

Deniliquin Battery Energy Storage System

State Significant Development Assessment Report (SSD-72258210)

November 2025





Acknowledgement of Country

The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past and present 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, Housing and Infrastructure's (the Department) assessment and evaluation of the State significant development (SSD) application for the Deniliquin Battery Energy Storage system, located at Riverina Highway, Deniliquin, lodged by Avenis Energy Pty Ltd (on behalf of AE BESS 4 Pty Ltd as Trustee for AE BESS 4 Unit Trust). 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

Avenis Energy Pty Ltd (on behalf of AE BESS 4 Pty Ltd as Trustee for AE BESS 4 Unit Trust) (Avenis) proposes to develop the Deniliquin Battery Energy Storage System (BESS) (the project), a 120 megawatt (MW) / 480 MW-hour (MWh) battery and associated grid connection infrastructure. The project is located adjacent to the Riverina Highway and includes a connection to **Transgrid's** 132 kilovolt (kV) Deniliquin substation, approximately 8 kilometres (km) south east of Deniliquin in the Edward River local government area.

The project is located on largely cleared rural land that is primarily used for electricity infrastructure, including the Deniliquin substation. The site is not currently used for agriculture due to its small size, proximity to the Deniliquin substation, and the presence of a former gravel borrow pit. It does not contain any mapped Biophysical Strategic Agricultural Land and land within the development footprint is categorised as Land and Soil Capability Class 3 (high capability land). As the development footprint is only 6.89 hectares (ha), the project would not significantly reduce the overall agricultural productivity of the region.

The area surrounding the site comprises electricity infrastructure, the Riverina Highway directly to the north, and agricultural land with interspersed rural dwellings. The Mulwala canal is approximately 30 metres (m) to the north beyond the Riverina Highway, and 100 m to the west of the site. Existing 66 kV and 132 kV transmission lines traverse the northern portion of the site, connecting to the Deniliquin substation. The project is immediately adjacent to the State road network, with direct access off the Riverina Highway.

The site is located in a sparsely populated rural area. There are eight non-associated receivers within 2 km of the project site, the closest of which (R1) is located 600 m north east of the development footprint.

The Department of Planning House and Infrastructure (the Department) exhibited the Environmental Impact Statement for the project between 31 January 2025 and 27 February 2025 and received 68 unique submissions, including 58 objections and one submission in support from the general public, 8 objections from special interest groups and one comment from a special interest group. Ten government agencies and Edward River Council (Council) provided advice on the project.

Of the 68 public submissions received, only one individual comment came from within 50 km of the site (8 km away). The remaining 66 objections and 1 submission in support were from more than 50 km from the site, with 27 submissions from interstate.

The Department consulted with Council and relevant government agencies on key issues and inspected the site. None of the agencies, Council or utility providers objected to the project, and they each recommended the implementation of appropriate mitigation and management measures.

Avenis provided an Amendment Report, Submissions Report and additional information addressing the matters raised by Council, agencies and public submissions.

The key assessment considerations are land use compatibility, energy transition, hazards, biodiversity and traffic. The Department has also undertaken a comprehensive assessment of the full range of other potential impacts and recommended a range of detailed conditions, developed in conjunction with agencies and Council, to ensure all potential impacts are effectively minimised, managed or offset.

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 enable the storage of energy for dispatch to the grid during periods of peak demand, which has the potential to increase grid stability and energy security.

The Department considers the site to be suitable for the project as it is located adjacent to the existing electricity network and State road network and would store and distribute energy to support reliable supply to NSW.

The project would provide flow-on benefits to the local community, including up to 90 construction jobs and contributions offered to Council of approximately \$1.44 million through a Voluntary Planning Agreement, for community benefits. There would be broader benefits to the State through an injection of \$206 million in capital investment into the NSW economy.

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

Overall, the Department's assessment concludes that the project would result in benefits to the State of NSW and considers the project is in the public interest. As such, the Department concludes that the project is approvable subject to conditions.

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1 Introduction

1.1 Project

- Avenis Energy Pty Ltd (on behalf of AE BESS 4 Pty Ltd as Trustee for AE BESS 4 Unit Trust)
 (Avenis), proposes to develop the Deniliquin battery energy storage system (BESS), a 120
 megawatt (MW) / 480 MW-hour (MWh) State significant development (SSD), approximately 8
 kilometres (km) south east of Deniliquin, in the Edward River local government area (LGA) (see
 Figure 1).
- 2. The project includes connection to Transgrid's existing 132 kilovolt (kV) Deniliquin substation (Deniliquin substation) through either a 160 metre (m) underground cable or by construction of a new 132 kV bay with a 90 m underground cable connection. Access to the site is proposed via an upgraded existing driveway off the Riverina Highway (a State road).
- 3. Construction of the project would take approximately 12 months. Construction works would be limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm. The project also allows for the upgrading and decommissioning of equipment over time. The expected operational life of the project is approximately 35 years with the possibility to extend through upgrading and replacement of equipment over time.
- 4. The key components of the project are summarised in **Table 1**, depicted in **Figure 2**, and described in detail in the Environmental Impact Statement (EIS) and supporting documentation (see **Appendix A**, **Appendix D** and **Appendix E**).

Table 1 | Main components of the project

Aspect Description Project summary • BESS comprising containerised lithium-iron phosphate batteries with a capacity of up to

- BESS comprising containerised lithium-iron phosphate batteries with a capacity of up to 120 MW / 480 MWh and associated inverters, switchgear, switch room, harmonic filters, transformers, a control room, and operations and maintenance building;
- connection to the Deniliquin substation through either:
 - o 160 m of 132 kV underground cabling; or
 - o construction of a new 132 kV bay and 90 m of 132 kV underground cabling;
- ancillary works within the Deniliquin substation including a spill oil building, secondary systems building, security fencing, and access roads;
- permanent site infrastructure including security fencing, water tank, pumpable sewage holding tank, carparking and internal access tracks;
- temporary site infrastructure including a construction compound and laydown area, a storage area, stormwater management, carparking and a water pipe from Mulwala canal to a standpipe and pump; and

Aspect	Description
	 two vehicular access points off Riverina Highway into the BESS area and into the Deniliquin substation.
Project location	21541 Riverina Highway, Deniliquin (part of Lot 2 DP536901, Lot 1 DP536901 and Riverina Highway).
Site Area	9.49 hectares (ha)
Development footprint	6.89 (ha)
Access route	 Heavy vehicles would travel on State roads from: Port Botany travelling along an approved B-double route including, M8 Motorway, M5 Motorway, Hume Motorway, Sturt Highway, Newell Highway, and Riverina Highway from the east; Port of Melbourne travelling along an approved B-double route including, Cobb Highway and Riverina Highway from the south and west; or Port of Melbourne travelling along Hume Freeway, Goulburn Valley Freeway, Newell Highway and Riverina Highway from the south and east (for 26 m B-doubles). High risk heavy vehicles requiring escort would travel from Glen Waverley in Victoria and from Port of Melbourne on State roads, travelling along Riverina Highway from the east and accessing the site directly off Riverina Highway.
Site access	 Vehicles would access the BESS area via an upgraded existing driveway off the Riverina Highway to the site, including widening of the road shoulder of the Riverina Highway. Access to the Deniliquin substation would be via the existing driveway off Riverina Highway.
Construction	 Construction period: approximately 12 months with a peak period of 6 months. Construction hours: Monday to Friday 7 am to 6pm, and Saturday 8 am to 1 pm.
Operation	 The expected operational life of the project is 35 years (noting infrastructure refurbishment would be required at approximately 20 years of operation). The BESS could operate 24 hours, seven days a week.
	rehabilitated to as close as possible to pre-development conditions.
	n 24 hours, 7 days per week.
Employment Estimated development cost	Up to 90 construction jobs and 2 operational jobs. \$206 million
Voluntary Planning Agreement (VPA)	Contribution of \$1.44 million to Edward River Council (Council) for community benefits.

