



# Garoo Solar Farm and Battery Energy Storage System

Environmental Impact Statement

PREPARED FOR  
The Trustee for GreenPulse  
Solar Farm and BESS Unit Trust

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30 January 2026

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# Garoo Solar Farm and Battery Energy Storage System

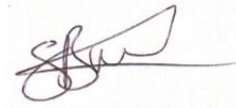
## Environmental Impact Statement

0751705



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## CONTENTS

REAP DECLARATION	1
EXECUTIVE SUMMARY	2
<b>1. INTRODUCTION</b>	<b>20</b>
1.1 THE APPLICANT	20
1.2 PROJECT OVERVIEW	21
1.3 PROJECT BACKGROUND	23
1.4 PROJECT OBJECTIVES	23
1.5 RELATED DEVELOPMENT	24
1.6 RESTRICTIONS OR COVENANTS	24
<b>2. STRATEGIC CONTEXT</b>	<b>25</b>
2.1 TRANSITION TO RENEWABLE ENERGY	25
2.2 AUSTRALIAN GOVERNMENT STRATEGIES, POLICIES AND PLANS	26
2.3 NSW GOVERNMENT STRATEGIES, POLICIES AND PLANS	27
2.3.1 State Significant Development Guidelines	27
2.3.2 Renewable Energy Planning Framework	27
2.4 REGIONAL AND LOCAL STRATEGIES, POLICIES AND PLANS	28
2.5 SITE SETTING AND SURROUNDING LAND	32
2.6 NEARBY MAJOR PROJECTS	36
2.7 CONTRIBUTIONS AND AGREEMENTS	40
2.7.1 Host Landowner Agreement	40
2.7.2 Benefit Sharing Schemes	40
2.8 PROJECT ALTERNATIVES	41
2.8.1 No Project	41
2.8.2 Alternative Sourcing of Energy	42
2.8.3 Alternative Site Selection	42
2.8.4 Design Evolution and Impact Minimisation	42
2.9 KEY POTENTIAL RISKS	44
<b>3. PROJECT DESCRIPTION</b>	<b>46</b>
3.1 OVERVIEW	46
3.2 PROJECT AREA AND DEVELOPMENT FOOTPRINT	48
3.3 LAND DETAILS	58
3.3.1 Residential Dwellings	58
3.3.2 Development Rights	59
3.3.3 Crown Land	63
3.3.4 Access	63
3.4 PROJECT ELEMENTS	63
3.4.1 Solar Panels	63
3.4.2 Battery Energy Storage System	64
3.4.3 Electrical Reticulation and Grid Connection	64
3.4.4 Permanent O&M Compound	65
3.4.5 Internal Access Tracks	66
3.4.6 Drainage	66
3.4.7 Lighting	67
3.4.8 Landscaping	67
3.4.9 Fire Management	67

3.4.10	External Infrastructure	67
3.4.11	Temporary Construction Compound	67
3.4.12	Workforce Accommodation Camp	68
3.5	CONSTRUCTION	69
3.5.1	Duration	69
3.5.2	Workforce and Hours of Operations	72
3.5.3	Site Preparation and Construction Activities	73
3.5.4	Temporary Infrastructure and Activities	73
3.5.5	Services and Utilities	74
3.5.6	Transport Route	76
3.5.7	Site Access	76
3.5.8	Road Upgrades	76
3.5.9	Post Construction Site Rehabilitation	76
3.6	OPERATION	79
3.6.1	Commissioning	79
3.6.2	Operational Hours and Workforce	79
3.6.3	Services and Utilities	80
3.7	DECOMMISSIONING AND REHABILITATION	80
3.8	LAND SUBDIVISIONS	81
3.9	ENVIRONMENTAL MANAGEMENT	81
<b>4.</b>	<b>STATUTORY CONTEXT</b>	<b>83</b>
4.1	POWER TO GRANT APPROVAL	83
4.2	PERMISSIBILITY	83
4.2.1	SEPP (Transport and Infrastructure) 2021	83
4.3	OTHER APPROVALS	83
4.4	PRE-CONDITIONS TO EXERCISING THE POWER TO GRANT APPROVAL	85
4.5	MANDATORY MATTERS FOR CONSIDERATION	85
<b>5.</b>	<b>COMMUNITY ENGAGEMENT</b>	<b>86</b>
5.1	COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY	86
5.2	ENGAGEMENT PRINCIPLES	86
5.3	STAKEHOLDER IDENTIFICATION	87
5.4	COMMUNITY AND STAKEHOLDER ENGAGEMENT CONDUCTED	90
5.5	COMMUNITY AND STAKEHOLDER VIEWS	92
5.6	FUTURE ENGAGEMENT	99
<b>6.</b>	<b>IMPACT ASSESSMENT</b>	<b>100</b>
6.1	BIODIVERSITY	100
6.1.1	Existing Environment	100
6.1.2	Impact Assessment	105
6.1.3	Mitigation and Management	108
6.2	AQUATIC ECOLOGY	110
6.2.1	Existing Environment	110
6.2.2	Impact Assessment	114
6.2.3	Mitigation and Management	116
6.3	ABORIGINAL HERITAGE	117
6.3.1	Aboriginal Community Consultation	118
6.3.2	Existing Environment	118
6.3.3	Impact Assessment	120
6.3.4	Mitigation and Management	124

6.4	HISTORIC HERITAGE	126
6.4.1	Existing Environment	126
6.4.2	Impact Assessment	127
6.4.3	Mitigation and Management	127
6.5	NOISE	127
6.5.1	Existing Environment	128
6.5.2	Impact Assessment	128
6.5.3	Mitigation and Management	134
6.6	LANDSCAPE AND VISUAL	136
6.6.1	Existing Environment	136
6.6.2	Impact Assessment	137
6.6.3	Mitigation and Management	141
6.7	GLINT AND GLARE	141
6.7.1	Methodology	142
6.7.2	Impact Assessment	142
6.7.3	Mitigation and Management	143
6.8	LAND AND AGRICULTURE	144
6.8.1	Existing Environment	144
6.8.2	Impact Assessment	148
6.8.3	Mitigation and Management	150
6.9	CONTAMINATED LAND	151
6.9.1	Existing Environment	151
6.9.2	Impact Assessment	155
6.9.3	Mitigation and Management	157
6.10	WATER RESOURCES	158
6.10.1	Existing Environment	159
6.10.2	Impact Assessment	163
6.10.3	Mitigation and Management	165
6.11	TRANSPORT AND TRAFFIC	167
6.11.1	Existing Environment	168
6.11.2	Impact Assessment	170
6.11.3	Mitigation and Management	177
6.12	PRELIMINARY HAZARD ANALYSIS	177
6.12.1	Preliminary Analysis	178
6.12.2	Hazard Identification	178
6.12.3	Impact Assessment	179
6.12.4	Mitigation and Management	180
6.13	BUSHFIRE	182
6.13.1	Existing Environment	182
6.13.2	Impact Assessment	184
6.13.3	Mitigation and Management	186
6.14	ECONOMICS	187
6.14.1	Methodology	187
6.14.2	Existing Environment	188
6.14.3	Impact Assessment	188
6.14.4	Mitigation and Management	190
6.15	AIR QUALITY	192
6.15.1	Existing Environment	192
6.15.2	Impact Assessment	197
6.15.3	Mitigation and Management	198
6.16	WASTE MANAGEMENT	199

6.16.1	Existing Environment	199
6.16.2	Impact Assessment	202
6.16.3	Mitigation and Management	202
6.17	SOCIAL	205
6.17.1	Existing Environment	205
6.17.2	Impact Assessment	209
6.17.3	Mitigation and Management	213
6.18	CUMULATIVE IMPACTS	214
6.18.1	Cumulative Impact Summary	214
<b>7.</b>	<b>PROJECT JUSTIFICATION</b>	<b>218</b>
7.1	PROJECT DESIGN EVOLUTION	218
7.2	CONSISTENCY WITH STRATEGIC CONTEXT	218
7.3	COMPLIANCE WITH THE RELEVANT STATUTORY CONTEXT	223
7.4	COMMUNITY VIEWS	223
7.5	SCALE AND NATURE OF IMPACTS	224
7.5.1	Environmental Impacts	224
7.5.2	Social Impacts	224
7.5.3	Economic Impacts	225
7.6	COMPLIANCE AND MONITORING	225
7.7	ECOLOGICALLY SUSTAINABLE DEVELOPMENT	226
7.7.1	The Precautionary Principle	226
7.7.2	Inter-Generational Equity	226
7.7.3	Conservation Of Biological Diversity and Ecological Integrity	226
7.7.4	Social and Economic Benefits	227
7.8	CONCLUSION	227
<b>8.</b>	<b>REFERENCES</b>	<b>228</b>
APPENDIX A REGULATORY REQUIREMENTS AND WHERE ADDRESSED		
APPENDIX B MITIGATION AND MANAGEMENT SUMMARY		
APPENDIX C STATUTORY COMPLIANCE		
APPENDIX D STAKEHOLDER ENGAGEMENT		
APPENDIX E DETAILED MAPS AND PLANS		
APPENDIX F ESTIMATED DEVELOPMENT COST		
APPENDIX G BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT		
APPENDIX H ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT		
APPENDIX I HISTORIC HERITAGE ASSESSMENT REPORT		
APPENDIX J NOISE IMPACT ASSESSMENT		
APPENDIX K LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT		
APPENDIX L GLINT AND GLARE		
APPENDIX M LAND AND AGRICULTURE IMPACT ASSESSMENT		
APPENDIX N PRELIMINARY SITE INVESTIGATION		
APPENDIX O WATER RESOURCES IMPACT ASSESSMENT		
APPENDIX P TRAFFIC IMPACT ASSESSMENT		
APPENDIX Q PRELIMINARY HAZARD ANALYSIS		
APPENDIX R BUSHFIRE IMPACT ASSESSMENT		
APPENDIX S ECONOMIC IMPACT ASSESSMENT		
APPENDIX T SOCIAL IMPACT ASSESSMENT		

## LIST OF TABLES

TABLE 1-1	PROJECT EVOLUTION	23
TABLE 1-2	RESTRICTIONS AND COVENANTS	24
TABLE 2-1	NSW RETIRING COAL-FIRED POWER STATIONS	25
TABLE 2-2	REGIONAL AND LOCAL STRATEGIES, POLICIES AND PLANS RELEVANT TO THE PROJECT	29
TABLE 2-3	SITE SETTING AND SURROUNDING LAND	32
TABLE 2-4	NEARBY MAJOR DEVELOPMENTS	37
TABLE 2-5	COMMUNITY BENEFIT DETAILS (PER ANNUM \$2024)	41
TABLE 2-6	DESIGN EVOLUTION TO AVOID, MINIMISE OR MITIGATE ACTIONS	43
TABLE 2-7	PROJECT KEY RISKS OR HAZARDS	44
TABLE 3-1	PROJECT SUMMARY	46
TABLE 3-2	LAND TITLES WITHIN THE PROJECT AREA	58
TABLE 3-3	EXISTING DWELLINGS	59
TABLE 3-4	WORKFORCE ACCOMMODATION CAMP - FACILITIES AND INFRASTRUCTURE	68
TABLE 3-5	INDICATIVE CONSTRUCTION TIMELINE	70
TABLE 3-6	INDICATIVE MONTHLY CONSTRUCTION SCHEDULE	71
TABLE 3-7	INDICATIVE CONSTRUCTION PLANT	75
TABLE 4-1	OTHER APPROVALS REQUIRED	83
TABLE 4-2	PRE-CONDITIONS	85
TABLE 5-1	IDENTIFIED STAKEHOLDERS	87
TABLE 5-2	SUMMARY OF ENGAGEMENT ACTIVITIES	90
TABLE 5-3	SUMMARY OF COMMUNITY AND STAKEHOLDER ENGAGEMENT	92
TABLE 5-4	SUMMARY OF AGENCY ENGAGEMENT	94
TABLE 6-1	VEGETATION ZONES AND THREATENED ECOLOGICAL COMMUNITIES	101
TABLE 6-2	INDIRECT IMPACTS TO BIODIVERSITY VALUES	106
TABLE 6-3	IMPACTS THAT REQUIRED OFFSET – ECOSYSTEM CREDITS	108
TABLE 6-4	IMPACTS REQUIRE OFFSER - SPECIES CREDITS	108
TABLE 6-5	BIODIVERSITY MITIGATION AND MANAGEMENT	108
TABLE 6-6	AQUATIC ECOLOGY MITIGATION AND MANAGEMENT	116
TABLE 6-7	NEWLY IDENTIFIED SITES AND AHIMS DETAILS	120
TABLE 6-8	SUMMARY OF ABORIGINAL HERITAGE SIGNIFICANCE	122
TABLE 6-9	ABORIGINAL HERITAGE MITIGATION AND MANAGEMENT MEASURES	124
TABLE 6-10	HISTORIC HERITAGE MITIGATION MEASURES	127
TABLE 6-11	PREDICTED CONSTRUCTION NOISE LEVELS	130
TABLE 6-12	MINIMUM ASSUMED PNTLS FOR RESIDENTIAL RECEIVERS	131
TABLE 6-13	RNP RESIDENTIAL ROAD TRAFFIC NOISE CRITERIA	133
TABLE 6-14	NOISE MITIGATION AND MANAGEMENT MEASURES	134
TABLE 6-15	SUMMARY OF THE LANDSCAPE CHARACTER ASSESSMENT	136
TABLE 6-16	VISUAL MITIGATION AND MANAGEMENT MEASURES	141
TABLE 6-17	SUMMARY OF OPERATIONAL MANAGEMENT SCENARIOS	142
TABLE 6-18	MITIGATION AND MANAGEMENT MEASURES FOR GLINT AND GLARE IMPACTS	143
TABLE 6-19	SUMMARY OF EXISTING LAND/SOIL CHARACTERISTICS	144
TABLE 6-20	SUMMARY OF SITE VERIFICATION SURVEY	145
TABLE 6-21	LAND AND AGRICULTURE MITIGATION AND MANAGEMENT MEASURES	150
TABLE 6-22	ENVIRONMENTAL SETTING	152
TABLE 6-23	CONDENSED PRELIMINARY CONCEPTUAL SITE MODEL	156
TABLE 6-24	RISK EVALUATION – CONTAMINATION	157
TABLE 6-25	CONTAMINATION MITIGATION AND MANAGEMENT MEASURES	158

