also provide flow-on benefits to the local community, including up to 200 construction jobs and a capital investment of \$250 million. A VPA involving payments to Council up to approximately \$2.5 million over the life of the project is also proposed.
- 136. 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.
- 137. 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**).

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Recommended by:

20/10/2023

Iwan Davies Director Energy Assessments

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20/10/2023

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

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

Appendix G – Recommended Instrument of Consent

https://www.planningportal.nsw.gov.au/major-projects/projects/glenellen-solar-farm

Appendix H – Consideration of community views

The Department exhibited the Environmental Impact Statement (EIS) for the project from 31 October 2020 until 30 November 2020 and received 107 public submissions, consisting of 79 objections (including one petition signed by 67 individuals), 27 supporting submissions and one comment.

The key issues raised by the community and considered in the Department's Assessment Report include land use compatibility (including impacts on rural character and the loss of agricultural land), visual impacts on surrounding landowners and traffic impacts on local roads.

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

Issue	Consideration
 Compatibility of the proposed land use Loss of agricultural land Changing rural character 	 Assessment The land within the development footprint site is entirely Class 4 land capability. The cumulative loss of agricultural land associated with the project and other approved solar projects in the region represents a very small fraction of the 9.1 million ha of land being used for agricultural output in the Riverina Murray region, therefore resulting in a negligible reduction in the overall productivity of the region.

Issue	Consideration
 Impacts on neighbouring agricultural activities 	 The site would be returned to agricultural use following decommissioning. 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. The site would also support local agriculture by potentially allowing sheep grazing, and as a result, the Department is satisfied that the project would not result in any significant reduction in agricultural productivity of the region or of local agribusiness. The project site is located on land zoned RU1- Primary Production under the Greater Hume LEP and the project is permitted with consent within this zone, due to the Infrastructure SEPP. The project is consistent with the <i>Riverina Murray Regional Plan 2041</i>.
	 The site is located close proximity to the South West Energy Zone; therefore, it is in an area with abundant solar resources and direct access to the electricity grid at a location with available network capacity. Recommended Conditions: Restore land capability to pre-existing use. Restore the groundcover of the site following construction or upgrading.
	 maintain the groundcover with appropriate perennial species and manage weeds within the groundcover. Minimise any soil erosion associated with the construction, upgrading or decommissioning of the development. Ensure that the development does not cause any water pollution, as defined
	 under Section 120 of the POEO Act. Ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in with the surrounding landscape, where reasonable and feasible. Ensure that noise associated with the construction, operation, upgrading and decommissioning of the project complies with the relevant noise criteria. Minimise dust generated by the development.
Visual Amenity	Assessment
 Impacts on visual amenity of surrounding landowners Impacts on landscape views 	 There are 20 residences within 1 km of the site, and a further 70 residences between 1 km and 2 km from the site. The project has been designed to minimise potential impacts on surrounding receivers and has been amended to reduce the number of solar panels and increase their setback from the nearest receivers. It is proposed that those residences subject to a moderate or high level of
 Glint and glare impacts 	visual impact, screen planting and on-site boundary planting would be implemented to assist in mitigating these visual impacts.

Issue	Consideration
	 Neighbour agreements have also been offered to all residences which would still have a low impact after implementation of vegetation screening. Photovoltaic panels will be used for the project and are designed to absorb rather than reflect sunlight. However, there are some project components that have the potential to create glare or reflection and as such some receivers and traffic will be impacted by glare and glint.
	• In addition, any glint or glare experienced by receivers would be temporary, depending on the time of day and the location of the receiver.
	Recommended Conditions:
	• 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 and safety purposes.
	 Minimise and mitigate the off-site visual impacts of the development, including the potential for any glare or reflection.
	• 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.
	• Implement the mitigation measures (vegetation screening and on-site boundary planting) to limit visual impacts to non-associated receivers within the project locality.
Traffic Impacts	Assessment
 Heavy vehicle movements through Jindera 	• Daily traffic movements during the 12 to 18 month construction phase of the project would be comprised of approximately 40 light vehicles, 13 buses, and up to 45 heavy vehicles.
 Safety concerns on local road network 	• In response to community concerns and Council's objection, the road haulage route was amended to prohibit the use of Glenellen Road.
Interactions with	The project would also include the following road upgrades:
school duses	 upgrade the Urana Road / Walla Walla Jindera Road intersection to a Channelised Right;
	 upgrade the Walla Walla Jindera Road / Lindner Road intersection to a Basic Auxiliary Right;
	 widen the Lindner Road approach to accommodate the passing of a 26m B- double and passenger car;
	 widen Lindner Road and Ortlipp Road to a formation width of 8m with 3.5m wide travel lanes; and
	 upgrade the intersection of Lindner Road / Ortlipp Road to accommodate 26m B-double movements.
	• The project would not involve any heavy vehicle movements through the Jindera Township during school zone times.