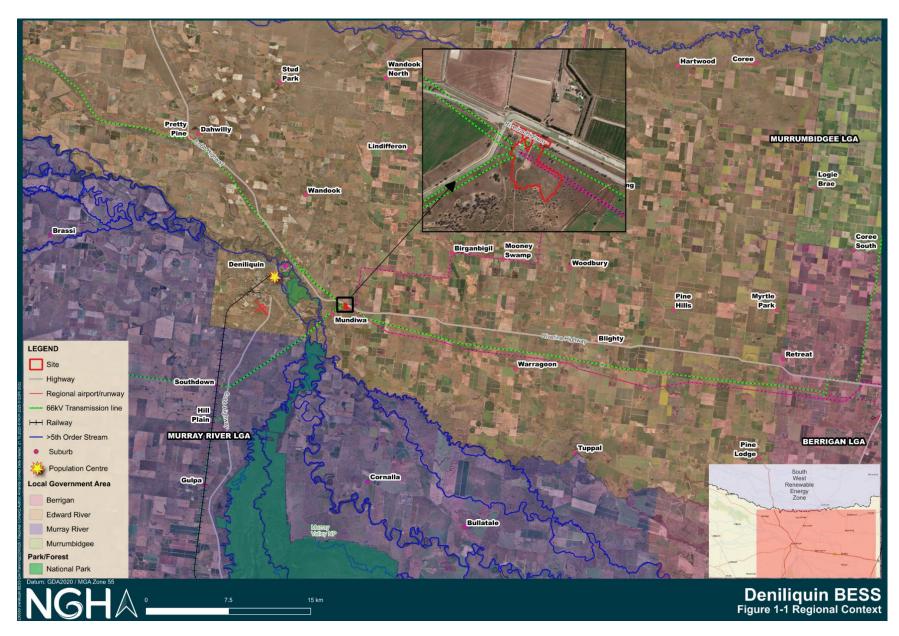


Figure 1 | Regional context map

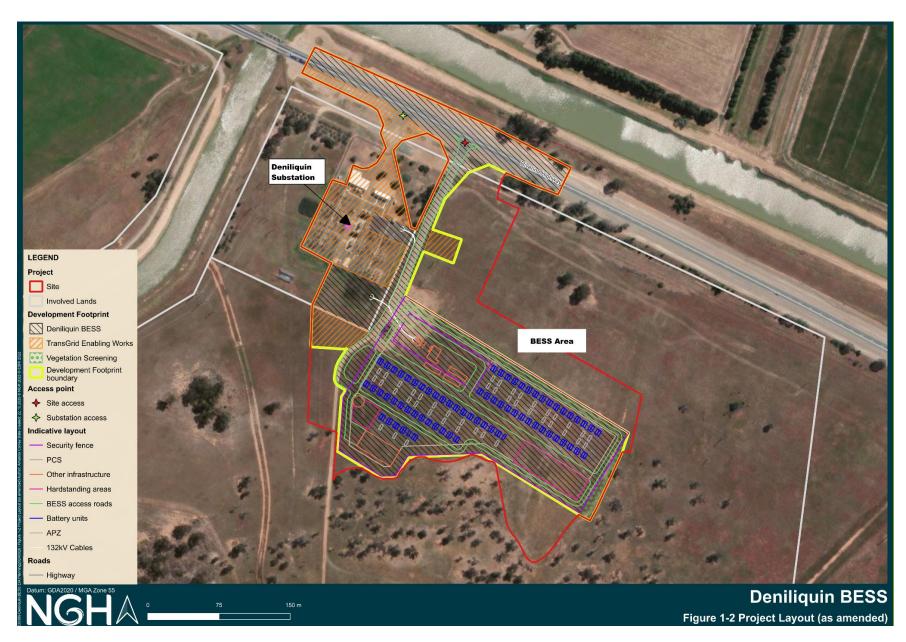


Figure 2 | Project layout

2 Strategic context

5. The project aligns with the current strategic direction of the NSW Government which supports investment in generation, transmission, storage and firming infrastructure in order to ensure secure and reliable energy in NSW. The dispatchable electricity from the project would assist with improving the stability and reliability of the electrical grid and reducing greenhouse gas emissions.

2.1 Site and surrounds

- 6. The site consists of two lots of mostly cleared, flat rural land, zoned RU1 Primary Production, with a small section zoned SP2 Infrastructure associated with the Riverina Highway road reserve. It is traversed by two transmission lines and includes the Deniliquin substation. The Mulwala canal lies approximately 30 m to the north of the site beyond the Riverina Highway, and 100 m to the west of the site. Scattered woodland surrounds the site to the south and south east. The area to the south west of the site is mapped as Category 2 Sensitive regulated land and is offset in perpetuity under a Property Vegetation Plan (PVP).
- 7. Murray Valley Regional Park and Murray Valley National Park are located 2.1 km west and 3 km south west respectively. The surrounding land use is dominated by a mix of grazing and irrigated agriculture with dispersed rural residential properties. Transmission lines enter the Deniliquin substation from the west, south west and east.
- 8. Access to the BESS area would be via an upgraded driveway off the Riverina Highway and access to the Deniliquin substation would be via the existing driveway off the Riverina Highway.
- 9. The site is not currently used for agriculture. A small area of the site has recently been used by Council as a laydown area for highway upgrade works. The south-eastern portion of the site (approximately 2.9 ha) was a gravel borrow pit and now forms a depression with limited pasture growth due to poor topsoil quality.
- 10. The site is mapped Land and Soil Capability (LSC) class 3 (high capability land) under the Land and Soil Capability Mapping for NSW (OEH, 2017). No Biophysical Strategic Agricultural Land (BSAL) has been identified within the site or surrounds.
- 11. The site is located within the Murray River catchment and the Edward River is located 2.3 km west. The site does not contain any natural watercourses. Constructed irrigation channels are located within the vicinity of the site as noted above.

12. There are eight non-associated receivers within 2 km of the site, the closest of which (R1) is located 600 m north east of the development footprint.

2.2 Other energy projects

- 13. There are three approved State significant renewable energy projects within 50 km of the site.
- 14. Tarleigh Park Solar Farm (16 km east) and Currawarra Solar Farm (21 km north east) were approved in 2018 but have not commenced construction. Finley Solar Farm (42 km east) has been operational since December 2019.
- 15. Since the lodgement of the Deniliquin BESS EIS, development applications have been lodged for Deniliquin East BESS (500 m north west), Finley BESS (42 km east) and South Coree BESS (43 km east). In addition, SEARs have been issued for Berrigan BESS (41 km east), however a development application has not been lodged for the project.
- 16. As per the Department's Cumulative Impact Assessment Guidelines for State Significant Projects 2021, the Department's assessment of cumulative impacts considers relevant future projects to be those that have been exhibited, are currently under assessment or are approved.

2.3 Energy context

- 17. As NSW transitions away from coal fired power, there is an increasing need for battery storage to firm renewable energy sources. The NSW Electrical Strategy (2019) notes that all coal fired power plants in NSW are scheduled for closure within the next fifteen years and that firmed renewables are the lowest cost option to replace aging coal power stations. The Australian Energy Market Operator's (AEMO) 2024 Integrated System Plan (ISP) states that battery storage is required to provide firming capacity and to support intra-day energy shifting.
- 18. With a capacity of 120 MW / 480 MWh, the BESS would increase grid stability and energy security. Accordingly, the project aligns with several national and State policies, including *Australia's Long Term Emissions Reduction Plan* and the *NSW Net Zero Plan Stage 1: 2020-2030* and associated *Implementation Update*. These policies identify the need to diversify the energy generation mix and reduce the carbon emissions intensity of the grid while providing energy security and reliability.

3 Statutory context

3.1 State Significant Development

- 19. 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 section 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.
- 20. Under section 4.5(a) of the EP&A Act and clause 1(b) of section 2.7 of the Planning Systems SEPP, the Independent Planning Commission is the consent authority for the development as the project has received more than 50 unique public submissions by way of objection.

3.2 Amended application

- 21. In accordance with section 37 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), a development application can be amended at any time before the application is determined. Avenis sought to amend its application, the details of which are summarised in **Section 4.4** of this report. Under the delegation from the consent authority (i.e. the Commission for this development), the Director, Energy Assessments can agree to amendments to an application.
- 22. The Department accepted the amended application for the following reasons:
 - the project amendments ultimately serve to support Transgrid enabling works within its substation and reduce the potential visual impacts of the project;
 - the amended application directly responds to the key issues received by the Department during the exhibition of the original application;
 - Avenis assessed the impacts of the amended project (see **Appendix E**); and
 - the Department made the additional information available online and sent it to the relevant agencies for comment.

3.3 Permissibility

23. The proposed BESS area, transmission cable route options and road works are located within land that is zoned RU1 – Primary Production and SP2 - Infrastructure under the *Edward River Local Environmental Plan 2013* (Edward River LEP).

24. The project is permissible because electricity generating works are permissible with consent on any land in a prescribed non-residential zone, including RU1 and SP2 zones, under section 2.36 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP). Consequently, the project is permissible with development consent.

3.4 Integrated and other approvals

- 25. 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 project.
- 26. 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*).
- 27. The Department has consulted with the relevant agencies responsible for the integrated and other approvals, considered their advice in its assessment, and included suitable conditions in the recommended conditions of consent to address these matters (see **Appendix G**).

3.5 Mandatory matters for consideration

3.5.1 Matters of consideration required by the EP&A Act

- 28. 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 all these matters in its assessment of the project, as well as Avenis' consideration of environmental planning instruments in its EIS (see Section 5). The Department has also considered relevant provisions of the environmental planning instruments in Appendix I.
- 29. In determining the application, the IPC should consider whether the project is consistent with the relevant objects of the EP&A Act (section 1.3) including the principles of ecologically sustainable development. Consideration of those factors is described in **Appendix I**.
- 30. As a result of the analyses in **Section 5**, the Department is satisfied that the development is consistent with the objectives of the EP&A Act and the principles of ecologically sustainable development (ESD).

3.5.2 Biodiversity development assessment report

31. Section 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act) requires all SSD applications to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless it is

- determined that the project is not likely to have any significant impact on biodiversity values (as identified in the BC Act and in the *Biodiversity Conservation Regulation 2017*).
- 32. The EIS included a BDAR (see **Appendix A**). The BDAR and the overall impact of the project on biodiversity values is assessed in **Section 5**.