TABLE 6-26	SUMMARY OF EXISTING ENVIRONMENT (WATER RESOURCES)	159
TABLE 6-27	APPLICABLE PLAN AREAS	160
TABLE 6-28	ESTIMATED WATER REQUIREMENTS (CONSTRUCTION)	161
TABLE 6-29	IMPACTS OF KEY INFRASTRUCTURE ON FLOODING	163
TABLE 6-30	SURFACE WATER QUALITY IMPACTS	164
TABLE 6-31	WATER RESOURCES MANAGEMENT AND MITIGATION	165
TABLE 6-32	SUMMARY OF ROAD NETWORK	168
TABLE 6-33	TRAFFIC VOLUMES – GAROO ROAD AND LINDSAYS GAP ROAD	169
TABLE 6-34	VEHICLE TYPE AND ESTIMATED TRAFFIC DISTRIBUTION	171
TABLE 6-35	TRAFFIC GENERATION DURING CONSTRUCTION PERIODS	172
TABLE 6-36	PROPOSED ROUTE – HEAVY VEHICLES (NON HIGH RISK)	174
TABLE 6-37	TRAFFIC AND TRANSPORT MANAGEMENT AND MITIGATION	177
TABLE 6-38	HAZARD MITIGATION AND MANAGEMENT	180
TABLE 6-39	BUSHFIRE MITIGATION AND MANAGEMENT	186
TABLE 6-40	SUMMARY OF THE REGIONAL ECONOMY (TAMWORTH REGIONAL LGA)	188
TABLE 6-41	ANNUAL ECONOMIC IMPACTS OF THE PROJECT	189
TABLE 6-42	ANNUAL ECONOMIC IMPACTS OF FOREGONE AGRICULTURE	189
TABLE 6-43	ECONOMIC MITIGATION MEASURES AND MANAGEMENT	191
TABLE 6-44	MONTHLY RAINFALL DATA (MM), GOWRIE (LALLYBROCH) WEATHER STATION (BOM 055195)	196
TABLE 6-45	MONTHLY WIND SPEED DATA (KM/H), QUIRINDI POST OFFICE AND TAMWORTH AIRPORT	196
TABLE 6-46	AIR QUALITY MANAGEMENT AND MITIGATION	198
TABLE 6-47	EXISTING WASTE MANAGEMENT FACILITIES	200
TABLE 6-48	WASTE MANAGEMENT MITIGATION MEASURES	203
TABLE 6-49	INDICATIVE WASTE GENERATION AND MANAGEMENT STRATEGIES	203
TABLE 6-50	COMPONENTS OF THE PROJECT’S SOCIAL LOCALITY	205
TABLE 6-51	SOCIAL BASELINE SUMMARY	208
TABLE 6-52	SOCIAL IMPACT ISSUES	210
TABLE 6-53	SOCIAL MITIGATION AND MANAGEMENT MEASURES	213
TABLE 7-1	ALIGNMENT WITH REGIONAL AND LOCAL OBJECTIVES	220

## LIST OF FIGURES

FIGURE 1-1	PROJECT LOCALITY	22
FIGURE 2-1	PROPOSED ENERGY PROJECTS BY NEM REGION (AS OF JULY 2024)	25
FIGURE 2-2	LAND ZONING	31
FIGURE 2-3	TOPOGRAPHY AND WATERCOURSES	34
FIGURE 2-4	LAND USE (NSW 2017 MAPPING DATA)	35
FIGURE 2-5	NEARBY STATE SIGNIFICANT DEVELOPMENTS	39
FIGURE 3-1	PROJECT LAYOUT	49
FIGURE 3-2	TEMPORARY WORKERS ACCOMMODATION CAMP	56
FIGURE 3-3	LAND CADASTRE	61
FIGURE 3-4	DWELLING ENTITLEMENTS	62
FIGURE 3-5	ESTIMATED WORKFORCE NUMBERS	72
FIGURE 3-6	TRANSPORT ROUTE	78
FIGURE 3-7	INDICATIVE SUBDIVISION	82
FIGURE 5-1	ENGAGEMENT BY STAKEHOLDER GROUP	91
FIGURE 5-2	ENGAGEMENT CHANNEL	92
FIGURE 6-1	NATIVE VEGETATION COVER	103
FIGURE 6-2	PLANT COMMUNITY TYPE	104

FIGURE 6-3	STRAHLER STREAM ORDER	112
FIGURE 6-4	KEY FISH HABITAT AND WATERFRONT LAND	113
FIGURE 6-5	ABORIGINAL HERITAGE SITES WITHIN THE PROJECT AREA	121
FIGURE 6-6	ABORIGINAL HERITAGE SENSITIVITY MAPPING	123
FIGURE 6-7	POTENTIAL IMPACTS TO ABORIGINAL CULTURAL HERITAGE SITES	125
FIGURE 6-8	OPERATIONAL NOISE CONTOURS	132
FIGURE 6-9	SIMPLE ASSESSMENT RESULTS	139
FIGURE 6-10	INTERMEDIATE ASSESSMENT RESULTS	140
FIGURE 6-11	LAND AND SOIL CAPABILITY – FIELD VERIFIED MAPPING	146
FIGURE 6-12	AUSTRALIAN SOIL CLASSIFICATION – FIELD VERIFIED MAPPING	147
FIGURE 6-13	AREAS OF POTENTIAL ENVIRONMENTAL CONCERN AND POTENTIAL FUTURE INTEREST	154
FIGURE 6-14	PROPOSED ACCESS ROUTE	175
FIGURE 6-15	BUSHFIRE PRONE LAND	185
FIGURE 6-16	ANNUAL WIND OBSERVATIONS, QUIRINDI POST OFFICE, 1965 - 2024	194
FIGURE 6-17	ANNUAL WIND OBSERVATIONS, TAMWORTH AIRPORT 1957 - 1992	195
FIGURE 6-18	SIA PROCESS	205
FIGURE 6-19	THE PROJECT'S SOCIAL LOCALITY	207

## TERMINOLOGIES, ACRONYMS AND ABBREVIATIONS

<i>Name</i>	<i>Description</i>
<b>Terminologies</b>	
Applicant or GreenPulse	The Trustee for GreenPulse Solar Farm and BESS Unit Trust
Associated dwelling	Dwellings located within the Project Area and/ or whose owners are hosting Project infrastructure or have entered into an agreement with the Applicant in relation to the Project
Development Footprint	Maximum area directly impacted by Project construction and operation, which is approximately 305.43 ha. The Development Footprint is located entirely within the Project Area and will be subject to permanent disturbance during construction and operation of the Project until decommissioning.
Non-associated dwelling	Dwelling that may be impacted by the Project, but there is no agreement between the applicant and landowner in relation to the development. Non-associated dwellings considered in this report are those within the relevant assessment area (4 km of the Project Area).
Project	Garoo Solar Farm and BESS
Project Area	The area to which the development application applies, which is approximately 369 ha. This area encompasses temporary and permanent Project infrastructure, and additional areas that have been excluded from the project design.
Study Area	Subject area for individual assessments will differ commensurate with the relevant legislation and guidelines for individual aspects
Subject Land	The area of land as defined in the Biodiversity Assessment Method 2020 being subject to a development, activity, clearing, biodiversity certification or a biodiversity stewardship proposal.
<b>Acts</b>	
BC Act	<i>Biodiversity Conservation Act 2016</i>
CrLM Act	<i>Crown Land Management Act 2016</i>
EII Act	<i>Electricity Infrastructure Investment Act 2020</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
NP&W Act	<i>National Parks and Wildlife Act 1974</i>
NT Act	<i>Native Title Act 1993</i>
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Roads Act	<i>Roads Act 1993</i>
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i>
WM Act	<i>Water Management Act 2000</i>
<b>Regulations</b>	
EP&A Regulation	Environmental Planning & Assessment Regulations 2021
EPBC Regulations	Environment Protection and Biodiversity Conservation Regulations 2000

<i>Name</i>	<i>Description</i>
<i>Management Plans</i>	
ACHMP	Aboriginal Cultural Heritage Management Plan
BFRMP	Bush Fire Risk Management Plan
BMP	Biodiversity Management Plan
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CTMP	Construction Traffic Management Plan
EMS	Environmental Management Strategy
ESCP	Erosion and Sediment Control Plan
NMP	Noise Management Plan
OEMP	Operational Environmental Management Plan
PAMP	Pest Animal Management Plan
SEP	Stakeholder Engagement Plan
SWMP	Soil and Water Management Plan
TMP	Traffic Management Plan
WAMP	Workforce Management Plan
WMP	Waste Management Plan
<i>Guidelines, Manuals and Policies</i>	
ACHAR Guide	Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW
Applying SEPP 33	Hazardous and Offensive Development Application Guidelines: Applying SEPP 33
BAM	Biodiversity Assessment Method 2020
BAM-C	BAM Calculator
Blue Book	Managing Urban Stormwater: Soils and Construction- Volume 1 (Landcom, 2004)
Burra Charter	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance
CIA Guidelines	Cumulative Impact Assessment Guidelines for State Significant Projects 2021
Consultation Requirements	Aboriginal Cultural Heritage Consultation Requirements for Applicants 2010
Code of Practice	Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW
Engagement Guidelines	Undertaking Engagement Guidelines for State Significant Projects 2022
EMS	Environmental Management System
HIPAP	Hazardous Industry Planning Advisory Paper

<i>Name</i>	<i>Description</i>
HIPAP 4	Hazardous Industry Advisory Paper No. 4, 'Risk Criteria for Land Use Safety Planning'
HIPAP 6	Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'
ICNG	Interim Construction Noise Guidelines
ICNIRP	International Commission on Non-Ionizing Radiation Projection Guidelines 2010
Landscape and Visual Technical Supplement	Technical Supplement - Landscape and Visual Impact Assessment
LUCRA Guide	Land Use Conflict Risk Assessment Guide
NPI	Noise Policy for Industry (2017)
NSW Waste Classification Guidelines	NSW EPA Waste Classification Guidelines – Part 1: classifying waste
PBP 2019	Planning for Bushfire Protection 2019
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
Resilience and Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
RNP	NSW Road Noise Policy
Solar Guidelines	Large Scale Solar Energy Guidelines 2022
SSD Guidelines	The State Significant Development Guidelines
SRLUP	Strategic Regional Land Use Policy 2011
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
WHS Regulation	Work Health and Safety Regulation 2017
<i>Abbreviations - General</i>	
°C	Celsius degrees
ABN	Australian Business Number
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEMO	Australian Energy Market Operator's
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIA	Agricultural Impact Assessment
AIP	Aeronautical Information Package
ALA	Aircraft Landing Area
ANZECC	Australian and New Zealand Environment Conservation Council
ANZSIC	Australian and New Zealand Industry Classification

<i>Name</i>	<i>Description</i>
APZ	Asset Protection Zone
AQI	Air Quality Index
AS	Australian Standard
ASC	Australian Soil Classification
BAL	Basic Left Turn
BAM	Biodiversity Assessment Method
BAM Plots	Vegetation Integrity Plots
BAR	Basic Right Turn
BCS	Biodiversity and Conservation and Science, part of the Department of Climate Change, Energy, the Environment and Water, NSW
BCT	Biodiversity Conservation Trust
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BFMC	Bushfire Management Committee
Blueprint 100	Tamworth Blueprint 100. Refers to a series of plans that outline Tamworth Regional Councils strategy through to 2041
BOM	Bureau of Meteorology
BOS	NSW Biodiversity Offset Scheme
BSAL	Biophysical Strategic Agricultural Land
CALD	Cultural and linguistic diversity
CASA	Civil Aviation Safety Authority
CEEC	Critically Endangered Ecological Community
CIA	Cumulative Impact Assessment
CO <sub>2</sub> -e pa	Carbon dioxide equivalent
COP	Refers to the Conference of the Parties, regular meetings held by the United Nations Framework Convention on Climate Change
COP26	UNFCCC Conference of Parties 26
COP28	UNFCCC Conference of Parties 26
CSES	Communications and Stakeholder Engagement Strategy
CSM	Conceptual Site Model
Cth	Commonwealth
dB	Decibel
dB(A)	A-weighted Decibels
DCCEEW	Department of Climate Change, Energy, the Environment and Water, NSW
DGs	Dangerous Goods
DGV	Default Guideline Values

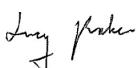
<i>Name</i>	<i>Description</i>
DP	Deposited Plan
DPE	Former Department of Planning and Environment, now Department of Planning, Housing and Infrastructure, NSW
DPHI	Department of Planning, Housing and Infrastructure, NSW (formerly Department of Planning and Environment)
EDC	Estimated Development Cost
EIA	Economic Impact Assessment
EMF	Electromagnetic Field
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
EPC	Engineering, procurement and construction
EPI	Environmental Planning Instrument
EPL	Environmental Protection Licence
ERM	Environmental Resources Management Australia Pty Ltd
ESD	Ecologically Sustainable Development
ESOO	Electricity Statement of Opportunities 2024
FAQs	Frequently Asked Questions
FBI	Fire Behaviours Index
FDR	Fire Danger Rating
FIFO	Fly-in Fly-out
FRNSW	Fire and Rescue NSW
FTE	Full Time Equivalent
GDE	Groundwater Dependent Ecosystems
GHG	Greenhouse Gas
GW	Gigawatt
GWh	Gigawatt hours
ha	Hectares
HHA	Historic Heritage Assessment
HRV	Heavy Rigid Trucks
Hz	Hertz
IAP2	International Association for Public Participation
IBRA	Interim Biogeographic Regionalism for Australia
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEC	International Electrotechnical Commission
IO	Input-output
IPA	Inner Protection Area

<i>Name</i>	<i>Description</i>
ISP	Integrated System Plan
km	Kilometre
km <sup>2</sup>	Square Kilometres
kV	Kilovolt
L	Litres
LAIA	Land and Agriculture Impact Assessment
LCVIA	Landscape character and Visual Impact Assessment
LCZ	Landscape Character Units
LFP	Lithium-Ion phosphate
LGA	Local Government Area
LLS	Local Land Services
LRET	Large-scale Renewable Energy Target
LSC	Land and Soil Capability
LSC Scheme	Land and Soil Capability Assessment Scheme
LSPS	Tamworth Regional Council Local Strategic Planning Statement 2020
m	Metres
MEG	Mining, Exploration and Geoscience
mG	Milligauss
ML	megalitre
mm	millimetres
MNES	Matters of National Environmental Significance
MRV	Medium Rigid Trucks
MW	Megawatt
MWh	Megawatt hour
MWn	Megawatt nominal
NAD	Non-associated Development
NAN4	Peel Interim Biogeographic Regionalisation for Australia subregion
NBSP	Neighbour Benefit Sharing Program
NEM	National Electricity Market
NIA	Noise Impact Assessment
NML	Noise Management Levels
NNTT	National Native Title Tribunal
NPI	Noise Policy for Industry
NPWS	National Parks and Wildlife Service
NSW	New South Wales

<i>Name</i>	<i>Description</i>
NSW RFS	NSW Rural Fire Service
NTS Corp	Native Title Services Corporation
NVIA	Noise and Vibration Impact Assessment
NVR	Draft Native Vegetation Regulatory Map
O&M	Operation and Maintenance
OSOM	Oversize and Overmass
PAD	Potential Archaeological Deposits
Paris Agreement	United Nations Paris Agreement on climate change
PBA	Preliminary Biodiversity Assessment
PCT	Plant Community Type
PCU	Power Conditioning Unit
PHA	Preliminary Hazard Analysis
PINL	Project Intrusiveness Noise Level
PM10	Particles with a diameter of 10 micrometres or less
PM2.5	Particles with a diameter of 2.5 micrometres or less
PMF	Probably Maximum Flood
PNTL	Project Noise Trigger Level
PSI	Preliminary Site Investigation
PV	Photovoltaic
RAP	Registered Aboriginal Party
RBL	Rating Background Level
REAP	NSW Renewable Energy Action Plan
Regional Plan	The New England North West Regional Plan 2041
RET	Renewable Energy Target
REZ	Renewable Energy Zone
Roadmap	NSW Electricity Infrastructure Roadmap 2020
SAII	Serious and Irreversible Impacts
SCADA	Supervisory Control and Data Acquisition
SDG	Sustainable Development Goals
SEARs	Secretary's Environmental Assessment Requirements
SEED	Sharing and Enabling Environmental Data
SEIFA	Socio-Economic Index for Areas
SEPP	State Environmental Planning Policy
SES	NSW State Emergency Service
SIA	Social Impact Assessment