Issue	Consideration
	• There would be no reduction in the Level of Service on any roads along the haulage route, even if the peak construction period for the project overlaps with that of the Jindera Solar Farm.
	Recommended Conditions:
	• Prepare a Traffic Management Plan in consultation with TfNSW and Council.
	Prohibit heavy vehicle movements along Glenellen Road.
	 Prohibit heavy vehicle movements through the Jindera Township during school zone times of 8am to 9.30am and 2.30pm to 4pm;
	• Undertaking dilapidation surveys of Ortlipp and Lindner Roads and repair any damage caused by the project.
	• Limit heavy vehicle movements during school bus pick off and drop off times in consultation with Council and the relevant bus companies.
	• Encourage construction workers to travel to site via a bus service supplied by Trina.

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
Objects of the EP&A Act	The objects of most relevance to the Minister's decision on whether to approve the project are found in section 1.3(a), (b), (c), (e) and (f) of the EP&A Act.
	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:
is a permissible laris located in a logic	• is a permissible land use on the subject land;
	• is located in a logical location for efficient solar energy development;
	 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;

Aspect	Summary
Aspect	 Summary would contribute to a more diverse local industry, thereby supporting the local economy and community; would not fragment or alienate resource lands in the LGA; and is consistent with the goals of NSW's <i>Climate Change Policy Framework</i> and <i>Net Zero Plan Stage 1: 2020 - 2030</i> and would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions. 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. In addition, the Department considers that appropriately designed SSD solar facility development, in itself, is consistent with many of the principles of ESD. Following its consideration, the Department considers that the principles of ESD. Following its consideration, the Department considers that the principles of ESD. Consideration of environmental protection (Object 1.3(e)) is provided in Section 5 of this report. Following its consistent with the principles of ESD. Consideration of environmental protection (Object 1.3(e)) is provided in Section 5 of this report. Following its consideration, the Department considers that the project can be carried out in a manner that is consistent with the principles of ESD.
	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. Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is also provided in Section 5 of this report. Following its consideration, 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
State Significant	Under section 4.36 of the EP&A Act the project is considered a State
Development	Significant Development. 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 and Council objected during the exhibition period, noting this objection was subsequently withdrawn.

Environmental Planning Instruments	The Greater Hume LEP applies and is discussed in Sections 3.4 and 5.2 of this report, particularly regarding permissibility and land use zoning. Bushfire risk as per the <i>Greater Hume Shire Bushfire Prone Land Map</i> is considered in Section 5.5 of this report.
	As discussed in Section 5.2 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.
	Since lodgement of the EIS, all NSW State Environmental Planning Policies have been consolidated into 11 policies. The consolidated SEPPs commenced on 1 March 2022, with the exception of the Housing SEPP, which commenced on 26 November 2021.
	The SEPP consolidation does not change the legal effect of the repealed SEPPs, as the provisions of these SEPPs have simply been transferred into the new SEPPs. Further, any reference to an old SEPP is taken to mean the same as the new SEPP. For consistency, the Department has considered the development against the relevant provisions of the SEPPs that were in force when the EIS was lodged.
	The project is declared to be SSD under section 4.36 of the EP&A Act, as it triggers the criteria in clause 20 of schedule 1 of the SRD SEPP.
	Trina completed a preliminary risk screening in accordance with SEPP No. 33 – Hazardous and Offensive Development and confirmed the project was not categorised as potentially hazardous or potentially offensive development. The Department's consideration of this analysis is discussed in Section 5.5.
	The Department has also considered the remediated land provisions of <i>SEPP</i> <i>No.</i> 55 – <i>Remediation of Land.</i> 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.
	The Department has considered the provisions of the State Environmental <i>Planning Policy (Primary Production and Rural Development) 2019,</i> which aims to achieve a balance between rural needs, including agriculture, and development. Of relevance to the project, Primary Production and Rural Development SEPP also aims to reduce the risk of land use conflict and rural land fragmentation. The Department has considered these matters in Section 5.2 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.
	The Department has also reviewed the proposal against the Infrastructure SEPP. The Department notified Greater Hume Council, Transport for NSW and Transgrid about the project, in accordance with Infrastructure SEPP requirements to notify relevant public authorities and electricity supply authorities about developments that may affect public infrastructure or public land.
	The Department has consulted with public authorities and considered the matters raised in its assessment of the project (see Section 4). Council initially

Aspect	Summary
	objected to the project, but subsequently withdrew its objection confirming that its concerns have been addressed in the Submissions Report and Amendment Report prepared for the project (see Section 4.4). 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 so as to avoid land use conflicts with existing and approved uses of land (see Section 5.2).
	The Department has considered the <i>State Environmental Planning Policy</i> (<i>Koala Habitat Protection</i>) 2019 (Koala SEPP). Whilst the Greater Hume LGA is listed in Schedule 1 of the Koala SEPP, the provisions of the SEPP do not apply as the project is State significant development. Nonetheless, the biodiversity development assessment report (BDAR) prepared for the project has assessed the potential for impacts on Koala habitat, including targeted survey efforts that did not record this species.