4 Engagement

4.1 Department's engagement

Public Exhibition of the EIS

- 33. The Department publicly exhibited the EIS from 31 January 2025 until 27 February 2025, advertised the exhibition in the *Deniliquin Pastoral Times*, and notified neighbouring landowners to the site boundary. The Department consulted with Council and relevant government agencies throughout the assessment and inspected the site in August 2025 to assess the potential visual impacts of the project.
- 34. The Department also notified and sought comment from Transgrid and Transport for NSW in accordance with the Transport and Infrastructure SEPP, as discussed in **Section 4.5**.

4.2 Summary of public submissions

- 35. The Department received 68 unique submissions during the public exhibition period of the EIS (59 submissions from individuals and 9 submissions from special interest groups). There were 66 submissions objecting to the project, 1 submission supported the project and 1 provided comment.
- 36. Within 50 km of the site, only 1 submission (comment) was received from Murray Irrigation (8 km away from the site). The remaining 66 objections and 1 submission in support were from more than 50 km from the site, of which 27 submissions were interstate. Further detail is provided in **Table 2** below and a link to all submissions in full is provided in **Appendix C**.

Table 2 | Breakdown of public submissions

Submitter Distance	Objection	Support	Comment	Total
0-5 km	0	0	0	0
5-15 km	0	0	1	1
15-50 km	0	0	0	0
>50 km	39	1	0	40
Interstate	27	0	0	27
Total	66	1	1	68

- 37. The key issues raised in public submissions are summarised in **Figure 3**. The most common matters raised in submissions include the following:
 - hazards: fire safety, firefighting risk and contamination risk;
 - land use / location;
 - merits of renewable energy;
 - biodiversity; and
 - waste.

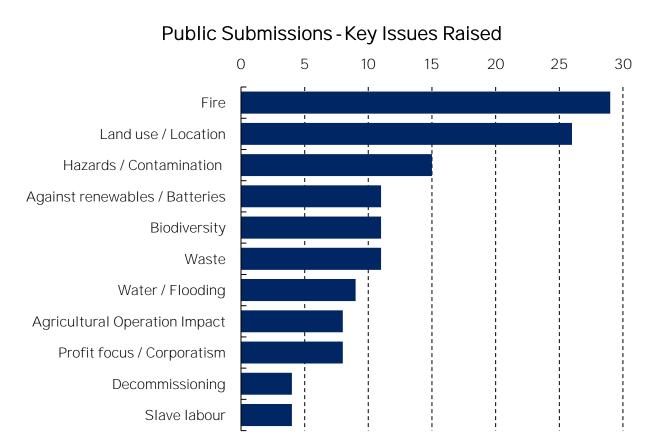


Figure 3 | Key issues raised in submissions

38. 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.

4.3 Response to submissions

39. Following the public exhibition period, the Department requested Avenis to respond to the issues raised in submissions and the advice received from government agencies. Avenis provided a Submissions Report to the Department on 1 August 2025 (see **Appendix D**).

40. The Department published the Submissions Report on the NSW Planning Portal and forwarded the Submissions Report to relevant government agencies and Council for comment.

4.4 Amendment Report

- 41. Following further consultation with Transgrid and TfNSW on the project, Avenis amended its application (as detailed in the Amendment Report in **Appendix E**). In summary, the amendments increased the development footprint to accommodate enabling works within the Deniliquin substation and changes to intersection upgrades at the Riverina Highway and the BESS area and Deniliquin substation accesses, and the inclusion of onsite vegetation screening to reduce potential visual amenity impacts.
- 42. A comparison between the original and amended project is detailed in **Table 3** below.

Table 3 | Amendment comparison

Aspect	EIS Project	Amended Project	Difference
Project site	7.77 ha	9.49 ha	+ 1.72 ha
Development footprint	4.75 ha	6.89 ha	+ 2.14 ha
BESS storage and capacity	120 MW / 480 MWh	120 MW / 480 MWh	No change
Biodiversity impacts			
Native vegetation:	PCT 20 - 0.56 ha	PCT 20 - 0.64 ha	+ 0.08 ha
Ecosystem credits:	13	19	+6
Species:	Southern Myotis - 0 ha	Southern Myotis - 0.32 ha	+ 0.32 ha
Species credits:	0	2	+2
Workforce			
Construction:	90 personnel	90 personnel	No change
Operation:	2 FTE	2 FTE	
Construction	Approximately 12 months	s Approximately 12 months	No change
Operations	35 years	35 years	No change

4.5 Summary of advice received from government agencies

- 43. During exhibition of the EIS, the Department received advice from 10 government agencies. A summary of the advice is provided in **Table 4**. A link to the full copies of the advice is provided in **Appendix C**.
- 44. Further advice was provided from 10 government agencies on the Submissions Report and Amendment Report. A summary of the agency advice is provided in **Table 4**. A link to the full copies of the advice is provided in **Appendix C**.

Table 4 | Summary of agency advice

Agency

Advice Summary

Fire and Rescue • (FRNSW)

- Following its review of the EIS, recommended preparation of a Fire Safety Study, Emergency Plan, Emergency Services Information Pack and Induction Package.
- Following its review of the Submissions Report and Amendment Report, recommended the responses provided in Section 5.6 of the Submissions Report to be implemented.
- FRNSW has reviewed and endorsed the recommended condition set.

Rural Fire Service (RFS)

- Following its review of the EIS, Submissions Report and Amendment Report, RFS
 raised no objection to the project subject to recommendations 4.1 to 4.7 (inclusive)
 from the Bushfire Assessment Report and mitigation measures BF1 to BF8 (inclusive)
 from Section 6.5.5 of the EIS being implemented, which Avenis has committed to.
- RFS has reviewed and endorsed the recommended condition set.

NSW DCCEEW -Heritage NSW (Heritage NSW)

- Following its review of the EIS, requested:
 - further information in relation to the archaeological survey of the stand of trees to the south of the site to ensure any changes in surface water and flooding does not adversely impact any possible Aboriginal cultural heritage in the area;
 - detailed analysis of the bore hole data used as evidence to demonstrate the lack of subsurface potential; and
 - mapping of the soil landscapes and geology of the site and its surrounds as per Requirement 2 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010).
- Following its review of the Submissions Report, Amendment Report and Addendum Aboriginal Heritage Assessment, confirmed that all matters were resolved.

NSW DCCEEW - * Conservation Programs, Heritage and Regulation Group (CPHR)

- Following its review of the EIS, requested:
 - an updated Biodiversity Assessment Report (BDAR) that provides consistency with spatial data;
 - identification of specific measures to protect the adjoining property vegetation plan offset area and the retained areas for plant community types (PCTs);
 - identification and assessment of all impacts to native vegetation;
 - further information regarding flood risk management to demonstrate how emergency management matters have been discussed with Edward River Council and NSW State Emergency Services (SES); and

Agency

Advice Summary

- updates to the hydraulic model with detailed design to adequately inform the assessment of flood risk.
- Following its review of the Submissions Report, Amendment Report and revised BDAR, confirmed that all matters relating to flood risk were resolved. CPHR requested an assessment of the clearing associated with upgrading the existing driveway off the Riverina Highway and updating the Biodiversity Management Plan to specify the actions associated with the protection and monitoring of PCT 20 and the PVP offset area.
- Following its review of the additional information provided by Avenis to address the concerns raised in the Submissions Report and Amendment Report, confirmed that all matters were resolved and provided recommended conditions.

Transport for NSW (TfNSW)

- Following its review of the EIS, requested:
 - an updated Traffic Impact Assessment (TIA), including further assessment on impacts on to the State road network and identification of worst-case scenario for background traffic and turning traffic volumes;
 - further information on turn warrant assessments, strategic concept designs, flood assessments, swept paths, emergency access points, and over size over mass (OSOM) vehicle route assessment.
- Following its review of the Submission Reports, Amendment Report and revised TIA, requested additional information to demonstrate the project has mitigated the traffic safety, efficiency and risks to TfNSW assets on the State road network.
- The TIA was subsequently revised (dated 15 September 2025) to include swept paths
 for the updated OSOM route and strategic concept designs for the works proposed
 at the Riverina Highway and BESS area / Deniliquin substation access intersections.
 TfNSW confirmed that all matters were resolved and provided recommended
 conditions.

NSW State Emergency Service (SES)

- Following its review of the EIS, recommended:
 - consideration of flooding issues is undertaken in accordance with the requirements of NSW Government's Flood Prone Land Policy as set out in the Flood Risk Management Manual 2023 (the Manual) and supporting guidelines, including the Support for Emergency Management Planning;
 - the risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and consider the impacts of climate change;
 - implementing site design and stormwater management that reduces the impact of flooding and minimises any risk to the community; and
 - incorporating flooding into the site emergency plan.
- Following its review of the Submissions Report and Amendment Report, advised the comments provided during EIS had not been addressed.
- Following its review of the additional information provided by Avenis to address the
 concerns raised in the Submissions Report and Amendment Report, advised there
 were no further comments and provided recommended conditions which the
 Department has incorporated.