<i>Name</i>	<i>Description</i>
SISD	Safe Intersection Sight Distance
SPR	Source-Pathway-Receptor
SSD	State Significant Development
SUA	Significant Urban Area
Tamworth CSP	Tamworth Regional Council Community Strategic Plan 2022-2032
Tamworth LALC	Tamworth Local Aboriginal Lands Council
Tamworth LEP	Tamworth Local Environmental Plan 2010
t-CO <sub>2</sub> e pa	Tonnes CO <sub>2</sub> equivalent per annum
TEC	Threatened Ecological Communities
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment
UCL	Urban Centres and Localities
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary Planning Agreement
vpd	Vehicles per Day
vph	Vehicles per hour
WAL	Water Access Licence
WRIA	Water Resource Impact Assessment
WSP	Water Sharing Plans
ZVI	Zone of Visual Influence

## REAP DECLARATION

EIS declaration		
<b>Project details</b>		
Project name	Garoo Solar Farm and Battery Energy Storage System	
Application number	SSD-79747209	
Address of the land	291 Garoo Road, Garoo NSW 2340	
<b>Applicant details</b>		
Applicant name	The Trustee for GreenPulse Solar Farm and BESS Unit Trust	
Applicant address	Suite 906, 821 Pacific Highway, Chatswood NSW 2067	
<i>Details of person by whom this EIS was prepared</i>		
Name	Frazer Bayliss	Sophie Butcher
Address	Level 14 / 207 Kent Street, Sydney NSW 2137	
Professional qualifications	Biology BSc Aquatic Ecology MSc	BSc (hons) Geography and MSc International Planning & Development
<b>Declaration by registered environmental assessment practitioner</b>		
Name	Lucy Baker	
Registration number	142379	
Organisation registered with	Planning Institute of Australia	
Declaration	<p>The undersigned declares that this EIS:</p> <ul style="list-style-type: none"> <li>• Has been prepared in accordance with the Environmental Planning and Assessment Regulation 2021;</li> <li>• Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates;</li> <li>• Does not contain information that is false or misleading;</li> <li>• Addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project;</li> <li>• Identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments;</li> <li>• Has been prepared having regard to the Department's State Significant Development Guidelines - Preparing an Environmental Impact Statement;</li> <li>• Contains a simple and easy to understand summary of the project as a whole, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development;</li> <li>• Contains a consolidated description of the project in a single chapter of the EIS;</li> <li>• Contains an accurate summary of the findings of any community engagement; and</li> <li>• Contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.</li> </ul>	
Signature		
Date	30.01.2026	



## EXECUTIVE SUMMARY

# Garoo Solar Farm and BESS

## ENVIRONMENTAL IMPACT STATEMENT

This summary provides a non-technical overview of the Project and assessment outcomes only and should be read in conjunction with the environmental impact statement (EIS) and supporting technical reports.

**Sustainability is our business**



## What is the Project?

The Garoo Solar Farm and BESS (the Project) involves the construction, operation and decommissioning of a photovoltaic solar facility with a targeted electricity generating capacity of up to 133 MW, a battery energy storage system (BESS) with a capacity of up to 360 MW / 1,440 MWh, and associated infrastructure.

The Garoo Solar Farm and BESS is a renewable energy development that will provide an alternative source of energy generation, support the stabilisation and reliability of electricity supply, and provide strategic and economic benefits to local and regional communities. Once operational, the solar component will provide enough electricity to power approximately 70,000 homes.

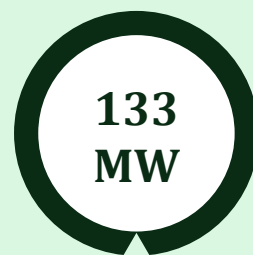
The Project is located in Garoo, NSW, approximately 40 km south of the Tamworth. This land is predominately used for agricultural activities and is situated within the Tamworth Regional Local Government Area.

The Project has gone through a design process that considers maximising the solar power generation, community and stakeholder feedback, and constraints identified during detailed environmental, heritage, hazard and social studies.

The Development Footprint covers approximately 305 ha, which represents the maximum area that will be directly impacted throughout the life of the Project. All Project infrastructure is encompassed within this area.

A temporary Workforce Accommodation Camp (the camp) with capacity for 250 workers is proposed within the eastern section of the Project Area. The camp would be operational for approximately 15 months, and decommissioned at the final stages of construction allowing the final solar arrays to be installed.

The Project is anticipated connect to the national grid via the existing 330 kilovolt (kV) Liddell-Tamworth overhead transmission line.



Solar  
Capacity



Battery  
Storage



Development  
Footprint

## Who we are?

The Trustee for GreenPulse Solar Farm and BESS Unit Trust ('GreenPulse' or the 'Applicant') is a joint venture between Jinko Power Australia Pty Ltd and Bright Path Renewables Pty Ltd.

Jinko Power is a leading global renewable energy company and Bright Path is an Australian-owned renewable energy developer. These organisations have widespread global experience in large-scale renewable projects.

GreenPulse brings expert management in project planning, network connections, renewable generation and financing. The organisation aims to contribute to the transition to a carbon-neutral economy, helping establish a reliable, affordable and clean energy system.

## Project Description



Located at 291 Garoo Road, Garoo.



Development Footprint of 305 ha.



Photovoltaic (PV) solar facility with an estimated capacity of up to 133 MW.



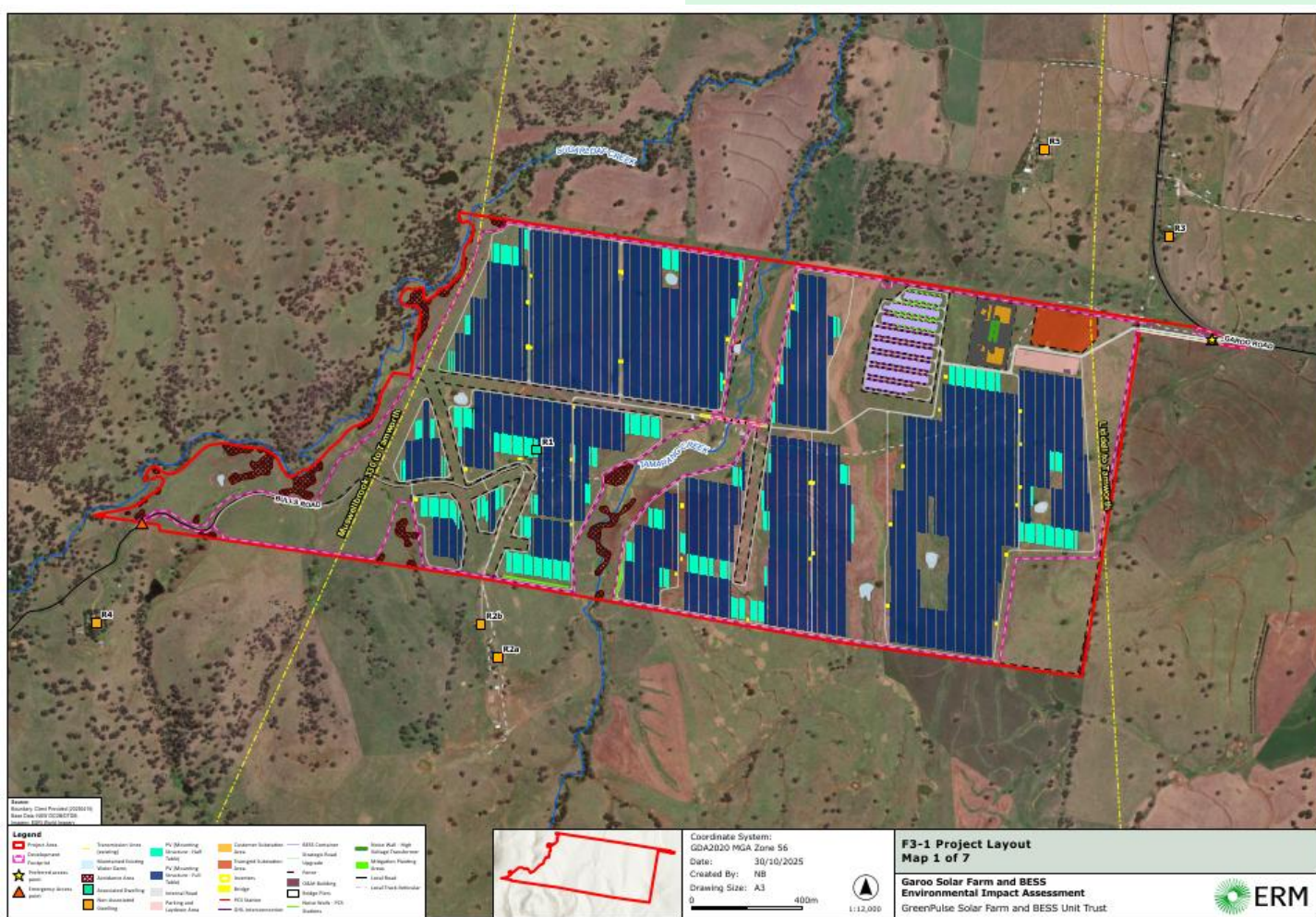
A BESS with a capacity of up to 360 MW / 1,440 MWh.



Temporary construction facilities including temporary Workforce Accommodation Camp for 250 workers



Grid connection via the existing 330 kV Liddell-Tamworth overhead transmission line.




# Why is the Project needed?

Both the Commonwealth and NSW Governments have made commitments to increase renewable energy generation and reduce greenhouse gas emissions. Garoo Solar Farm and BESS will help provide cleaner, cheaper and reliable electricity while reducing greenhouse gas emissions by an estimated 270,000 tonnes of carbon dioxide equivalent per year.



## The long-term, regional benefits of the Project

-  Minimise adverse environmental impacts
-  Recycle and reuse materials where practical and economically feasible
-  Ensure quality, safety and environmental standards are maintained
-  Benefits to local and regional services and infrastructure.
-  Average construction workforce of 180 Peak construction workforce of 250 Operational workforce of 5-10.
-  Benefits to the local economy, through procurement of local goods and services and community benefit programs.

# What is the planning process?

**Garoo Solar Farm and BESS requires approval under both NSW and Commonwealth environmental and planning legislation. Under NSW planning legislation, the Project is State Significant Development (SSD) and therefore requires approval under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).**

The Project may also require assessment and approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to potential impacts on matters of national environmental significance. The Project will be referred under the EPBC Act prior to approval.

An Environmental Impact Statement (EIS) has been prepared to outline the Project, its potential impacts (positive and negative), how these impacts are proposed to be mitigated, managed and offset.

The NSW Minister for Planning (or delegate) or the Independent Planning Commission (IPC) will decide if the Project gets approval to proceed. The IPC will be the approval authority if:

- Public objections to the Project exceed 50;
- Any reportable political donations are made by GreenPulse; or
- If the local Council objects to the Project.





# 01

## Early Consultation

Prior to lodging a development application (DA) for an SSD project, the Applicant must engage with the Department of Planning, Housing and Infrastructure (DPHI). The Applicant must then prepare a Scoping Report to request the Secretary’s environmental assessment requirements (SEARs) for the project. The SEARs will identify the information that must be included in the EIS for the project and the community engagement that must be undertaken.



# 02

## Prepare EIS

The applicant must prepare the EIS in accordance with the SEARS.

The purpose of the EIS is to assess the economic, environmental and social impacts of the project and help the community, government agencies and the consent of authority to make informed submissions or decisions on the merits of the project.



# 03

## Exhibit DA

All SSD DAs must be exhibited publicly for at least 28 days.

This acknowledges the importance of community participation in the SSD process and gives the community a right to have a say on these projects before a final decision is made.



# 04

## Respond to submissions

After exhibition, the Department will publish all submission and ask the applicant to prepare a Submissions Report.

The purpose of the Submissions Report is to give the Applicant a chance to respond to the issues raised in submissions and help the consent authority evaluate the merits of the DA.



# 05

## Assess DA

After publishing the Submission Report, the Department will assess the merits of the DA in accordance and prepare an Assessment Report.

This may include further community engagement, requesting additional information from the applicant, seeking advice from Government agencies and independent experts and preparing recommended conditions of consent.



# 06

## Determine DA

The independent Planning Commission or a delegate of the Minister of Planning will be the consent authority for the DA.

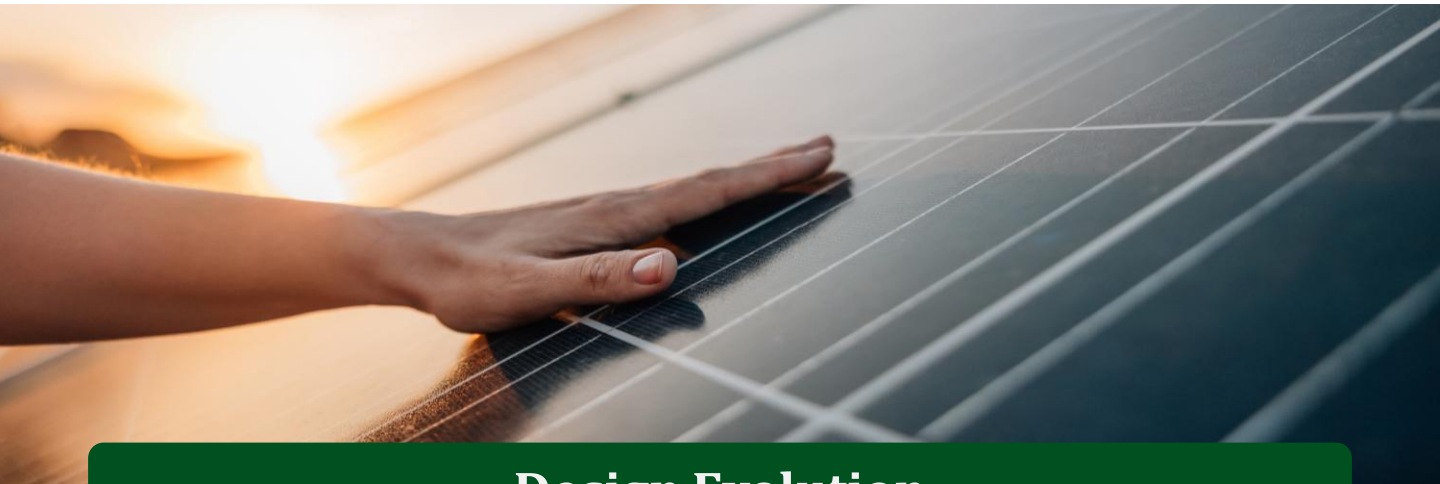
They must evaluate the merits of the DA against the matters in section 4.15 of the EP&A Act and may approve the DA (subject to modifications or conditions) or refuse it.

## Design Strategy

The Project has been designed in consideration of environmental, social and engineering constraints, and significantly, guided by the outcomes of engagement with key stakeholder groups.

Key drivers to minimise and avoid environmental and social impacts included:

- **Avoid** – in the first instance, all efforts were made to avoid potential environmental and social impacts;
- **Minimise** – where potential impacts could not be avoided, design principles aimed to minimise environmental and social impacts, as far as feasibly possible;
- **Mitigate** – mitigation strategies will be implemented to manage the extent and severity of remaining environmental and social impacts; and.
- **Offset** – environmental and social offsets will only be used following all efforts to first avoid, minimise and mitigate environmental impacts



## Design Evolution

**Protect Aboriginal Cultural Heritage Values** – The Project layout was amended to exclude all Aboriginal cultural heritage sites from the Development Footprint, ensuring their preservation.

**Avoid Impact to Surrounding Properties** – The total number solar arrays was significantly reduced so that surrounding residential properties did not experience glint and glare impacts. This reduced the energy generating capacity from 155 MW to 133 MW.

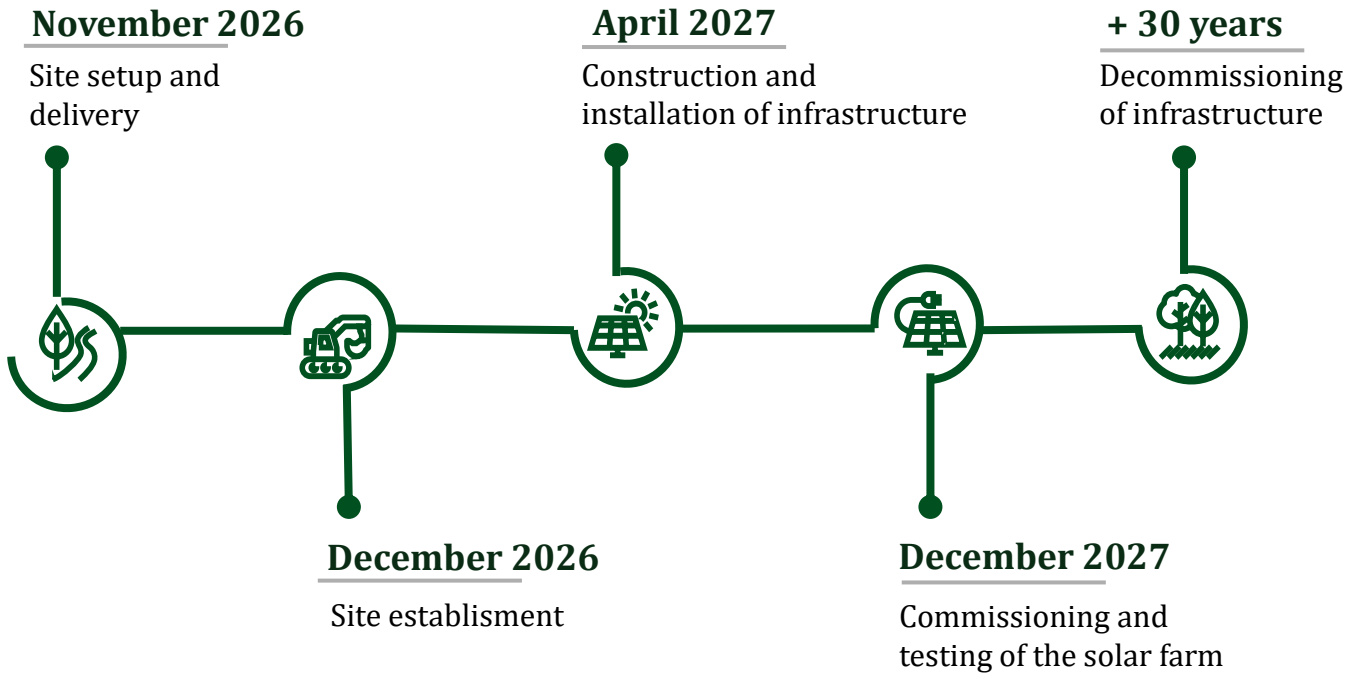
**Minimise Biodiversity Impacts** – Knowledge of biodiversity values has informed design, with the Development Footprint preferentially utilising low conservation value land, demonstrating a significant avoidance of native vegetation, aquatic habitats and local biodiversity value.

**Reduce Operational Noise** – Incorporated noise mitigation technology, such as silencer kits and noise walls, into the design to minimise noise propagating from Project infrastructure.

**Mitigate Flooding Risks** – Amended the location of the BESS to reduce impacts to flood behaviour, ensuring the floodplain is not obstructed and flow behaviour is maintained.

**Support Agricultural Enterprise** – Project design avoids all farm dams, which are to be retained to support co-grazing and agrisolar practices.

# Anticipated Development Timeline



## Community and Stakeholder Engagement.

### Inform, Consult, Involve, Collaborate and Empower.

GreenPulse is committed to ensuring that concerns and comments from the public are considered, and that attempts are made to avoid, minimise, or mitigate potential impacts from the Project where possible. Engagement was based on the principles of authenticity, responsiveness and transparency, and underpinned by the International Association of Public Participation (IAP2) Quality Assurance Standard as the engagement best practice guideline

More than 150 engagement interactions have been recorded since Project inception. These engagements have been facilitated through various activities, including community information events, letters, meetings, emails and phone calls. Additionally, a Project website has been established to provide Project updates and respond to Project enquiries:

Project Website: [GreenPulse - Garoo Solar Farm and BESS](#)

Throughout the engagement activities, the Project development team received feedback on a variety of issues from the community and regulators. This feedback has considered in Project design and evolution.

GreenPulse recognises the importance of consistent, targeted and meaningful engagement. It will continue to create opportunities for stakeholders and the local community to provide input and feedback throughout the planning approval process, construction and operations.

All interactions to be recorded in GreenPulse's stakeholder and feedback database.

# Biodiversity

The Project has been designed to be primarily located on non-native grasslands. The extent of native vegetation is 15.73 ha, with a single Plant Community Type (PCT) identified: PCT 599 - *Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion*. This PCT is associated with a single Threatened Ecological Community - *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. Four threatened species and two Serious and Irreversible Impact (SAII) entities are also potentially present.

Despite avoidance and minimisation principles being applied, native vegetation and associated habitats will be directly impacted. In accordance with the Biodiversity Assessment Method (BAM), ecosystem credits and species credits would be required to offset the direct impact of the Project:

- 1.68 ha of PCT 599;
- 0.11 ha of habitat for Bluegrass (*Dichanthium setosum*), Finger Panic Grass (*Digitaria porrecta*), Eastern Cave Bat (*Vespadelus troughtoni*) and Eyebrights (*Euphrasia arguta*)

Residual and indirect impacts that may occur because of the Project include introduction of pest species, increased predation, reduced viability of habitat, and fertiliser drift.



Impacts to biodiversity have been avoided or minimised through the design process. By refining the Development Footprint and relocating infrastructure, with **approximately 95 % of the Project situated on low conversation value land**, demonstrating a **significant avoidance outcome for locally occurring biodiversity values** and maintaining functionality.

The Development Footprint has **reserved opportunities for improved function of habitat, retaining areas of functional native vegetation, scattered trees and riparian habitats**. This will maintain ecological connectivity, reduce edge effects, and support long-term habitat viability for native flora and fauna species.



**Biodiversity Management Plan.**



**Environmental Sensitive 'No-Go Zones'**



**Ongoing monitoring of threatened species and habitat**

# Aquatic Ecology

The Project Area includes semi-permanent and permanent aquatic habitat provided by Sugarloaf Creek, Tamarang Creeks and existing agricultural dams. These features are almost entirely avoided through Project design, with buffers incorporated to prevent direct disturbance and safeguard aquatic ecology values.

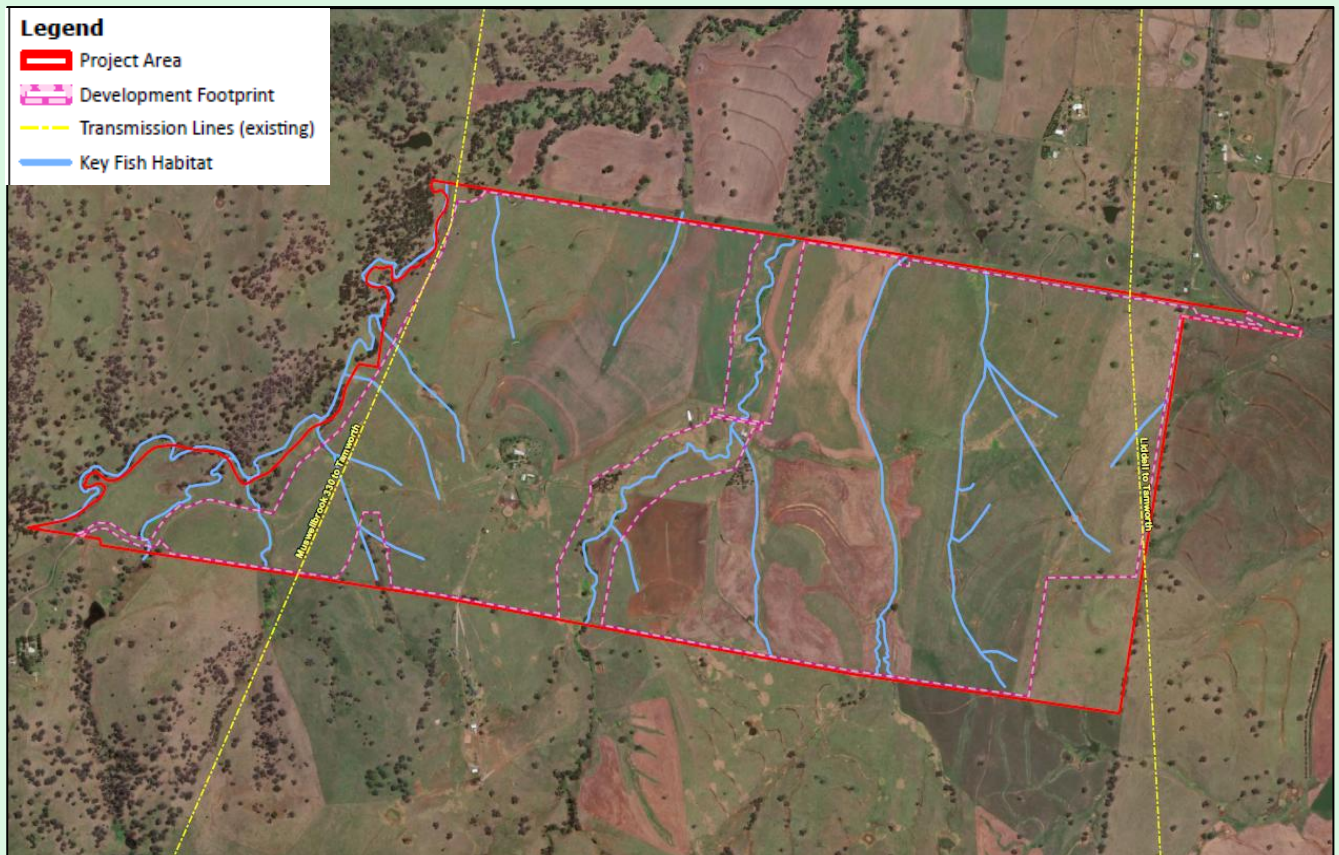
Despite avoidance and minimisation principles being applied, a small area of Key Fish Habitat will be impacted. This is limited to:

- 180 m<sup>2</sup> of an ephemeral drainage line, that has no aquatic habitat features and likely only carries water after rainfall; and
- 25 m<sup>2</sup> of Tamarang Creek.

While Sugarloaf Creek may provide some marginal potential habitat for the endangered Southern Purple Spotted Gudgeon (*Mogurnda adspersa*), no direct or indirect impacts threatened aquatic species are likely to occur.

Potential indirect impacts are primarily associated with erosion and sedimentation during construction and decommissioning. These impacts are expected to be negligible with the implementation of appropriate management and monitoring measures.

**The Project will establish buffer zones, rehabilitate impacted riparian vegetation, ensure design compliance with relevant policy, and offset unavoidable impacts to Key Fish Habitat. On this basis, the Project is unlikely to result in a significant impact on aquatic ecological values.**



# Aboriginal Cultural Heritage

**ERM and GreenPulse would like to acknowledge the Traditional Owners of the Tamworth region and pay respects to their Elders past, present, and emerging. We acknowledge and respect their Indigenous knowledge systems and recognise continuing connection to lands, waters, culture, and community.**

The Project is located in the Tamworth Local Aboriginal Land Council.

An Aboriginal cultural heritage assessment has been prepared to assess the potential impacts of the Project on Aboriginal cultural heritage. Cultural heritage values for the Project Area were identified through detailed desktop investigations, consultation with local Aboriginal communities, and an aboriginal heritage survey. All Registered Aboriginal Party's (RAPs) were invited to provide feedback on cultural heritage significance, with a total of 12 RAPs assisting with the heritage survey.

Thirteen sites of Aboriginal cultural heritage value are located with the Project Area, comprises of Culturally Modified Trees, Artefacts, and a Hearth. GreenPulse has redesigned the design to ensure **all Aboriginal heritage sites are entirely excluded from the Development Footprint**. As such, **Aboriginal cultural heritage sites are preserved and protected**.

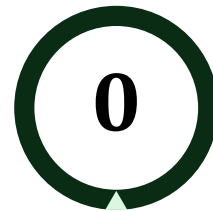
An Aboriginal Cultural Heritage Management Plan will be developed prior to construction in consultation with the RAPs and DPHI. This will record and describe the processes and procedures required to be implemented regarding Aboriginal cultural heritage.



**RAPs  
Consulted**



**Preserved Aboriginal  
Heritage Sites**



**Impacted  
Sites**

# Historical Heritage

There are no registered historical heritage sites, places or properties within the Project Area listed on relevant statutory heritage databases.

Ceramic and glass sherds were discovered near a now-demolished agricultural hut. However, it is considered unlikely that significant subsurface remains of the hut or any other insubstantial agricultural features are well preserved or offer significant research significance.

**As such, the Project Area has low historic heritage value, and the Project will have negligible archaeological impact.**

# Noise

A Noise Impact Assessment has been prepared to assess the potential noise impacts associated with the construction and operation of the Project

The background noise levels in the vicinity of the Project is low, typical of a rural environment. There are 19 residential properties within 2 km of the Project, the closest being 163 m from the Project boundary.

Modelling of worst-case scenarios determined five residential properties may experience construction noise that exceeds the Interim Construction Noise Guideline 'noise affected' management level. However, none exceed the ICNG 'highly affected' management level, will only occur for a short duration, and can be effectively managed. No noise impacts are expected as a result of the temporary workforce accommodation.

Noise mitigation measures, including silencer kits, noise reduction kits, and noise walls (L- and C-shaped), have been incorporated into the design to mitigate noise propagating from Project infrastructure. This ensures that noise levels at sensitive receivers is compliant with relevant noise trigger levels, as outlined in the NSW Noise Policy for Industry.



**Construction Noise and Vibration Management Plan**



**Negligible traffic noise impacts**



**Low operational noise levels**



**No sleep disturbance**



**Managed noise levels.**

# Landscape and Visual



**Existing landscape absorbs visual impacts**



**Screen planting to fragment views**



**Glint and glare impacts avoided**



**Design principles and best practice guidelines.**

A Landscape Character and Visual Assessment considered the potential visual impacts on public receptors within 2.5 km and private receptors within 4 km from the Development Footprint.

A total of nine private residential properties and two public viewpoints have potential line of sight. Further assessment identified only two private residences have the potential to experience visual impacts that require mitigation. Visual impact of associated infrastructure including the temporary workforce accommodation camp is considered low due screening topography and to the existing transmission lines.