Department of Primary Industries and Regional Development – NSW Resources (DPIRD – NSW 45. Resources), NSW DCCEEW - Water Group (Water Group), Department of Primary Industries and Regional Development - Agricultural Land Use (DPIRD - Agriculture), Crown Lands and Transgrid did not raise any concerns with the project during exhibition of the EIS, or on the Submissions Report and Amendment Report.

Summary of Council advice 4.6

A summary of the issues raised by Council is provided in **Table 5** below and a link to all 46. submissions in full is provided in Appendix C.

Table 5 | Summary of issues raised by council

Council	Submission summary	
	 Following its review of the FIS requested: 	

Edward River Council

- Following its review of the EIS, requested:
 - adequate mitigation of potential cumulative visual impacts to minimise potential impacts on the riverine landscape and adjoining landholders;
 - review of the Bushfire Emergency Management and Operation Plan;
 - further consideration of the cumulative impacts to workforce accommodation in Deniliquin and cumulative impacts to community services; and
 - that any impacted roads should be repaired and returned to their original condition following completion of construction and commissioning.
- Following its review of the Submissions Report and Amendment Report, requested:
 - further consideration and mitigation of the visual impacts of the project;
 - an accommodation and employment strategy to ensure adequate arrangements have been appropriately considered and can be implemented;
 - consideration of cumulative impacts on community services including accommodation, health and medical services, to support the influx of workforce.
- Following its review of the additional information provided by Avenis to address the concerns raised in the Submissions Report and Amendment Report, advised there were no further comments and provided advice on recommended mitigation measures.
- The Department has included specific conditions relating to consultation with Council during the preparation of the Waste Management Plan, and Accommodation and Employment Strategy.
- Council has reviewed and expressed support for the recommended conditions of consent.

5 Assessment

- 47. The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the key issues, namely energy transition (Section 5.1), land use compatibility (Section 5.2), hazards (Section 5.3) and biodiversity (Section 5.4).
- 48. Other issues have also been considered. These issues are considered relatively minor and assessed in **Section 5.5**.

5.1 Energy transition

- 49. The project aligns with a range of national and State policies (see **Section 2**), 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.
- 50. The project would support the State's continued transition away from traditional power generation derived from fossil fuels, which is largely dispatchable, to renewable energy generation such as wind and solar, which is inherently variable.
- 51. The AEMO's 2024 Integrated System Plan (ISP) forecasts that there will be a demand for 36 gigawatts (GW) / 522 gigawatt-hours (GWh) of energy storage capacity in the National Electricity Market by 2034-35, and 56 GW / 660 GWh by 2049-50. The ISP highlights the need for different forms of storage to support this growth, by providing storage of varied depths and technologies to time-shift electricity supply and smooth out peaks and troughs in renewable generation.
- 52. In 2024, NSW derived approximately 37% of its energy from renewable sources. The rest was derived from fossil fuels, including 60% from coal and 3% from gas. NSW is one of the nation's leaders in large-scale renewables, with 47 major operational projects and 90 under construction or planned to be under construction.
- 53. Battery storage, such as this one, provide 'firming capacity' by contributing to dispatchable energy availability during peak energy demands or when renewable production is low.
- 54. Importantly, the project would also contribute to energy security and reliability by providing frequency control ancillary services, meaning the project would contribute to energy supply.

5.2 Land Use Compatibility

55. Twenty-six public submissions raised concern regarding the location of the project and land use impacts.

- 56. The site is located on land zoned RU1 (Primary Production) under the Edward River LEP. The site is currently cleared and not used for active agriculture, due its small size, proximity to the Deniliquin substation and the presence of a former gravel borrow pit (covering about 28% of the land) constraining its use. The borrow pit has formed a depression with poor soils and weedy vegetation, limiting pasture growth and would be rehabilitated as part of the project.
- 57. The site is located adjacent to Deniliquin substation and has direct access to the State road network via Riverina Highway, directly to the north. The area surrounding the site comprises two transmission lines, electricity infrastructure, grazing and irrigated agriculture, with dispersed rural residential properties.
- 58. Land within the development footprint is mapped as Class 3 (high capability land) under the Land and Soil Capability Mapping for NSW (OEH, 2017) however, as noted above, the site is not currently used for agriculture due to existing site constraints. The site does not contain Biophysical Strategic Agricultural Land.
- 59. The project would result in a negligible loss of agricultural land, noting the project's development footprint accounts for a tiny fraction (<0.001%) of Class 3 agricultural land in the Edward River Council LGA. Notwithstanding, the Department has recommended a condition requiring Avenis to restore land capability to its pre-existing productive capacity following decommissioning.
- 60. The Department consulted with both DPIRD Agriculture and Council throughout its assessment, who raised no specific concerns regarding the loss of 6.89 ha of agricultural land and any impact on agricultural production.
- 61. Avenis has committed to several measures to minimise potential impacts on surrounding land uses. These include preparing a Revegetation and Rehabilitation Plan in consultation with DPIRD Agriculture prior to decommissioning the site, restoration of the former borrow pit such that it would be suitable for agricultural use, and measures to reduce amenity impacts.
- 62. The Department considers the project would not result in significant impacts on the agricultural resources within the region and, with the restoration of the borrow pit, the long-term agricultural productivity and land capability of the site would be maintained or enhanced. The project would not detract from the character of the area, noting a substantive amount of electricity infrastructure is present in the area immediately surrounding and traversing the site. The project aligns with the objectives of the *Riverina Murray Regional Plan 2041*, which identifies the need to support well located renewable energy industries and the transition away from fossil fuels.
- 63. The Department considers the project is suitable within the land use context of the locality and, subject to the implementation of Avenis proposed measures to manage amenity impacts

and the Department's recommended conditions of consent, would not result in any land use conflicts.

5.3 Hazards

64. About half of the unique public submissions referred to hazards, including fire risk (29 submissions) and risk of hazards / contamination (15 submissions).

5.3.1 Bushfire Risk

- 65. The site is located on land designated bushfire-prone by Council's Bushfire Prone Land Map.
- 66. Avenis prepared a Bushfire Assessment Report to assess the bushfire threat to and from the project and identify protection measures to address those risks.
- 67. The site is mapped as containing areas of Category 3 vegetation, whilst the adjacent land to the west of the site comprises Category 1 and Category 3 vegetation identified as bushfire-prone land by Council's Bushfire Prone Land Map.
- 68. To actively manage risk, Avenis would implement a range of management measures including (but not limited to):
 - establishing and maintaining a minimum 11 m asset protection zone (APZ) between remnant or planted vegetation and the BESS and project infrastructure;
 - complying with the requirements of RFS's Planning for Bushfire Protection 2019;
 - provision of a non-combustible water tank with a capacity of approximately 200,000 L for firefighting purposes and other non-potable water uses; and
 - providing road access to enable unobstructed passage by firefighting vehicles.
- 69. The Department consulted with RFS throughout the assessment and in preparing conditions of consent. RFS advised they had no objection to the project subject to recommendations from the Bushfire Assessment Report and mitigation measures from the EIS being implemented. Avenis has committed to implementing the measures listed above and preparation of a Fire Safety Study, Emergency Response Plan and an Emergency Services Information Package prior to operation of the BESS to reduce the spread of bushfire and facilitate firefighting.
- 70. The recommended conditions of consent include the preparation of a Fire Safety Study in accordance with the requirements of the Hazardous Industry Planning Advisory Paper (HIPAP) No.2 and FRNSW Fire Safety Guideline Technical Information Large scale external lithium-ion battery energy storage systems Fire safety study considerations. The study must be confirmed by FRNSW as meeting the relevant requirements and approved by the Planning Secretary.

- Preparation and implementation of the Fire Safety Study would ensure that proposed fire prevention, detection, protection and firefighting measures are appropriate for the project. RFS and FRNSW were consulted and satisfied with the recommended conditions of consent.
- 71. The Department considers the fire and hazard risks for the project can be managed, subject to the mitigation measures and recommended conditions, including preparation of a Fire Safety Study and Emergency Plan, consistent with the recommendations of RFS and FRNSW.

5.3.2 Hazards Analysis

- 72. Avenis' Preliminary Hazard Analysis (PHA) considered the risk associated with the transport and storage of hazardous materials, as well as the operation of the BESS itself, in accordance with the relevant Hazardous Industry Planning Advisory Papers and the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP).
- 73. The Department is satisfied that the dangerous goods stored on-site would be unlikely to exceed the threshold limits in the Department's Hazardous and Offensive Development Application Guidelines 'Applying SEPP 33' and the project is not 'potentially hazardous'.
- 74. The PHA considered risks associated with fires or explosions associated with lithium-iron phosphate battery fault and thermal runaway¹, toxic gas dispersion and electromagnetic field.
- 75. All potential risks were concluded to be acceptable with no significant off-site impacts, subject to the implementation of recommendations, including:
 - adequate separation distances within the BESS (between components) and offsite sensitive receivers;
 - relevant infrastructure and engineering controls installed and maintained (such as fire protection systems, fire-fighting equipment and vents); and
 - unauthorised access resulting in asset damage would be mitigated by a security fence and security lighting.
- 76. The PHA identified that the area allocated for the BESS is sufficient for the batteries and other associated equipment, allowing for appropriate separation distances to minimise risk.
- 77. The Department consulted with FRNSW throughout the assessment and in preparing the recommended conditions of consent. Subject to conditions requiring Avenis to prepare a Fire

¹ Thermal runaway is a process in which rising heat within a lithium-ion battery triggers further temperature increases, creating a self-sustaining and uncontrollable reaction. The event may heat adjacent battery cells, resulting in escalation of the event.