Overall, the existing landscape has the ability to absorb the Project with low degree of visual impacts, with vegetation screening implemented to mitigate visual impact to the two sensitive residential properties.

All potential glint and glare impacts have been avoided by reducing the number and area of solar arrays, and implementing an alternate tracking pattern.

## Land and Agriculture

**The Project Area is currently used for livestock grazing and small-scale cropping. A Land and Agriculture Impact Assessment has been prepared to evaluate the impacts of the project on agricultural resources, which included a soil verification survey.**

- **Agricultural Land:** The Project Area is characterised by moderate to low capability land, with no Biophysical Strategic Agricultural Land present. Agrisolar will be implemented, limiting loss of agricultural practice. Overall, **loss of agricultural land is negligible.**
- **Agricultural Productivity:** Due to the scale of the existing operations comparative to the broader region, impact on local, regional and state agricultural productivity will be negligible.
- **Erosion and Sedimentation:** Dispersion risk across the Project Area is low, with no significant erosion and sedimentation issues identified. Impacts of earthworks can be addressed through erosion and sediment control measures.
- **Biosecurity:** Construction activities, intensified vehicle movements and imported materials within the Project Area will increase biosecurity risks. However, management plans will protect the economy, environment and community from pests, diseases and weeds.
- **Livestock Disturbance:** It is unlikely that livestock will be continuously exposed to adverse noise, and traffic management will mitigate noise associated with vehicles. Air quality impacts anticipated to be minor.
- **A Land Use Conflict Risk Assessment:** Visual amenity, property value, bushfire risk, biodiversity value, and biosecurity are potential conflicts areas that require further management.

## Contamination

A Preliminary Site Investigation was undertaken to identify areas of potential environmental concern and potential sources of contamination. Potential sources of contamination identified were associated with historical activities, general agricultural land use practices, potential chemical leaks, degradation of agricultural infrastructure and the domestic septic tank.

A Detailed Site Investigation is recommended to further assess the former dip site, former blacksmiths workshop, former power station, and abandoned underground storage tank. A Sampling and Analysis Quality Plan has been developed and is to be implemented prior to construction.

The potential contamination findings are not considered to limit the suitability of the Project Area for development.

**A Construction Environmental Management Plan, Operational Environmental Management Plan, and relevant sub-plans will be implemented to mitigate potential impacts to land and agriculture.**

# Water Resources

**The Project is located in the Namoi Catchment, and features two permanent creeks, ephemeral creeks, drainage lines and farm dams. A Water Resources Impact Assessment has been prepared to evaluate impacts to surface and ground water, and includes a developed-case flood model to assess how flooding may be impacted by Project infrastructure.**

**Water Supply:** The Project proposes to purchase water tanks and truck in water to support the demands, with nearby Councils confirming they can service maximum demand. Use of water from existing water sources from within the Project Area are not anticipated.

**Watercourse Characteristics:** The Project has been designed to avoid significant modification or realignment of natural watercourses, with channel geometry and natural drainage patterns maintained where practicable, and new watercourse crossings limited. The proposed bridge over Tamarang Creek will be designed to minimise disturbance and preserve natural flow. Existing farm dams will be retained, ensuring no induced changes to local flow behaviour.

**Waterfront Land:** Design optimization would ensure impacts are negligible.

**Flooding:** The Project layout has been developed to minimise interaction with the baseline flood extents. Developed Scenario Models determined predicted flooding increases within the Project Area associated with the Project infrastructure are typically minor, and with negligible erosion or inundation risks are anticipated with appropriate design and controls. Potential for prolonged ponding and increased flood depths associated with localised blockages at the Tamarang Creek crossing are expected to be mitigated during detailed design.

**Water Quality:** The project presents potential risks, including erosion, sedimentation, and pollution of hydrocarbons, wastewater, concrete by-products and tannins. However, implementation of Construction Erosion and Sediment Control Plan and best practice guidelines, impact is considered negligible.

**Groundwater:** The Project is not anticipated to impact groundwater levels, flow direction, GDEs, or existing groundwater users. Although unlikely, if use of existing groundwater bores is deemed necessary to support construction, the Applicant will obtain applicable WALs, work approval and water use approvals prior to extraction.



# Transport and Traffic

**Vehicles will access the Project via Garoo Road, with heavy vehicles approaching from the south, and only light vehicles approaching from the north. Larger Project material will be delivered from the Port of Newcastle. A Traffic Impact Assessment has been prepared to evaluate impacts.**

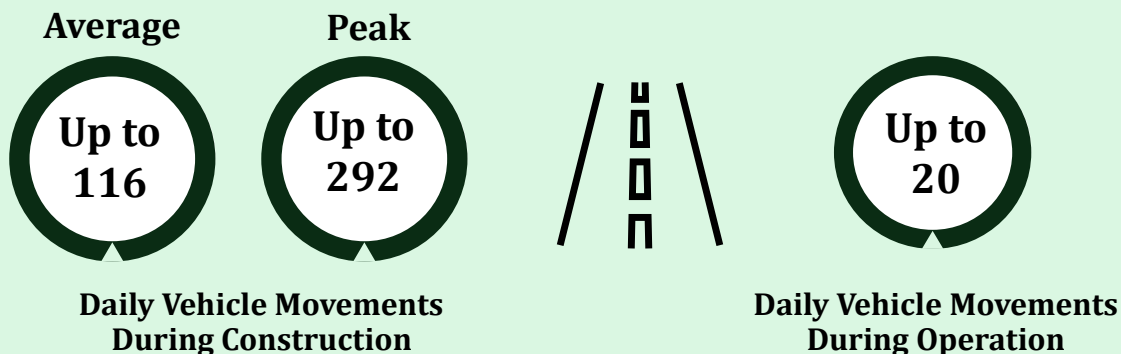
The peak traffic generating potential of the Project is during construction. It is anticipated that during peak construction, the Project would generate up to 108 light vehicles and 156 heavy vehicle trips per day. This would mainly be during peak morning / evening hours, when construction workforce commutes to and from the Project. Assessment of the transport route and key intersections determined that **construction traffic is expected to have a minimal impact on the operation of the road network.**

Most heavy vehicles would not create daily trips, and high-risk Over Size Over Mass (OSOM) vehicles will contribute the smallest percentage of vehicles accessing the Project. Heavy vehicles will travel to the Project from the Port of Newcastle, operating outside of peak periods. **Consultation with Transport for NSW Special Permits Unit confirmed that the vehicle combination and load can be accommodated on the State Road Network.**

Vehicle movements associated with the establishment, operation and decommissioning of the temporary Workforce Accommodation Camp are not expected to have any material impact on the operation of the road network as they would generally occur outside of peak times and would result in a lower level of traffic than the peak construction period volumes. The camp has sufficient parking to accommodate, with no parking to occur on the nearby road network

During operation, the Project is anticipated to generate minimal levels of traffic, anticipated to be approximately 20 vehicle movements per day. Operation of the Project would have a **negligible change to the traffic environment.**

Assessment of the sight distance determined that vehicles can **safely enter the road network** from the Project Area and can **safely enter the State Road Network** at New England Highway, as per Austroads requirements.



The only required road upgrade is a Basic Right Turn (BAR) and a Basic Left Turn (BAL) treatment at the Garoo Road/Site Access intersection.

Prior to the commencement of construction, a **Traffic Management Plan** will be prepared in consultation with Transport for NSW and Tamworth Regional Council to make sure road safety and road network operations are maintained. The community will be consulted on vehicle movements to assist in managing the traffic impacts.

# Hazards

## Bush Fire

A Bush Fire Risk Assessment has been prepared to potential hazards and risks associated with the Project and its proximity to bushfire prone land.

The Project does not have a history of bush fire. The closest recorded fire event occurred over 5 km northwest, and was confined to a mountain range.

The Project would be situated on Vegetation Category 3 Land, which is considered medium risk and 'Moderate' Fire Danger Rating. Potential fire runs of more than 20 km extend in all directions, however surrounding topography would slow down the spread of any fires from the south or west.

Typically, bush fires within the region are ignited by lightning strikes or are human-induced. The plant and equipment that would be required for the Project are potential sources of ignition.

Overall, the risk that the Project will cause a bush fire is considered low provided that appropriate protection measures are applied. These will be a combination of complementary strategies, all of which are required to provide the best possible protection outcome for the solar farm and the community. These notably include:

- Low fuel state would be maintained across the Project Area;
- A minimum 10 m Asset Protection Zone established around the perimeter of the Development Footprint;
- Dedicated water storage and fire suppression equipment;
- Workforce Accommodation Camp will meet varied performance criteria; and
- Preparation of a Bushfire Emergency Management and Operations Plan

## Preliminary Hazard Analysis

The PHA identified that potential hazard events associated with the Project included fires, explosions, and release of toxic gases. However, distance to the nearest residential dwelling (including the workforce camp) is adequate to address risks.

The distance between electromagnetic field generating infrastructure (e.g. substation) and dwellings is significant, and consequently EMF strengths experienced at the dwellings will be negligible.

Design, installation, commissioning, operation and maintenance of the equipment would be conducted as per relevant Australian Standards.

## Air Quality & Waste

### Air Quality

Impacts to air quality would mainly be associated with construction activities and limited to localised dust emissions; and vehicle emissions. The proposed mitigation measures will ensure impacts are minimal.

The Project would reduce greenhouse gas emissions by 270,000 tonnes of carbon dioxide equivalent

### Waste Management

The Project will adopt the waste hierarchy, to encourage the most efficient use of resources, as well as reduce costs and environmental harm.

Where possible, waste will be recycled and reused, or disposed of at a licensed waste facility.

A Waste Management Plan be prepared in accordance with relevant guidelines and in consultation the Council

# Economics

**The Project will drive economic activity, benefiting both the local, regional and broader NSW economy during the construction and operation phases. GreenPulse proposes to work in partnership with Tamworth Regional Council and the local community so that, as far as possible, the benefits of the projected economic growth in the region are maximised.**

Increased economic activity will arise from increased employment, population and expenditure in the region. The annual direct and indirect impacts of the Project on the regional economy (during construction and operation) are estimated at up to:



### Regional Economy:

- \$591M in output
- \$174M in value-added
- \$38M in household income
- 261 direct and indirect FTE jobs

### NSW Economy:

- \$674M in output
- \$210M in value-added
- \$43M in household income
- 295 direct and indirect FTE jobs

These impacts may result in increase pressures on amenities, and wages, and exacerbate labour shortages. GreenPulse intends to collaborate closely with local councils and communities to mitigate the above risks associated with an increase in economic activity. This will include establishment of a benefit sharing scheme.

# Social

**A Social Impact Assessment has been prepared to ensure that Project decision making is well-targeted and that any mitigation strategies are effectively tailored to the specific needs of the community.**

A social baseline was established through detailed analysis of demographic profiles, economic activities, housing conditions and community well-being . This identified economic diversification may be required, and that socio-economic conditions may be declining.

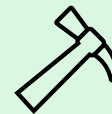
The key drivers of social change resulting from the Project that may affect communities:

- Procurement opportunities for local/regional Businesses;
- Employment opportunities for the local workforce; and
- Changes to amenities ad landscape.

A range of social management and mitigation measures to be adopted for the Project, ensuring social benefits are maximised.



**Workforce Accommodation Plan**



**Local Employment Plan**



**Monitoring and continued consultation.**



**Benefit sharing scheme**

# Project Conclusions

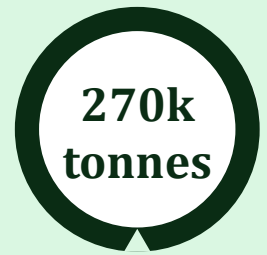
**The Project will provide a significant contribution both Australian and NSW greenhouse gas emissions reduction targets. The Project has been carefully designed and sited to minimise environmental impacts and in consultation with the local community and relevant stakeholders. The potential residual environmental and social impacts will be managed through proposed mitigation and management measures.**

The Project will not result in significant impacts on the environment, or the local community and any impacts that may result would be outweighed by the strategic and economic benefits that the Project will provide.

The Project will:

- Assist the Federal and NSW Governments to fulfil their targets and policies to increase renewable energy supply and reduce carbon emissions
- Assist in meeting energy demand as part of the market transition from traditional energy sources
- Deliver economic benefits to regional and local communities

The Project represents a positive addition to the local and wider NSW economy and the National Energy Market. Through the implementation of proposed mitigation and management measures, it is considered that this Project is consistent with the objects of the EP&A Act and is in the public interest.



Reduced Greenhouse Gas emissions



FTE Construction Jobs



Regional Economic Output



## 1. INTRODUCTION

The Trustee for GreenPulse Solar Farm and BESS Unit Trust ('GreenPulse' or the 'Applicant') proposes to construct, operate, maintain and (where relevant) decommission the Garoo Solar Farm and Battery Energy Storage System (BESS) (the 'Project'), a renewable energy development located in the rural locality of Garoo, New South Wales (NSW).

The Project is declared a State Significant Development (SSD) under Clause 2.6(1) of the *State Environmental Planning Policy (Planning Systems) 2024* (Planning Systems SEPP). The Applicant is seeking development consent for the Project under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

Environmental Resources Management Pty Ltd (ERM) was engaged by the Applicant to prepare an Environmental Impact Statement (EIS) to support the SSD consent process. This EIS covers all aspects of planning, construction, operation, decommissioning, rehabilitation and environmental management for the Project. These aspects address the:

- Project-specific Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning, Housing and Infrastructure (DPHI) (SSD-79747209, dated 04 March 2025);
- Large-Scale Solar Energy Guideline (NSW DPHI, 2022a) and supporting Technical Supplement for Landscape Character and Visual Impact Assessment (NSW DPHI, 2022b);
- Requirements of other State Government agencies;
- Requirements of Commonwealth government agencies;
- Matters raised by Tamworth Regional Council; and
- Matters raised during the community engagement process.

The following appendices provide critical information relating to the EIS:

- **Appendix A:** Outlines the SEARs and where they have been addressed within the EIS and specialist assessment reports;
- **Appendix B:** Provides a concise summary of all management and mitigation measures proposed for the Project;
- **Appendix C:** Includes a statutory compliance table that shows how relevant statutory requirements have been addressed in the EIS; and
- **Appendix D:** Features a community engagement table that details how issues raised by the community during engagement have been addressed in the EIS.

### 1.1 THE APPLICANT

The Trustee for GreenPulse Solar Farm and BESS Unit Trust is a joint venture between Jinko Power Australia Pty Ltd (Jinko Power) and Bright Path Renewables Pty Ltd (Bright Path). Jinko Power is a leading global renewable energy company specialising in the investment, development and operation of solar power plants and Bright Path is an Australian-owned renewable energy developer committed to promoting the widespread adoption of renewable energy and fostering a green, low-carbon future. These organisations have widespread experience in large-scale renewable projects in Australia and internationally across Europe, Asia and Africa.

Operating as an Australian developer of utility-scale solar and battery storage systems, GreenPulse brings expert management in project planning, network connections, renewable generation and financing. Aligned with the NSW Government's ambitious targets to halve emissions by 2030 and achieve net zero by 2050, the organisation aims to contribute to the transition to a carbon-neutral economy, helping establish a reliable, affordable and clean energy system.

The Applicants name, Australian Business Number (ABN) and address (trading as The Trustee for GreenPulse Solar Farm and BESS Unit Trust) are listed below:

- **Applicant name:** The Trustee for GreenPulse Solar Farm and BESS Unit Trust;
- **ABN:** 93 705 623 303; and
- **Address:** Suite 906, 821 Pacific Highway, Chatswood, NSW 2067.

## 1.2 PROJECT OVERVIEW

The Project is situated at 291 Garoo Road, Garoo, approximately 40 kilometres (km) (by road) south of Tamworth and 370 km northwest of Sydney. Located entirely within the Tamworth Regional Local Government Area (LGA), the Project Area extends across approximately 369 hectares (ha). This comprises 17 freehold lots across three Deposited Plans (DPs). The land is currently used for agricultural activities, predominantly livestock grazing and irrigated cropping. The regional locality of the Project is presented in **Figure 1-1**.

The Project will involve the construction, operation, maintenance and, where relevant, decommissioning of a solar farm and associated infrastructure, including:

- Solar array, with an estimated generated capacity of up to 133.76 Megawatts (MW) alternating current (AC);
- Electrical reticulation infrastructure, including a centralised large-scale BESS with a storage capacity of 360 MW / 1,440 Megawatt hours (MWh);
- Permanent associated and ancillary infrastructure; and
- Temporary construction facilities.

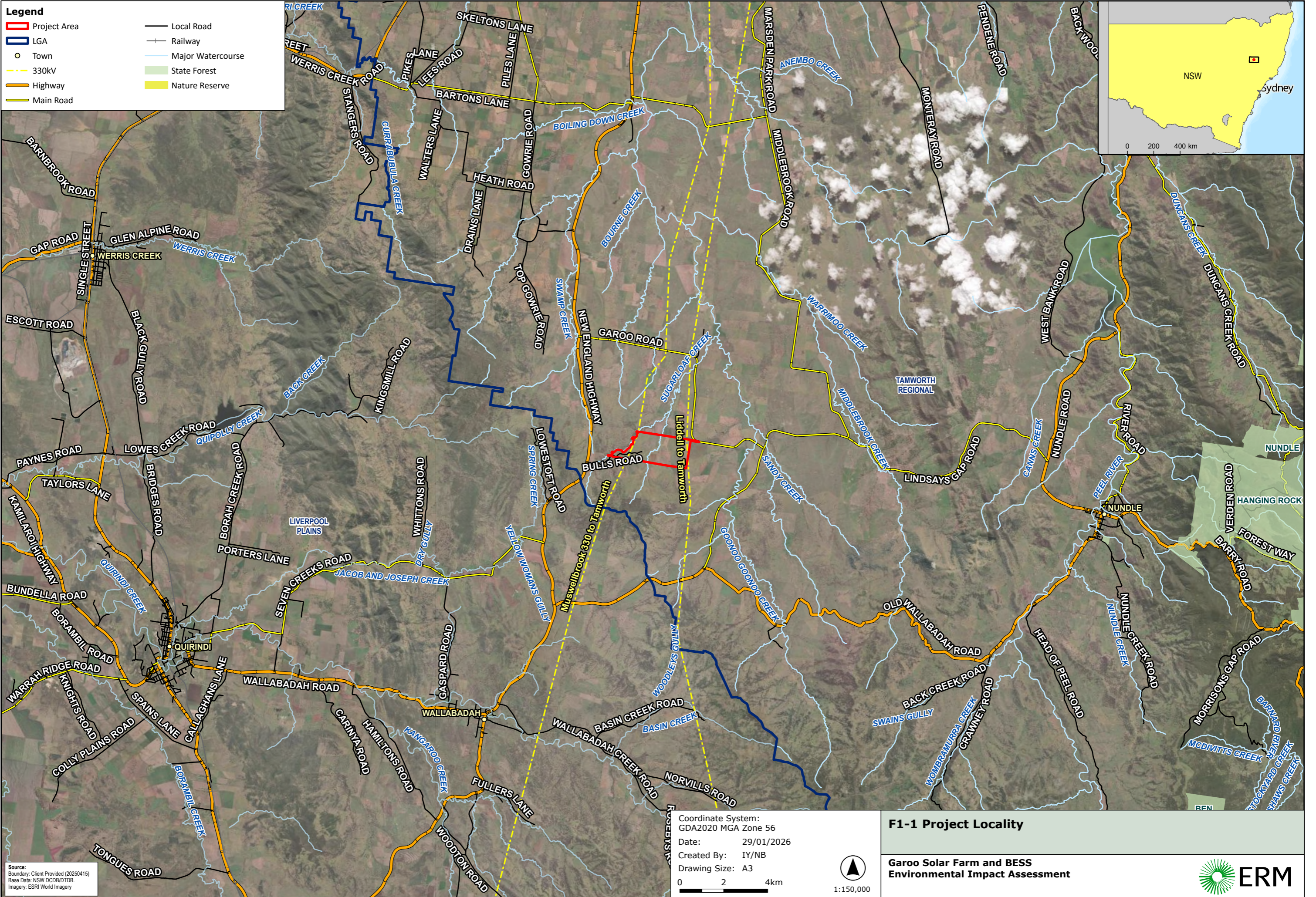
The Project proposes to connect to the national grid via the existing 330 kilovolt (kV) Liddell-Tamworth overhead transmission line, which traverses the Project Area in a general north-south alignment. Once operational, the solar component will provide enough electricity to power approximately 70,000 homes and the BESS will store up to four hours of electricity, released during peak demand to assist reliable power supply and grid stability.

The Development Footprint is approximately 305.43 ha. This represents the maximum area that will be directly impacted throughout the construction and operational life of the Project until decommissioning.

The final Project layout is subject to further design development and refinement. If the final Project design extends outside of the Project Area assessed in this EIS, assessment of additional impacts would be detailed in an Amendment Report (prior to determination) or Modification Report (after determination).

Subject to the necessary approvals, the Applicant anticipates construction of the Project to commence in December 2026 and be operational by April 2028.

Further detail of Project elements and design are provided in **Section 3**, with the layout presented in **Figure 3-1**.



**Legend**

- Project Area
- LGA
- Town
- 330kV
- Highway
- Main Road
- Local Road
- Railway
- Major Watercourse
- State Forest
- Nature Reserve



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DDCB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
 Drawing Size: A3  
 0 2 4km



**F1-1 Project Locality**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**

### 1.3 PROJECT BACKGROUND

The Applicant first proposed the Project in the mid-2024 and undertook an initial assessment of environmental, social, soil and visual impacts for the Project in late-2024. The findings of these preliminary assessments were used to determine the Project layout and design.

The Applicant subsequently prepared a Scoping Report (ERM, 2025), which was submitted to DPHI in January 2025. Project-specific SEARs were issued on 4 March 2025.

Since SEARs were issued, the Applicant has continued stakeholder engagement and conducted further technical assessments to inform this EIS. This has resulted in refinements to the Project, resulting in the Project design presented in this EIS. A summary of Project evolution is provided in **Table 1-1**, with further detail on design evolution and impact minimisation provided in **Table 2-6** and **Section 2.8.4**.

**TABLE 1-1 PROJECT EVOLUTION**

Attribute	Scoping Report	EIS
Project Area	368 ha	369 ha
Development Footprint	319.5 ha	305.43 ha
Maximum Generation Capacity	155 MW <sub>AC</sub>	133.76 MW <sub>AC</sub>
BESS Storage Capacity	360 MW / 1,440 MWh	360 MW / 1,440 MWh

### 1.4 PROJECT OBJECTIVES

The objectives of the Project are to:

- Support the transition in the energy sector away from a centralised system of large fossil fuel electricity generation, towards a decentralised system of widely dispersed, renewable energy production;
- Provide alternative, renewable energy production to offset the forecast retirement of NSW coal-fired power stations (refer **Section 2.1**);
- Contribute to meeting increasing energy demand in NSW and throughout the National Electricity Market (NEM);
- Provide dispatchable energy and grid stability through the proposed grid-scale BESS;
- Contribute to Greenhouse Gas (GHG) emission reductions, supporting the NSW and Australian Government net zero commitments;
- Contribute materially to NSW and Federal Government's renewable energy targets;
- Deliver economic benefits to local communities, through local investment, provision of direct and indirect employment opportunities and additional income streams for associated landholders;
- Provide direct and indirect benefits to the regional and state-wide economy;
- Provide benefits to regional infrastructure and services through the establishment of a 'Community Benefit Fund' (CBF) and a Voluntary Planning Agreement (VPA);
- Minimise adverse environmental impacts and offset residual impacts;

- Recycle and reuse materials where practical and economically feasible;
- Ensure quality, safety and environmental standards are maintained; and
- Liaise and work with the community and all potentially affected stakeholders in the identification, mitigation and/or monitoring of any potential environmental effects.

## 1.5 RELATED DEVELOPMENT

The Project is not specifically part of any broader development.

## 1.6 RESTRICTIONS OR COVENANTS

A title search was undertaken for the Project Area. Restrictions and covenants that apply to the Project Area are detailed in **Table 1-2**.

**TABLE 1-2 RESTRICTIONS AND COVENANTS**

Lot/DP	Restrictions or Covenants
<ul style="list-style-type: none"> <li>• Lots 14, 15, 16, 19, 20, 22 DP755341</li> <li>• Lots 2, 4, 6, 7 DP1108524</li> </ul>	<ul style="list-style-type: none"> <li>• Land Excludes minerals and is subject to reservation and conditions in favour of the Crown (Crown Grants)</li> </ul>
<ul style="list-style-type: none"> <li>• Lots 1, 2, 17 DP755341</li> <li>• Lots 3, 5 DP1108524</li> </ul>	<ul style="list-style-type: none"> <li>• Reservations and conditions in the Crown Grant(s).</li> </ul>
<ul style="list-style-type: none"> <li>• Lot 2, 3 DP1108524</li> <li>• Lots 38, 39 DP755341</li> </ul>	<ul style="list-style-type: none"> <li>• Land excludes the roads.</li> </ul>
<ul style="list-style-type: none"> <li>• Lots 2, 3 DP1108524</li> <li>• Lots 2,14,15 DP755341</li> </ul>	<ul style="list-style-type: none"> <li>• Easement (H706368) for transmission line 60.96 metres (s) wide. Easement vested in NSW Electricity Authority (0730033).</li> </ul>
<ul style="list-style-type: none"> <li>• Lots 16, 19 DP755341</li> </ul>	<ul style="list-style-type: none"> <li>• Easement (P192689) for transmission line 60.96 metres (s) wide. Easement vested in NSW Electricity Authority (D723048).</li> </ul>

## 2. STRATEGIC CONTEXT

### 2.1 TRANSITION TO RENEWABLE ENERGY

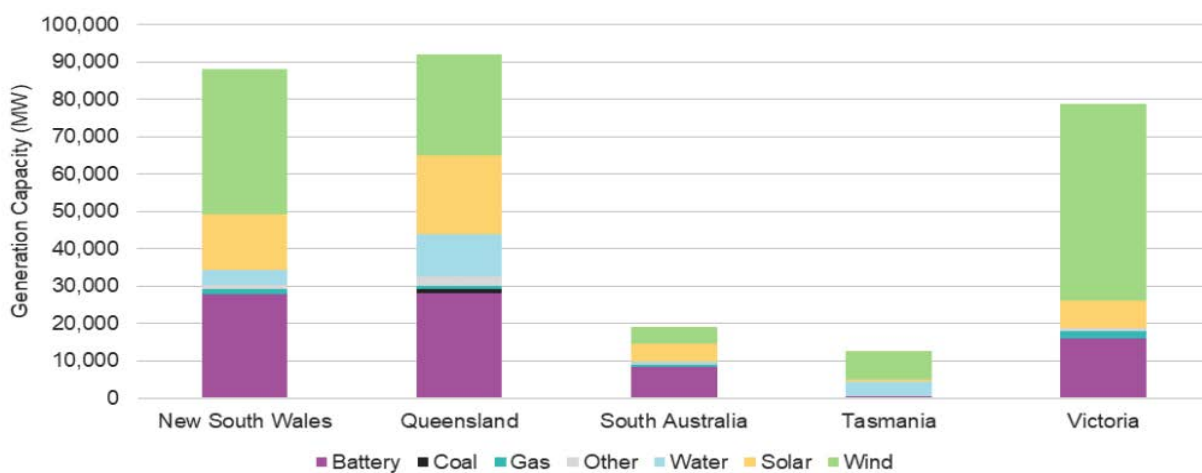
The Australian Energy Market Operator (AEMO) Integrated System Plan (ISP) 2024 (AEMO, 2024a) highlights the planned retirement of all existing NSW coal fired electricity generation facilities by 2040, noting that Lidell Power Station was closed in 2023. A further three, which account for 6 Gigawatts (GW) of generation (approximately 65% of NSW’s electricity) are planned to be retired by 2035. Further details on these power stations and the planned closures are presented in **Table 2-1**.

**TABLE 2-1 NSW RETIRING COAL-FIRED POWER STATIONS**

Operating Company	Power Station	Energy Generation	Expected Closure Date <sup>1</sup>
AGL Energy	Lidell	1.26 GW	Closed 2023
Origin Energy	Eraring	2.92 GW	2027
Delta Energy	Vales Point B	1.32 GW	2033
AGL Energy	Bayswater	2.64 GW	2030 - 2033
Energy Australia	Mount Piper	1.4 GW	2040

These power stations currently provide around three quarters of NSW’s electricity supply. The ISP states that due to the imminent retirement of a significant number of NSW coal-fired power plants, the NEM will require an almost nine-fold increase in renewable energy generation to replace the retiring power stations (AEMO, 2024a). Renewable energy developments will be vital in offsetting the impacts of the planned retirement of these power plants.

The AEMO’s 2024 Electricity Statement of Opportunities (ESOO) (AEMO, 2024b) notes the substantial pipeline of renewable projects in various stages of development. **Figure 2-1** shows the proposed projects across the NEM by type of generation or storage.



**FIGURE 2-1 PROPOSED ENERGY PROJECTS BY NEM REGION (AS OF JULY 2024)**

Source: AEMO’s 2024 Electricity Statement of Opportunities (AEMO, 2024b)

<sup>1</sup> (AEMO, 2024b)

## 2.2 AUSTRALIAN GOVERNMENT STRATEGIES, POLICIES AND PLANS

The Australian Governments have committed to a range of strategies, policies and plans to minimise emissions of GHGs that are implicated in exacerbating climate change. Reducing GHG emissions through replacement of traditional energy sources with renewable energy will assist to minimise the effects of climate change, benefitting current and future generations in line with the principles of Ecologically Sustainable Development (ESD).

The following summarises commitments made by the Australian Government:

- 43% GHG emissions reduction on 2005 levels by 2030;
- Net-zero by 2050; and
- 82% renewable energy generation (Australia-wide) by 2030.

These commitments are legislated through the *Climate Change Act 2022* and also form part of Australia's Nationally Determined Contributions to the United Nations Framework Convention on Climate Change (UNFCCC).

As a member state of the United Nations (UN) Australia committed to the Paris Agreement at the 21st UN Climate Change Conference of Parties (COP21) and has continually committed to strengthening its GHG emissions reduction targets at subsequent COPs (notably COP26), resulting in the national targets outlined above. Australia has also pledged to help triple the world's renewable energy capacity and double its energy efficiency by 2030 (COP28), and to increase global energy storage capacity to 1,500 GW by 2030 (COP29). Increasing renewable energy generation and storage in Australia is critical to meeting these targets.