- Safety Study and Emergency Plan that meets its requirements, FRNSW advised it had no further comments on the project and supported the recommended conditions.
- 78. The Department considers that the hazard risk for the project can be managed, subject to the recommendations of the PHA and the Department's recommended conditions of consent, including preparation of a Fire Safety Study prior to construction of the BESS and preparation of an Emergency Plan.

5.3.3 Contamination

- 79. The BESS area comprises land that has historically been used for grazing and a borrow pit.
- 80. Avenis conducted a Preliminary Site Investigation (PSI) which included a review of historical land uses, review of public records and historical imagery, a detailed site inspection and soil sample collection and analysis.
- 81. The PSI concluded that there is no evidence to suggest that historical land uses have caused contamination on the site as previous land uses comprised agricultural activities, presenting a low contamination risk.
- 82. All soil contaminant levels were below levels considered to present risks to human health for a commercial / industrial land use and did not require further investigation.
- 83. Overall, Avenis found that the risk of contamination at the site is unlikely and no further assessment or remediation is required. Notwithstanding, Avenis would manage any residual risks as a part of an Unexpected Finds Protocol to guide responses to finds of contaminated material during construction.

5.3.4 Recommended Conditions

- 84. To manage potential hazards and risks associated with the project, the Department has recommended conditions of consent requiring Avenis to:
 - ensure the BESS does not exceed the proposed delivery capacity and storage capacity
 of 120 MW and 480 MWh across the project site and must be installed in an
 arrangement consistent with the EIS;
 - prepare a Fire Safety Study that meets the requirements of FRNSW and is approved by the Planning Secretary;
 - prepare an Emergency Plan (including Emergency Services Information Package) for the project;
 - ensure the project complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2019;

- ensure all chemicals, fuels and oils are stored in accordance with Australian Standards and EPA requirements; and
- prepare and implement an Unexpected Finds Procedure for contamination throughout construction.

5.4 Biodiversity

- 85. Eleven submissions raised concerns about potential biodiversity impacts of the project.
- 86. A Biodiversity Development Assessment Report (BDAR) was prepared for the project under the BC Act and the *Biodiversity* Assessment Method (BAM). A revised BDAR was prepared in response to issues raised by CPHR and included with the Amendment Report.
- 87. The 6.89 ha development footprint is comprised of native vegetation (5.06 ha) and exotic vegetation (0.13 ha).
- 88. Native vegetation on the site comprises:
 - Plant Community Type (PCT) 20: Buloke Moonah Black Box open woodland on sandy rises of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion). PCT 20 on site comprises:
 - moderate condition woodland, which is associated with Threatened Ecological Community (TEC) Allocasuarina luehmannii Woodland in the Riverina and Murray-Darling Depressions Bioregions and listed as an endangered ecological community (EEC) under the BC Act and an EEC under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). The woodland vegetation onsite is commensurate of the associated EEC listed under the BC Act and meets the condition threshold for the associated EEC under the EPBC Act.
 - derived native grassland (DNG), which is commensurate of the associated EEC listed under the BC Act, however, does not meet the condition threshold for the associated EEC under the EPBC Act.
 - PCT 237: Riverine Western Grey Box grassy woodland of the semi-arid (warm) climate zone, which is associated with TEC Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions. This TEC is listed as an EEC under the BC Act and an EEC under the EPBC Act. The vegetation onsite is commensurate of the associated EEC listed under the BC Act but does not meet the condition threshold for the associated EEC under the EPBC Act. PCT 237 within the site comprises DNG and high condition woodland. The project adjoins an offset area associated with Property Vegetation Plan (PVP) AF365129E.

5.4.1 Avoidance and mitigation

- 89. Avenis has designed the project to avoid impacts on native vegetation, and have excluded woodland areas and all mapped Category 2 Sensitive Land under PVP AF365129E from the site.
- 90. The Department notes the BDAR included a 20 m buffer on the area mapped as PCT 20 woodland, as requested by CPHR, to ensure potential impacts on this serious and irreversible impact (SAII) entity were assessed and offset accordingly.
- 91. Vegetation screening is proposed on the eastern side of the project site, which includes planting within PCT 20. A detailed assessment confirmed that this would not alter the condition, or floristic structure of the SAII community.

5.4.2 Native vegetation

- 92. The project would affect 5.06 ha of native vegetation over two ecological communities, with varying conservation statuses and conditions:
 - PCT 20 (4.74 ha, comprising: 4.1 ha DNG and 0.64 ha moderate condition woodland);
 and
 - PCT 237 (0.32 ha DNG).
- 93. Trimming of tree branches within and alongside the area of PCT 237 woodland may be required to ensure safe line of sight for high-risk heavy vehicles requiring escort movements. Avenis confirmed that no hollow bearing limbs would be removed and measures regarding any tree trimming would form part of the Biodiversity Management Plan, which CPHR agreed with.
- 94. No scattered trees are present within the development footprint. One stag hollow bearing tree would be removed as part of the project.
- 95. Avenis has committed to conducting pre-clearance surveys prior to clearing activities to ensure no fauna species are impacted during removal.

5.4.3 Threatened flora and fauna species

- 96. Avenis conducted targeted surveys for six threatened flora species and six fauna species. No threatened flora or fauna species were identified during the targeted surveys. Surveys of stick nests within the road reserve of the Riverina Highway were carried out and no threatened species were observed using the nests, which are outside of the development footprint.
- 97. Threatened fauna species Southern Myotis (*Myotis macropus*) was assumed present and no targeted surveys were completed. Although no records of Southern Myotis occur within 30 km

of the project, suitable foraging habitat occurs within 200 m of the project in the form of woody vegetation adjacent to Mulwala Canal. Only PCT 237 forms part of the species polygon for Southern Myotis, with 0.32 ha of PCT 237 within the development footprint, generating 2 species credits for Southern Myotis.

5.4.4 Serious and Irreversible Impacts and EPBC listed entities

- 98. The project would impact the Buloke Woodlands TEC (equivalent of PCT 20), listed as at risk of serious and irreversible impacts (SAII) under Principles 1 and 2 of the *Biodiversity Conservation Regulation 2017*. Clearing would not involve woodland trees, with direct impacts limited to 4.10 ha of low-condition DNG, 0.59 ha within the 20 m woodland buffer, and 0.05 ha of woodland to be planted with native species consistent with PCT 20 for screening.
- 99. Avenis estimates these impacts represent 0.29% of the total 1,300 ha extent and 41.31% of the site's PCT 20 DNG, without increasing fragmentation or separation of patches. Mitigation measures include marking 'no-go' woodland areas, monitoring for indirect impacts within the PVP AF365129E, and planting within PCT 20 areas to be consistent with the Buloke Woodlands TEC.
- 100. The Department and CPHR consider the impacts can be adequately mitigated and offset, and would not result in serious or irreversible impacts. Avenis' assessment concluded the project was not likely to result in significant impacts to species or communities listed under the EPBC Act and as such referral to the Commonwealth Minister is not necessary.

5.4.5 Biodiversity offsets

- 101. Avenis has committed to retiring the offset as calculated under the BAM and in accordance with the *Biodiversity Offsets Scheme*, consisting of the following;
 - retirement of 19 ecosystem credits for PCT 20; and
 - retirement of 2 species credits for the Southern Myotis.

5.4.6 Recommended conditions

- 102. The Department has recommended Avenis retire the ecosystem and species credits outlined in Section 5.4.5, in accordance with the NSW *Biodiversity Offsets Scheme* prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset.
- 103. The Department has recommended conditions requiring Avenis to prepare and implement a Biodiversity Management Plan, in consultation with CPHR, to ensure the remaining biodiversity

values onsite are appropriately managed and maintained, which would include a description of measures undertaken to:

- protect vegetation and fauna habitat outside the development footprint;
- minimise clearing and avoid unnecessary disturbance of vegetation that is associated with the construction and operation of the development;
- manage and enhance the remnant vegetation and fauna habitat on site;
- minimise the impacts to fauna on site and implement fauna management protocols;
- manage the planting of native vegetation within existing areas of PCT 20 to minimise disturbance to existing vegetation;
- a program to monitor and report on the effectiveness of mitigation measures; and
- control weeds, feral pests and pathogens.
- 104. With these measures, the Department is satisfied that all issues raised during the assessment by CPHR have been adequately addressed. Accordingly, the Department considers that the project is unlikely to significantly impact the biodiversity values of the locality.
- 105. Overall, the Department considers the project appropriately minimises impacts to biodiversity values through project design and appropriate mitigation measures, and, subject to the implementation of recommended conditions, would not result in a significant impact on biodiversity values, including no serious or irreversible impacts.