Australia has also endorsed the UN 2030 Agenda for Sustainable Development (UN, 2015). This comprises 17 Sustainable Development Goals (SDGs) and 196 Targets, covering measures towards improvements to economic, social and environmental sustainability.

Of relevance to the Project are Goal 7<sup>2</sup> and Goal 11<sup>3</sup>, which focus on sustainable energy production and improvement of environmental amenity (e.g. air quality) respectively.

The Australian Government commitments are facilitated by a range of initiatives and targets and are administered by several government-owned entities. These include the:

- Clean Energy Finance Corporation – the world's largest government-owned 'green bank', which has invested over \$12 billion in clean energy projects;
- Australian Renewable Energy Agency which has committed more than \$2 billion in funding to over 650 renewable energy projects; and
- Clean Energy Regulator (CER), which manages several programs to accelerate carbon abatement, including the Renewable Energy Target (RET), National Greenhouse and Energy Reporting Scheme, Safeguard Mechanism and Guarantee of Origin Scheme.

The Large-scale Renewable Energy Target (LRET) is relevant for the Project. This incentivises investment and development of large-scale renewable energy projects through a market for the creation and sale of Large-scale Generation Certificates (LGCs) (CER, 2018).

<sup>2</sup> Goal 7: 'Ensure access to affordable, reliable, sustainable and modern energy for all', Target 7.2 states 'By 2030, increase substantially the share of renewable energy in the global energy mix'

<sup>3</sup> Goal 11: Sustainable Cities and Communities, Target 11.6 states: 'By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management'

## 2.3 NSW GOVERNMENT STRATEGIES, POLICIES AND PLANS

Legislated under the Climate Change (Net Zero Future) Act 2023, the NSW Government has committed to:

- 50% reduction on 2005 levels by 2030;
- 70% reduction on 2005 levels by 2035; and
- Net zero by 2050.

To meet these commitments, the NSW Government developed the 'Net Zero Plan Stage 1: 2020–2030' (NSW DPIE, 2020a), an overarching strategy to reduce emissions and minimise the impacts of climate change.

The Net Zero Plan Stage 1: 2020–2030 is facilitated by several NSW Government strategies and guidelines that aim to improve energy reliability, security, timely project delivery, increased affordability and access to cheaper electricity. These include:

- NSW Electricity Strategy (NSW DPIE, 2019);
- NSW Transmission Infrastructure Strategy (NSW DPE, 2018); and
- NSW Electricity Infrastructure Roadmap (Roadmap) (NSW DPIE, 2020b).

Overall, these strategies/guidelines aim to facilitate new renewable energy generation, new network infrastructure, and new storage and firming. They cover the establishment of renewable energy zones, an energy security safeguard and aim to streamline business processes for developers in NSW.

### 2.3.1 STATE SIGNIFICANT DEVELOPMENT GUIDELINES

The State Significant Development Guidelines (NSW DPHI, 2024a) (SSD Guidelines) seek to ensure all SSD projects are subject to a comprehensive assessment in accordance with government legislation, plans, policies and guidelines and aim to ensure the assessment of SSD projects is proportionate to the scale and impacts associated with the project. The SSD Guidelines assist to strengthen the assessment of SSD projects, help reduce delays and encourage ESD in NSW.

The SSD Guidelines – Preparing an Environmental Impact Assessment (NSW DPIE, 2022a) is Appendix B to the SSD Guidelines and sets out a detailed explanation of the form and content requirements for Environmental Impact Assessment in NSW. The aim of the Appendix is to set clear expectations for the preparation of all EISs for SSD projects, including compliance with the SEARs, comprehensive assessment and extensive community participation.

In line with the *Environmental Planning & Assessment Regulation 2021* (EP&A Regulation), this EIS has been prepared in accordance with the SSD Guidelines and the supplementary material.

### 2.3.2 RENEWABLE ENERGY PLANNING FRAMEWORK

The Renewable Energy Framework was developed to help NSW transition into renewable energy, with the aim of accelerating the delivery of infrastructure and deliver benefits to host communities.

The Framework provides a suite of policies that will guide the planning and assessment process for renewable energy infrastructure and development. This includes the Large-Scale Solar Energy Guidelines (NSW DPHI, 2022a) (Solar Guideline), which seek to provide a consistent policy framework for solar energy projects designated as SSD in NSW.

The Solar Guideline is supported by the 'Technical Supplement -Landscape Character and Visual Impact Assessment' (NSW DPPI, 2022b), which provides additional guidance on assessing visual and landscape character impacts of large solar energy projects in NSW.

This EIS has been prepared in accordance with the Solar Guideline and supporting documents.

## 2.4 REGIONAL AND LOCAL STRATEGIES, POLICIES AND PLANS






The regional and local plans, policies and planning context relevant to the Project is summarised in **Table 2-2**. Compliance and alignment with these plans are detailed in **Section 7**.

TABLE 2-2 REGIONAL AND LOCAL STRATEGIES, POLICIES AND PLANS RELEVANT TO THE PROJECT


Policy / Plan	Description and Relevance
New England North West Regional Plan 2041	<p>The New England North West Regional Plan 2041 (Regional Plan) sets out a 20-year blueprint for future land use, focused on protecting and enhancing the regions assets and promoting sustainable growth. It covers multiple aspects of land use planning, including employment areas, town centres, housing and related infrastructure to the natural environment and future hazards. (NSW DPE, 2022a).</p> <p>The objectives of the Regional Plan relevant to the Project include:</p> <ul style="list-style-type: none"> <li>• Objective 1: Coordinate land use planning for future growth, community need and regional economic development;</li> <li>• Objective 2: Protect viability and integrity of rural land;</li> <li>• Objective 8: Adapt to climate change and natural hazards and increase climate resilience;</li> <li>• Objective 9: Lead renewable energy technology and investment; and</li> <li>• Objective 10: Support a circular economy.</li> </ul>
Tamworth Regional Blueprint 100	<p>Tamworth Regional Council has adopted the 'Tamworth Blueprint 100', which consists of a series of plans that will outline Tamworth Regional LGA's strategic direction and action plan to deliver on the Tamworth Regional Community Plan outcomes.</p> <p>Part 1: 'Overall Strategy' is the 'plan of plans' that binds key elements into a single document to guide and promote the Tamworth Region through to 2041 (Tamworth Regional Council, 2020a). It identifies eight priority themes, three of which are relevant to the Project:</p> <ul style="list-style-type: none"> <li>• Theme 3: Create a prosperous region;</li> <li>• Theme 6 Design with nature; and</li> <li>• Theme 8 Strengthen our proud identity</li> </ul> <p>Part 2: Tamworth Regional Council Local Strategic Planning Statement (LSPS) is the core strategic planning document that outlines the land use vision, priorities and actions throughout the Tamworth Regional LGA over the next 20 years (Tamworth Regional Council, 2020b). Of the seven key themes and planning priorities, two are relevant to the Project:</p> <ul style="list-style-type: none"> <li>• Theme 2: Create a prosperous region;</li> <li>• Theme 5 Design with nature; and</li> <li>• Theme 6: Celebrate culture and heritage</li> </ul> <p>'Our Community Plan' is the long-term strategic document focused on sustainability, liveability and community wellbeing (Tamworth Regional Council, 2022a). It is grouped into nine key focus areas, of which the Project aligns with three:</p> <ul style="list-style-type: none"> <li>• Focus Area 3 Prosperity and Innovation;</li> <li>• Focus Area 4 Resilient and diverse communities; and</li> <li>• Focus Area 6 Working with and Protecting our Environment.</li> </ul>

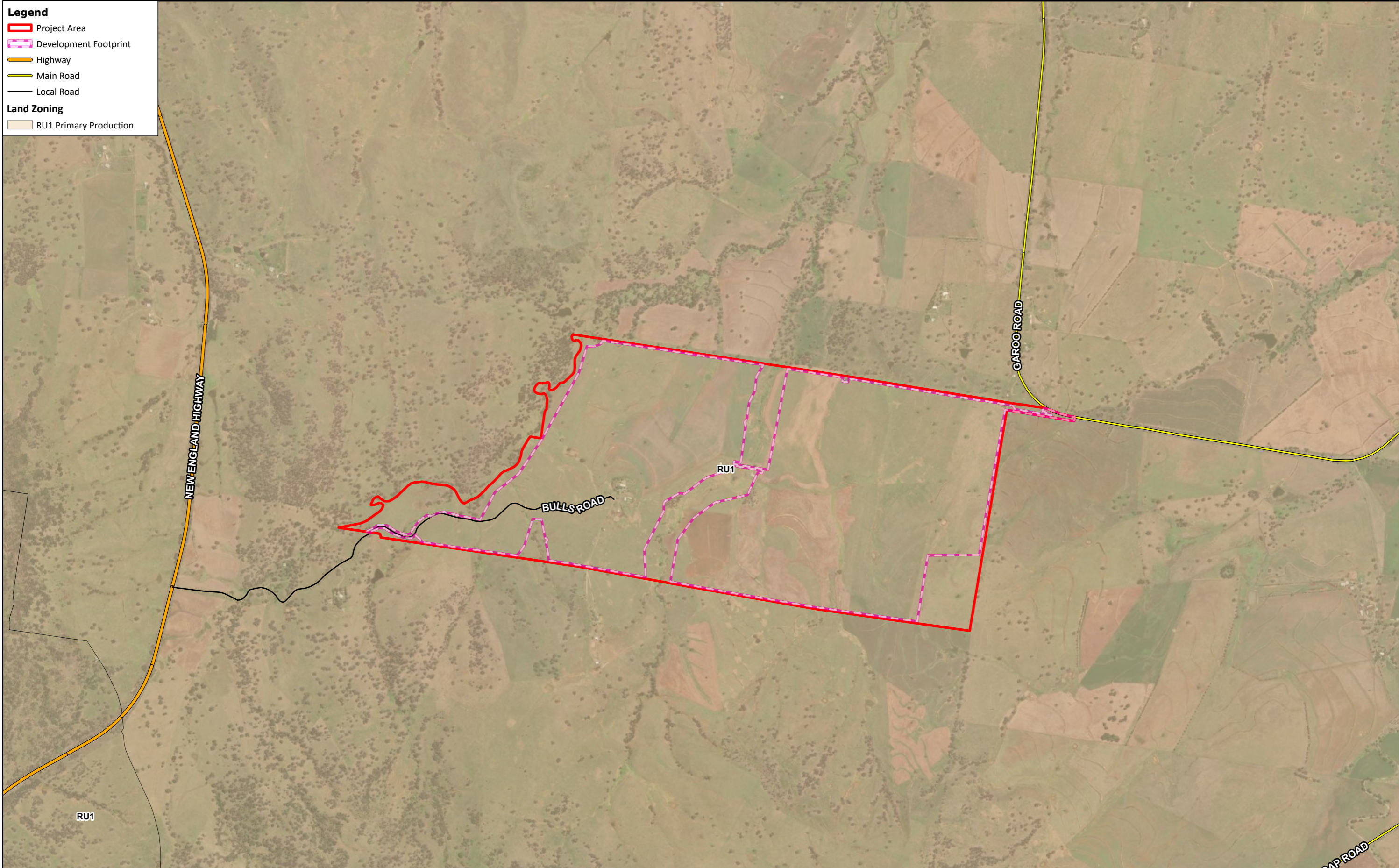
Policy / Plan	Description and Relevance
<p>Tamworth Regional Council Our Sustainability Strategy and Action Plan 2022-2026</p>	<p>The Tamworth Regional Council 'Our Sustainability Strategy and Action Plan 2022-2026' (Tamworth Sustainability Strategy) provides an integrated and coordinated approach to advancing sustainability in the Tamworth region (Tamworth Regional Council, 2022b). The Sustainability Strategy has eight priority themes for action developed in alignment with the Blueprint 100 Focus Areas. Those relevant to the Project include:</p> <ul style="list-style-type: none"> <li>• E2: Reduce Tamworth Regional Council's carbon emissions from energy use;</li> <li>• E4: Guide land use planning to encourage an increase in renewables;</li> <li>• CE2: Attract sustainable and alternative events and business opportunities to Tamworth Regional LGA, including in the villages and regions;</li> <li>• CC1: Monitor and reduce the Tamworth Regional LGA's carbon emissions - aiming to achieve net zero emissions by 2050; and</li> <li>• CC4: Encourage new and sustainable businesses and industries to locate to the Tamworth Regional LGA.</li> </ul>
<p>Tamworth Tomorrow 2022-2026</p>	<p>Tamworth Tomorrow 2022-2026 (Tamworth Tomorrow) identifies investment opportunities in existing infrastructure and addresses regional challenges, focusing on eight economic priorities to drive long-term growth (Tamworth Regional Council, 2023). The objectives, priorities and strategies relevant to the Project include:</p> <ul style="list-style-type: none"> <li>• Education, Skills and Training;</li> <li>• Innovation and Future Industries;</li> <li>• The Renewable Economy; and</li> <li>• Economic Principles.</li> </ul>
<p>Tamworth Regional Local Environmental Plan 2010</p>	<p>As the Project is located within the Tamworth Regional LGA, the relevant Environmental Planning Instrument (EPI) is the Tamworth Regional Local Environmental Plan 2010 (Tamworth Regional LEP). The overall aims of the Tamworth Regional LEP include:</p> <ul style="list-style-type: none"> <li>• Clause 1.2(2)(a): "encourage the orderly management, development and conservation of natural and other resources within the Tamworth region";</li> <li>• Clause 1.2(2)(d): "promote ecologically sustainable urban and rural development"; and</li> <li>• Clause 1.2(2)(e): "secure a future for agriculture by expanding Tamworth's economic base and minimising the loss or fragmentation of productive agricultural land".</li> </ul> <p>The Project Area is zoned RU1 Primary Production, as shown in <b>Figure 2-2</b>. The objectives of RU1 zoned land relevant to the Project includes:</p> <ul style="list-style-type: none"> <li>• To encourage sustainable primary industry production by maintaining and enhancing the natural resource base;</li> <li>• To encourage diversity in primary industry enterprises and systems appropriate for the area;</li> <li>• To minimise conflict between land uses within this zone and land uses within adjoining zones; and</li> <li>• To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.</li> </ul>
<p>Tamworth Regional Development Control Plan 2010</p>	<p>Pursuant to The Planning Systems SEPP, local Development Control Plans (DCPs) do not apply to SSD applications. Therefore, the Tamworth DCP does not apply to the Project</p>

**Legend**

-  Project Area
-  Development Footprint
-  Highway
-  Main Road
-  Local Road


**Land Zoning**

-  RU1 Primary Production



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
 Drawing Size: A3  
 0 0.5km



1:20,000

**F2-2 Land Zoning**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



## 2.5 SITE SETTING AND SURROUNDING LAND

The site setting and surrounding land uses are detailed in **Table 2-3**. The development of a solar farm and ancillary infrastructure does not present any conflicts with the current, or potential future land uses. Solar farms and agricultural production can co-exist, and the majority of the Project area will remain available for agricultural production during operation.

Residential properties and receivers in proximity to the Project are detailed in **Section 3.3**.