5.5 Other issues

The Department's consideration of other issues is summarised in Table 6.

Table 6 | Assessment of other issues

Issue	Recommended Conditions
Traffic	
 One public submission raised concern about traffic. Project related vehicles would access the BESS site via the following routes: Light vehicles, from either:	 Daily limits on movements of heavy vehicles and high-risk heavy vehicles requiring escort, including maximum length and record keeping. All heavy vehicles and high-risk heavy vehicles requiring escort must travel to and from the site using approved access routes. Prepare a Traffic Management Plan in consultation with Council and TfNSW.

Recommended Conditions

• The project would generate approximately:

Issue

- 40 light vehicle movements per day during peak construction;
- 43 heavy vehicle movements per day during peak construction; and
- 3 high-risk HVRE during construction, upgrading or decommissioning.
- During peak hours of construction (6 am to 7 am and 5 pm to 6 pm) under a cumulative construction scenario including the concurrent construction of Tarleigh Park Solar Farm, the Riverina Highway would accommodate approximately 123 to 201 vehicles per hour, which is within the capacity of the road network. Riverina Highway is expected to continue to operate with a good level of service (LOS A) during peak hours of construction.
- Operational traffic would be negligible and limited to minimal light vehicles and occasional heavy vehicle movements (up to 8 vehicle movements per day) for maintenance activities.
- On-site car parking would accommodate all light and heavy vehicles during construction within the
 construction compound, and as such no impacts to existing commercial or residential property accesses are
 anticipated.
- Avenis' assessment considered potential cumulative traffic impacts associated with Riverina Highway, noting
 four projects (Deniliquin East BESS, Tarleigh Park Solar Farm, Finley BESS and Finley Solar Farm) have the
 potential to use Riverina Highway at the BESS area access location. Minimal cumulative traffic impacts along
 Riverina Highway are anticipated and the road network is expected to continue to operate with a good level of
 service.
- Turn warrant assessments identified both the Deniliquin substation access and BESS site access would
 require a basic right turn and basic left turn treatment to meet the requirements of the Austroads Guide. The
 upgrades would be constructed in accordance with the strategic design provided with the Amendment
 Report.
- Subject to the proposed road upgrades and recommended conditions prepared in consultation with TfNSW and Council, the Department considers that the project would not result in significant impacts to the road network capacity, efficiency or safety.
- To manage potential traffic impacts associated with the Project, the Department has recommended a condition requiring all relevant approvals to be obtained and implemented prior to the use of high-risk HVRE on the public road network (including approvals for any additional road upgrades required) in addition to the requirement for the proposed road upgrades to be carried out prior to commencement of construction and implementation of a Traffic Management Plan.

Noise

- Two public submissions raised concerns about potential noise impacts.
- The six non-associated residential receivers located closest to the BESS were modelled, the closest of which (R1) is located approximately 600 m north east of the development footprint.

Construction noise

- Construction noise sources would originate from the use of plant and equipment at the site.
- Noise generated by the construction of the BESS during standard hours is predicted to be below the 'noise affected' criterion of 45 dB(A) under the EPA's Interim Construction Noise Guideline (ICNG) at all surrounding residences.
- The Department notes construction noise was assessed under a worst-case scenario, where all plant and
 equipment are operating for each corresponding construction stage. In practice, construction activities
 would take place at variable distances from sensitive receivers.
- Avenis proposes to carry out works on the site outside of standard construction hours from 1 pm to 3pm on Saturdays that would not be audible at non-associated residences. These works would be managed through the preparation and implementation of a Noise Management Plan (NMP) that would detail measures such as on-site controls and selection of plant and equipment to minimise noise generation.
- The Department has considered Avenis' request for extended construction hours and has included conditions requiring further verification and justification of out of hours works on a case-by-case or activity specific basis, for approval by the Planning Secretary, for activities that are more than 5 dB(A) above the rating background level at receivers. An exemption has been included for works that would be inaudible at residential receivers.
- Avenis considered the cumulative noise impacts of surrounding developments. Noting that since the
 lodgement of Deniliquin BESS EIS, a development application has been lodged for Deniliquin East BESS
 (500 m north west) and all other proposed developments for consideration in accordance with the
 Department's Cumulative Impact Assessment Guidelines are in excess of 30 km, no cumulative noise impacts
 are anticipated.
- Road traffic noise during construction and operation would comply with the relevant criteria in the EPA's Road Noise Policy (2011).
- Noting construction would be limited to daytime hours, and subject to the recommended conditions
 including the ICNG best practice requirements to minimise construction noise, the Department considers
 that construction noise impacts at surrounding receivers would be acceptable.

- 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 nonassociated residence.
- Restrict construction hours to Monday to Friday, 7 am – 6 pm and Saturday, 8 am – 1 pm.
- Audible works outside of standard construction hours would be subject to further justification, verification and prior written approval of the Planning Secretary.

Operational noise

- Operational noise modelling was conducted under standard, noise-enhancing meteorological conditions.
 Predicted operational noise levels would comply with the residential and industrial assessment criteria in accordance with the NSW Noise Policy for Industry (EPA, 2017) (NPfI) during the daytime, evening and night-time periods at all non-associated receivers.
- Noting compliance with the NPfI, the Department considers that operational noise impacts would be acceptable.

Vibration

 No vibration impacts are predicted at any receivers during construction or operation based on separation distances exceeding 580 m.

Visual

- The site and surrounding landscape is predominantly flat, with scattered vegetation and cropping pastures. Electrical transmission lines are a dominant feature of the immediate surrounds.
- There are eight non-associated residences within 2 km of the site, the closest of which (R1) is located approximately 600 m north east of the development footprint.
- Avenis assessed visual impacts from nine representative viewpoints to the north, south, east and west of the
 site. Viewpoints were representative of potential views from both private residences and the public domain.
 Impacts to views from surrounding public roads were determined to be low to very low on account of
 separation distances, existing vegetation and set-back distances. Views from surrounding roads would only
 be fleeting to motorists in transit.
- Preliminary visual assessment of potential views from the surrounding eight non-associated residences
 concluded low to very low visual impacts due to intervening vegetation and topography. Notwithstanding,
 Avenis proposes to plant a vegetation screen around the eastern side of the BESS to minimise potential views
 for non-associated residences on Aratula South Road and traffic travelling from the east along Riverina
 Highway. With the proposed vegetation screening, views from all surrounding public roads would be
 negligible.
- During operation, lighting would be mounted outside the operations and maintenance building in accordance with AS4282 Control of the obtrusive effects of outdoor lighting and would not noticeably alter the existing light levels in the area.

- Implement proposed landscape screening.
- Minimise off-site visual and lighting impacts of the development.

Avenis considered cumulative visual impacts on the broader landscape character due to the proposed
Deniliquin East BESS, which would be located approximately 500 m north west of the site. The Deniliquin
BESS, Deniliquin East BESS and Deniliquin substation would be viewed consecutively from some locations on
Riverina Highway. The cumulative viewshed would be unlikely to alter the visual character of the landscape as
similar infrastructure exists in close proximity (specifically the proposed Deniliquin East BESS and Deniliquin
substation) and it is anticipated there would be no cumulative visual impacts.

• The Department considers the visual impacts are acceptable and the project would not fundamentally change the broader landscape characteristics of the area or result in significant visual impacts on the surrounding non-associated receivers.

Heritage

Aboriginal Cultural Heritage

- Avenis prepared an Aboriginal Cultural Heritage Assessment (ACHAR) that comprised background research
 and site surveys in consultation with Registered Aboriginal Parties (RAPs). The ACHAR identified no
 Aboriginal cultural heritage items on site, and no areas of archaeological sensitivity.
- 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, as committed to by Avenis in their EIS.
- Noting the above, the Department and Heritage NSW consider the project would not significantly impact the Aboriginal heritage values of the locality.

<u>Historic Heritage</u>

• The site is not subject to any local, State or Commonwealth historic heritage listings and Council did not raise concerns regarding historic heritage.

- Ensure the development does not cause any direct or indirect impacts on any items located outside the approved development footprint.
- Prepare and implement a Chance Finds Protocol development in consultation with Aboriginal Stakeholders, and Heritage NSW.
- Cease works and notify NSW
 Police and Heritage NSW if
 human remains are identified over
 the life of the project.

Water

Surface water

- While the site does not contain any natural water courses, the surrounding area includes Mulwala Canal which
 is managed by Murray Irrigation and is located 30 m to the north and 100 m to the west of the site.
- No significant volumes of chemicals or fuels are expected to be stored on site and the battery units would be self-contained, as such, the potential for groundwater and surface water contamination is considered minimal.
- Ensure the project is designed, constructed and maintained to reduce impacts on water resources.
- Ensuring there is sufficient water for all stages of the development,

• Avenis has committed to storing all fuels, chemicals and liquids in an impervious bunded area and at least 40 m away from any waterways or drainage lines to avoid contamination.

Avenis has committed to managing water quality impacts during construction through preparation of a Soil
and Water Management Plan and the implementation of erosion and sediment control measures.
Notwithstanding, the Department has recommended a condition requiring Avenis to ensure that the
development does not cause any water pollution, as defined under section 120 of the *Protection of the*Environment Operations Act 1997.

Flooding

- Flood modelling indicates that parts of the site would experience shallow flooding with low water velocities during a 1% annual exceedance probability (AEP) event. Modelling identified the project would impact the flood behaviour within the site, where flood depths reached up to 1,300 mm on the south-eastern side of the site in the low point. Modelling undertaken for the EIS confirmed the project would have minimal impact on flood behaviour off the site. Flood modelling indicated the Deniliquin substation is currently above the 1% AEP, with any construction or ancillary works within the substation expected to have minimal impact on hydrology.
- The majority of the site has been classified as H1 low hazard vulnerability and would generally remain safe for vehicles, people, and buildings during a 1% AEP event. The site has areas of H2 (unsafe for small vehicles) and H3 (unsafe for vehicles and the elderly) at higher depths located within areas of lower elevation on the east and north ponding areas.
- Avenis has committed to undertaking flood modelling of the final design for the project and all road upgrades,
 to assess changes to flood behaviour for the Probable Maximum Flood and in consideration of climate change.
 Avenis has committed to all buildings and electrical infrastructure being designed to ensure a freeboard of at
 least 500 mm above the 1% AEP level, and outside flood hazard areas H5 and H6. Further, Avenis has
 committed to preparation of a Flood Emergency Response Plan, in consultation with emergency services and
 Council, to be implemented during construction, with flooding events to be addressed in the Emergency
 Response Plan during operation.
- Notwithstanding, the Department has recommended conditions to ensure the project does not cause any
 increased water being diverted off the site and to ensure the BESS and ancillary infrastructure are designed,
 constructed and maintained to reduce impacts on localised flooding.

- and if necessary, adjust the scale of the development to match its available water supply.
- Prepare and implement a Flood Emergency Response Plan

Groundwater interception

• The site is located within the Murray catchment, 2.3 km east of Edward River, and is not mapped as having Groundwater Vulnerability under the Edward River LEP. There is mapped Terrestrial Groundwater Dependent Ecosystems (GDEs) within the site associated with native vegetation, no other GDE's are mapped.

• Construction and operational activities are not expected to impact groundwater, therefore no impacts to GDEs are anticipated.

Water Supply

- During construction, up to 2.4 mega litres (ML) of water would be required over a 12 month period, primarily for dust suppression. All non-potable water would be sourced from Mulwala Canal under a temporary water access agreement from Murray Irrigation. Murray Irrigation reviewed the Amendment report and confirmed that with the implementation of Avenis' commitment to purchase an appropriate water access licence for the project they had no further comments on the project.
- During operation, up to 1 ML per year would be required for maintenance and site personnel requirements and would be supplied from rainfall collected off the maintenance building or delivered to site as required.
- A non-combustible water tank with a capacity of approximately 200,000 L would be provided for firefighting purposes and other non-potable water uses.
- Murray Irrigation and Council did not raise any concerns regarding water supply. Water Group did not raise any concerns regarding flooding, groundwater interception or water supply.
- Noting the above, the Department considers that the project would have negligible impacts on water resources and any potential impacts can be managed under the recommended conditions of consent.

Erosion and Sediment Control

- The project site is located on generally flat terrain, is not identified as flood prone and contains no watercourses or permanent waterbodies. Soils at the site are noted to be prone to structural decline due to slaking and dispersive characteristics. There are no salinity issues or records of acid sulphate soils on the site.
- Avenis has committed to implementing best practice principles to managing stormwater and sediment
 controls into the design, construction and operational phases of the BESS, including preparing an erosion and
 sediment control plan for the site.
- The Department is satisfied that erosion and sediment control during the construction and operation of the project would be adequately managed through the proposed conditions of consent.
- Minimise any soil erosion in accordance with the Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual and ensure the project is constructed and maintained to avoid causing erosion on site.

Social and Economic Impact

- The project would generate direct and indirect benefits to the local and broader community, including:
 - around \$206 million capital investment into the NSW economy;
 - up to 90 construction jobs and 2 operational jobs; and
 - the procurement of goods and services by Avenis and their contractors, noting Avenis' commitment to targeting procurement of local goods and services and hiring of local workers.
- Avenis prepared an accommodation inventory that assessed local and cumulative accommodation impacts
 from potential construction overlap with other SSD projects near Deniliquin and major local events (Deni Ute
 Muster, Deni Fest, and ArtOut Artisan). The assessment found there is sufficient short-term accommodation
 in Deniliquin and nearby towns to meet the peak workforce demand without affecting local housing or
 tourism, as construction is scheduled outside the major events. Avenis consulted with two local
 accommodation providers who confirmed capacity to accommodate the project workforce. Avenis has
 committed to developing an Accommodation and Employment Strategy (AES) in collaboration with Council
 and accommodation providers to manage the construction workforce and accommodation impacts, and
 Council has confirmed it supports this approach.
- Avenis has further committed to preparing and implementing a Community and Stakeholder Engagement Strategy and Community Benefits Sharing Program to ensure local businesses and the community benefit from the project.
- During operations, the project is unlikely to result in increased demand on community services and infrastructure and the facility would only require infrequent maintenance visits.
- Avenis has reached an agreement with Council that they would enter into a VPA with an estimated total contributions value of approximately \$1.44 million, the details of which can be found in **Appendix F**.

- Avenis to implement its offer to enter into the planning agreement as agreed with Council.
- Develop an Accommodation and Employment Strategy in consultation with Council.

Waste

- Public submissions raised concerns regarding waste management. Avenis provided further detail in the Submissions Report to outline the principles that would be adopted for waste management. Council has requested that Avenis consult with them during preparation of a Waste Management Plan.
- Avenis has committed to preparing and implementing a Waste Management Plan for all phases of the project.
- Standard construction waste such as concrete, excavated materials, green waste, timber, metals, cardboard and general waste would be generated during the construction of the project, with materials recycled where possible or taken to an appropriate waste disposal facility.
- Prepare and implement a Waste Management Plan prior to the commencement of construction.

- During operation, generation of waste would be avoided where possible or otherwise removed and recycled where practicable. During decommissioning, waste management would focus on avoidance, reuse and finally disposal.
- The Department has recommended conditions requiring Avenis to reduce waste, recycle where possible, and to dispose of unrecyclable waste at a licenced waste facility. Accordingly, the Department considers that the waste generated by the project would be appropriately managed.

Dust

- The proposed transport route includes the use of the Riverina Highway, which is sealed.
- Construction of the project would include earthworks for site preparation, vegetation clearance, trenching for cables and construction of access tracks. Other sources of dust would include vehicles travelling on unsealed roads.
- Due to the separation of the site from receivers the Department is satisfied that dust generated during construction would be adequately managed via the use of water trucks, covering loads, adjusting activities during strong wind conditions and other proposed measures, which Avenis has committed to implementing.
- During operation of the project, the Department considers the likelihood of dust generation to be low given there would be no ground disturbance, the BESS surface area would be comprised of crushed rock, and the number of vehicles accessing the site would be low.

• Minimise dust generated by the development.

Cumulative Impacts

- Avenis considered the potential cumulative impacts with other nearby renewable energy projects relevant at the time of EIS submission.
- Southdown Solar Farm (8 km south) was issued SEARs in June 2020, however SEARs for the project have since lapsed. Currawarra Solar Farm (21 km north east) and Tarleigh Park Solar Farm (16 km east) were approved in 2018 but have not commenced construction. Finley Solar Farm (42 km east) has been operational since December 2019.
- Since the lodgement of the Deniliquin BESS EIS, development applications have been lodged for Deniliquin
 East BESS (500 m north west), Finley BESS (42 km east) and South Coree BESS (43 km east). SEARs have
 also been issued for Berrigan BESS (41 km east), however a development application has not been lodged for
 the project.
- Avenis considered the potential cumulative impacts on biodiversity, noise, traffic, visual and social in accordance with the Department's Cumulative Impact Assessment Guidelines for State Significant Projects.

• No specific conditions required

- Cumulative impacts on biodiversity and vegetation clearing are anticipated to be minor.
- Four projects (Deniliquin East BESS, Tarleigh Park Solar Farm, Finley BESS, Finley Solar Farm) have the
 potential to use Riverina Highway at the site access location. The traffic volumes and assessments available
 for the four projects were considered in the mid-block assessment at the site access on Riverina Highway,
 which indicated the road network would continue to operate with a good level of service and any cumulative
 traffic impacts with surrounding projects would be minimal.
- Avenis considered the cumulative accommodation impacts due to a potential construction overlap with other renewable projects near Deniliquin and has committed to delivering an AES to manage the construction workforce and accommodation impacts, which is supported by Council.
- The Department considers the project would not generate substantive negative cumulative impacts.

Decommissioning and Rehabilitation

- The Department has developed standard conditions for battery projects to cover this stage of the project life cycle, including clear decommissioning triggers and rehabilitation objectives. Include rehabilitation objectives requiring the site to be
- With the implementation of these measures, the Department considers that the battery would be suitably decommissioned at the end of the project life, or within 18 months if operations cease unexpectedly, and that the site would be appropriately rehabilitated.
- Include rehabilitation objectives requiring the site to be rehabilitated within 18 months of cessation of operations.

6 Evaluation

- 106. The Department has assessed the development application, EIS, Submissions Report,
 Amendment Report and additional supporting documents provided by Avenis and has carefully
 considered:
 - submissions received from members of the community;
 - comments provided by Council; and
 - advice received from government agencies.
- 107. The Department has considered the objectives of the EP&A Act, including the Ecologically Sustainable Development principles, and relevant considerations under section 4.15(1) of the EP&A Act. The Department has given consideration to Avenis' evaluation of the project's merits against applicable statutory and strategic planning requirements.
- 108. The site is located on land zoned RU1 and SP2 and is permissible with consent in accordance with the Transport and Infrastructure SEPP. The site has been previously used for agricultural purposes, a gravel borrow pit, laydown area for Council works and transmission infrastructure. The site is appropriately sited in close proximity to the existing Deniliquin substation and has direct access to the State road network.
- 109. Only one submission from Murray Irrigation was received from within 10 km of the site. The other 67 submissions were received from over 50 km, with 27 from interstate, indicating a low level of concern about the project within the local community.
- 110. The project has been sited and designed to avoid key constraints, including amenity impacts to nearby non-associated residence, agricultural land, watercourses, native vegetation and Aboriginal heritage sites. Any residual impacts would be minor and can be managed through the recommended conditions.
- 111. The project would not result in any significant impacts to the overall agricultural productivity of the region, and it would avoid all areas of BSAL. Following decommissioning, the site could be reinstated to agricultural use, with improvements from the stabilisation and rehabilitation of the former borrow pit. The long-term agricultural productivity and land capability would be maintained or enhanced through the restoration of the former borrow pit to a level suitable for agricultural use. The Department considers there would be no significant visual impacts on surrounding residences, due to set back distances and vegetation providing screening.
- 112. The Department considered the submissions made through the exhibition of the project and the issues raised by the community and agencies during consultation, including fire safety and firefighting risk, land use compatibility, contamination risk, biodiversity, visual impacts and

- waste management. These matters have been addressed through the recommended conditions of consent, including strict requirements to manage any fire risk, biodiversity impacts, waste and decommissioning triggers and rehabilitation objectives to reinstate agricultural land.
- 113. The project would provide flow-on benefits to the local community, including up to 90 construction jobs during peak construction and a capital investment of \$206 million. A Voluntary Planning Agreement involving payments to Edward River Council of approximately \$1.44 million is also proposed for community benefits.
- 114. On balance, the Department considers the site to be appropriate for a BESS, as it has ready access to major electricity transmission network infrastructure and aligns with the objectives of the Riverina *Murray Regional Plan 2041*. Further, the project would provide additional and substantial investment towards improving the reliability of the energy network, storage and firming capacity to the National Energy Market, and additional services to assist grid stability, including frequency control ancillary services.
- 115. 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**).
- 116. This assessment report is hereby presented to the Commission to determine the application.

Prepared by:

Nicholas Kumar – Senior Environmental Assessment Officer

Shannon Blackmore - Principal Planning Officer

Recommended by:

10/11/25

Iwan Davies

Director

Energy Assessments

10/11/23

Chris Ritchie

C. Retite

A/Executive Director

Energy, Resources and Industry

Appendices

Appendix A – Environmental Impact Statement

Appendix B - Submissions

Appendix C - Agency advice

Appendix D - Submissions report

Appendix E - Amendment report

Appendix F - Additional information

Appendix G - Recommended development consent

Appendices A to G available at: https://www.planningportal.nsw.gov.au/major-projects/projects/deniliquin-battery-energy-storage-system

Appendix H - Consideration of community views

The Department exhibited the EIS for the project from 31 January 2025 until 27 February 2025 and received 68 unique submissions from the community (66 objections, one support, one comment), including 8 objections from special interest groups.

The Department consulted with government agencies and 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** the merits of renewable energy, land use compatibility, hazards (fire risk and contamination) and biodiversity.

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

Issue	Consideration
Energy Security, Cost and Resource Recovery	 Assessment The project aligns with a range of Commonwealth 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.

ssue

Consideration

- Battery storage provides 'firming capacity' by contributing to dispatchable energy availability during peak energy demands or when renewable production is low.
- The project would contribute to energy security and reliability by providing frequency control ancillary services and system restart ancillary services, meaning the project would contribute to energy supply.
- On balance, the Department considers the environmental benefit of reducing greenhouse gas emissions outweigh any manufacturing impacts.

Conditions

• Minimise harm to the environment.

Hazards (fire risk

Assessment

- and contamination) The Applicant has undertaken a preliminary hazards analysis (PHA) which concluded that the risks would not exceed the acceptable risk criteria or can be mitigated subject to implementation of recommendations.
 - To actively manage fire risk, an asset protection zone would be established and maintained. In addition, a non-combustible water tank with a capacity of approximately 200,000 L would be provided for firefighting purposes and other nonpotable water uses.
 - A Fire Safety Study would be prepared along with an Emergency Plan to support the development.
 - A preliminary site investigation (PSI) found that the risk of contamination at the site is unlikely and no further assessment or remediation would be required.

Conditions

- Develop a Fire Safety Study prior to the commencement of construction.
- Develop an Emergency Plan prior to commencement of commissioning.
- Store and handle all chemicals, fuels and oils and used on-site in accordance with relevant standards.
- Provide an asset protection zone in accordance with RFS's Planning for Bushfire Protection 2019 and Standards for Asset Protection Zones

Biodiversity

Assessment

- The project would not significantly impact on matters listed under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act).
- As described in **Section 5.4**, impacts to matters listed under the *Biodiversity* Conservation Act 2016 (BC Act) are limited to 5.06 hectares (ha) of native vegetation, which would generate 19 ecosystem credits and 2 species credits, which would be offset in accordance with the NSW Biodiversity Offsets Scheme.

Conditions

- Retire the applicable biodiversity offset credits in accordance with the NSW Biodiversity Offsets Scheme.
- Prepare and implement a Biodiversity Management Plan prior to construction and in consultation with Conservation Programs, Heritage and Regulation Group (CPHR).

Appendix I – Statutory considerations

Objects of the EP&A Act

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

Summary

Objects of the EP&A Act

The objects of most relevance to the Consent Authority'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 land use on the subject land;
- is located in a logical location in close proximity to an existing substation;
- 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;
- 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 Climate Change Policy Framework and Net Zero Plan Stage 1: 2020 2030 and Implementation update (2022) and would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions.

The Department has considered the encouragement of Ecologically Sustainable Development (ESD) (Object 1.3 (b)) in its assessment of the project. This assessment integrates all significant socio-economic 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 an appropriately designed SSD battery and energy storage facility development, in itself, is consistent with many of the principles of ESD. Avenis 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.

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 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

Summary

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.

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 development

Under section 4.36 of the EP&A Act the project is considered a State 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 Independent Planning Commission is the consent authority for the development as the project received more than 50 unique public submissions by the way of objection to the application.

Environmental Planning Instruments (EPIs)

The *Edward River Local Environmental Plan 2013* (Edward River LEP) applies to the extent of determining the permissibility of the project and is discussed in **Section** 3.1. The project is located on RU1 – Primary production and SP2 – Infrastructure land use zones under the Edward River LEP and is permissible with consent under the provisions of the Transport and Infrastructure SEPP.

In accordance with the Transport and Infrastructure SEPP, the Department has given written notice of the project to Transgrid (s2.48) and TfNSW. The Department has considered the advice received and, where appropriate, developed conditions of consent to address recommendations and advice of these authorities. The Department has considered requirements of clause 2.119 and considers that, while the project involves vehicular access directly onto the Riverina Highway, the access design ensures safe and efficient operation and would not adversely affect the highway's function and the development is not sensitive to traffic noise or emissions.

Avenis completed a preliminary risk screening in accordance with *State Environmental Planning Policy* (*Resilience and Hazards*) 2021 and confirmed the project was not categorised as potentially hazardous or potentially offensive development. A preliminary hazard analysis (PHA) prepared for the project concluded the risk profile of the project was tolerable and that there was negligible risk of off-site consequences associated with the project. Avenis has committed to implementing all controls recommended by the PHA. Accordingly, the Department is satisfied that the proposed development is not potentially hazardous or potentially offensive development and does not pose an unacceptable risk to community or environment.

The Department has also considered the provisions of chapter 4 of the Resilience and Hazards SEPP. The site is not listed as a contaminated site in the NSW EPA Contaminated Land Record and list of NSW contaminated sites. A Preliminary Site Investigation concluded that the site does not present a risk to human health or the environment under a commercial / industrial land use. The Department considers the site would be suitable for the proposed development.