**TABLE 2-3 SITE SETTING AND SURROUNDING LAND**

Setting	Summary
<b>Population Centres<sup>4</sup></b>	
<i>Regional</i>	<ul style="list-style-type: none"> <li>Tamworth - 40 km north (population 43,874);</li> <li>Armidale - 149 km (population 23,967);</li> <li>Port Macquarie - 311 km east (population 50,193); and</li> <li>Sydney - 370 km southeast (population 4,830,047).</li> </ul>
<i>Local</i>	<ul style="list-style-type: none"> <li>Wallabadah - 12.9 km southwest (population 216);</li> <li>Nundle - 25.3 km east (population 314);</li> <li>Quirindi - 29 km southwest (population 2,602); and</li> <li>Werris Creek - 49 km northwest (population 1,349).</li> </ul>
<b>Natural Features &amp; Landforms</b>	
<i>Regional</i>	<ul style="list-style-type: none"> <li>The Project is located in the Nandewar Interim Biogeographic Regionalisation for Australia (IBRA) and Peel Subregion (NAN4);</li> <li>The NAN4 subregion is characterised by low peaked hills, moderate slopes, and flat river valleys. Prominent landform features include the Liverpool Ranges and the Peel River;</li> <li>Soils vary by geology and landform and include shallow stony soils, texture contrast soils, black earths and fertile alluvial loams and clays; and</li> <li>Vegetation varies with geology and landform. Generally, the NAN 4 subregion is characterised by white box grassland woodlands, which are replaced by ironbark/cypress pine communities in less productive areas (typically with increasing topographic relief).</li> </ul>
<i>Project Area</i>	<ul style="list-style-type: none"> <li>Characterised by generally flat plains with gentle undulations, transitioning into low-lying hills and ridges in the southwest section. Elevation peaks at approximately 640 m in the southwestern section of the Project Area, with land sloping down toward Tamarang Creek (refer <b>Figure 2-3</b>);</li> <li>The Project Area is highly disturbed following historic clearing and intensive agricultural practice. Vegetation is dominated by non-native vegetation and grasslands; and</li> <li>Native vegetation is highly fragmented, associated with a disturbed mosaic of Plant Community Type (PCT) 599 <i>Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion</i>. This presents in four identified vegetation conditions: open woodland, scattered trees, mixed vegetation and derived grassland.</li> </ul>
<i>Regional Water Catchment Area</i>	<ul style="list-style-type: none"> <li>The Project Area is located within the Namoi Catchment, which supports a range of water users, including agriculture, utility providers and mining practices; and</li> <li>Areas of high environmental value associated with the Namoi Catchment are not located in proximity of the Project Area.</li> </ul>
<i>Water Resources - Project Area</i>	<ul style="list-style-type: none"> <li>The Project Area features one major watercourse (Tamarang Creek), multiple minor ephemeral creeks, and seven farm dams. Sugarloaf creek also traverses the western boundary (refer <b>Figure 6-3</b>);</li> <li>Tamarang Creek and Sugarloaf Creek are mapped as Key Fish Habitat;</li> </ul>

<sup>4</sup> All population data is sourced from the Australian Bureau of Statistics (2021 Census).


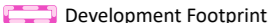

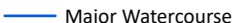
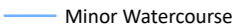
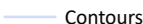
Setting	Summary
	<ul style="list-style-type: none"> <li>Sugarloaf Creek and a minor creek located in the eastern section of the Project Area are mapped as suitable habitat for the threatened Southern Purple Spotted Gudgeon (<i>Mogurnda adspersa</i>)<sup>5</sup>. However, the minor creek is ephemeral and rarely holds water;</li> <li>There are 14 groundwater bores located within or near (500 m radius) the Project Area; and</li> <li>There are no wetlands of international importance or nationally important wetlands within the Project Area.</li> </ul>
<b>Land Use</b>	
<i>Regional</i>	<ul style="list-style-type: none"> <li>The region supports significant agricultural activities;</li> <li>Agriculture is the primary land use in the Tamworth Regional LGA, accounting for 88% of the total area (NSW DPIRD, 2024); and</li> <li>The Tamworth Regional LGA also comprises several National Parks, State Forests (native and plantation), nature reserves and urban areas.</li> </ul>
<i>Project Area</i>	<ul style="list-style-type: none"> <li>The Project Area has historically been used for agricultural purposes, with evidence of historic vegetation clearing;</li> <li>Current land use is agricultural, dominated by livestock grazing (modified pasture) and small-scale cropping;</li> <li><b>Figure 2-4</b> presents the land use in the Project Area and surrounds, as per the NSW Landuse 2017 v1.5 mapping data (NSW DPE, 2017); and</li> <li>There is one existing dwelling within the Project Area, which is accessed from Bulls Road via the New England Highway (refer <b>Section 3.3</b>)</li> </ul>
<i>Livestock Water Supply</i>	<ul style="list-style-type: none"> <li>Primarily provided from private bores (accessing underground water) or from existing farm dams present, within the Project Area.</li> </ul>
<i>Nature Reserves / Conservation Areas</i> <sup>6</sup>	<ul style="list-style-type: none"> <li>Wallabadah Nature Reserve – 17.5 km south;</li> <li>Crawney Pass National Park – 19 km southeast;</li> <li>Ben Halls Gap Nature Reserve - 29.1 km southeast;</li> <li>Back Rover Nature Reserve - 30.3 km east; and</li> <li>Ben Halls Gap National Park – 31 km southeast;</li> </ul>
<i>Mineral Resources</i>	<ul style="list-style-type: none"> <li>There are no mining or exploration licences within the Project Area<sup>7</sup>.</li> </ul>
<b>Built Features</b>	
<i>Major transport corridors</i>	<ul style="list-style-type: none"> <li>New England Highway, located approximately 0.9 km west of the Project Area. General north-south alignment between Muswellbrook and Yarraman; and</li> <li>Armidale – Central Railway Line, located approximately 24 km west of the Project Area. This provides a return daily rail service to Sydney, servicing nearby towns of Quirindi, Werris Creek and Tamworth.</li> </ul>
<i>Airports</i>	<ul style="list-style-type: none"> <li>Tamworth Regional Airport, located approximately 50 km (by road) north of the Project Area; and</li> <li>Aviation activities associated with aerial application operations for fertiliser, pest and crop spraying on agricultural lands may be undertaken in areas surrounding the Project.</li> </ul>
<i>Existing Electricity Infrastructure</i>	<ul style="list-style-type: none"> <li>Two 330 kV overhead transmission lines traverse the Project Area in a general north-south alignment: The Muswellbrook-Tamworth line and Liddell-Tamworth line (refer <b>Figure 3-1</b>). The Project will connect into the Liddell-Tamworth transmission line, which is owned and operated by Transgrid</li> </ul>

<sup>5</sup> Purple Spotted Gudgeon is listed as endangered under the *Fisheries Management Act 1994* (NSW)

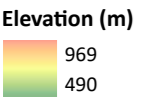
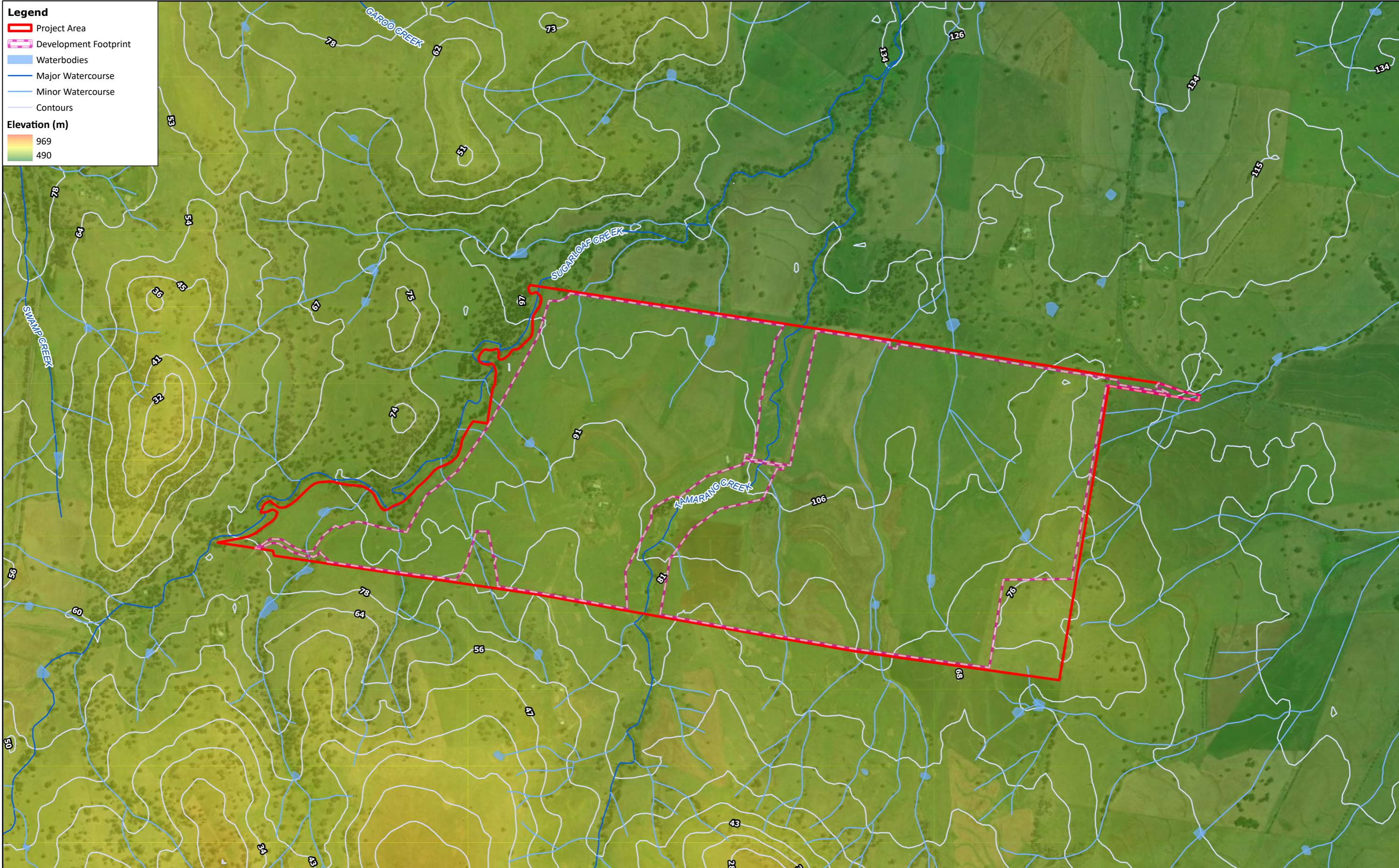
<sup>6</sup> Distances are direct line

<sup>7</sup> MinView Database (NSW DPIRD, 2025)

**Legend**


-  Project Area
-  Development Footprint
-  Waterbodies
-  Major Watercourse
-  Minor Watercourse
-  Contours

**Elevation (m)**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCD/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
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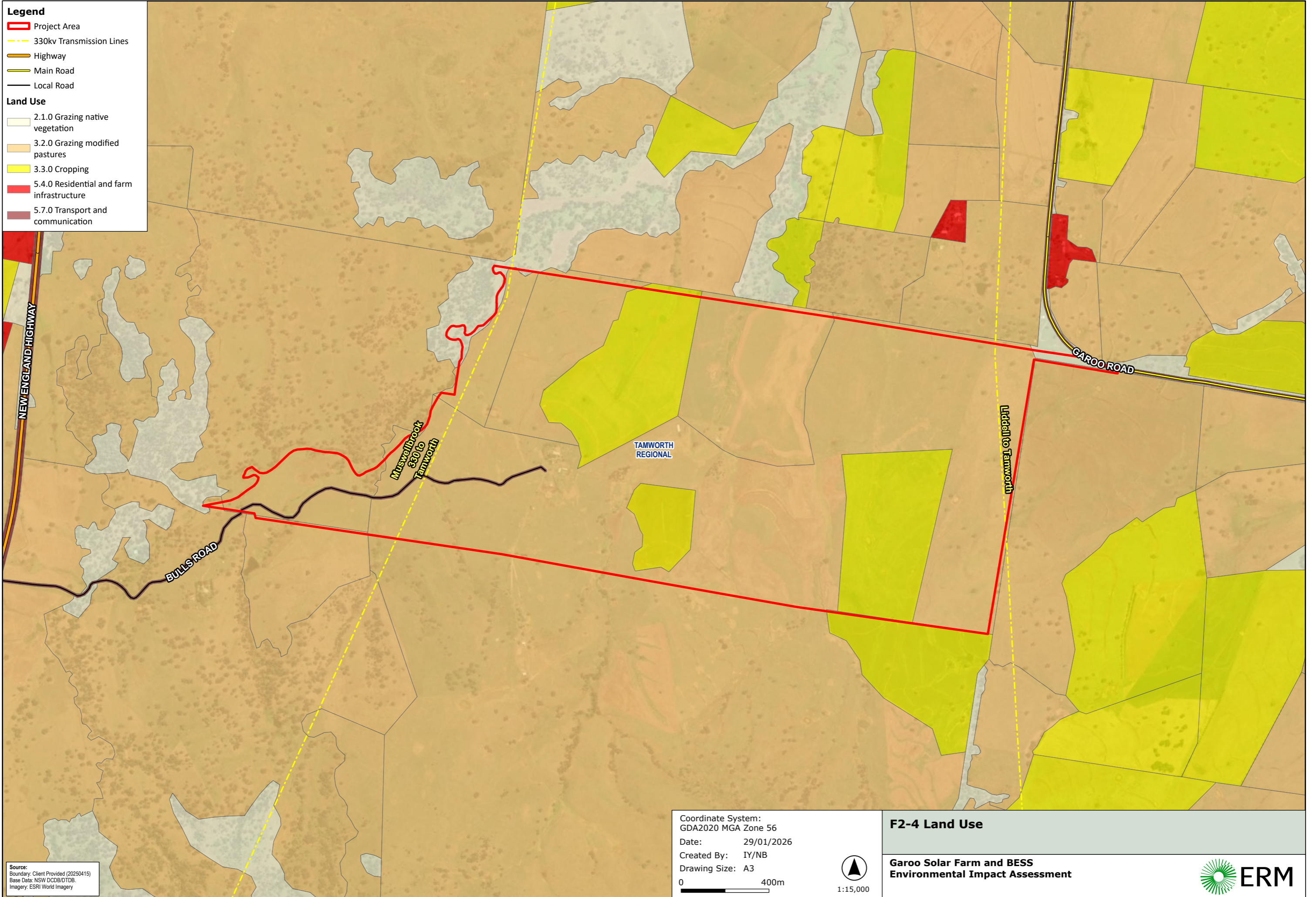


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**F2-3 Topography and Watercourses**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





**Legend**

- Project Area
- 330kv Transmission Lines
- Highway
- Main Road
- Local Road

**Land Use**

- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.4.0 Residential and farm infrastructure
- 5.7.0 Transport and communication

Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
 Drawing Size: A3

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**F2-4 Land Use**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



## 2.6 NEARBY MAJOR PROJECTS

The Project is located within the scope of The New England North West Regional Plan 2041, which includes objectives to lead renewable energy technology and investment in regional NSW, leveraging renewable energy opportunities in the regions as a key growth area. The Project is also located within proximity of the New England REZ, which was proposed to facilitate the coordinated development of renewable energy generation projects, energy storage and transmission. This means that the region is planned to have a significant number of renewable energy developments, as well as other SSD projects.

Potential cumulative impacts of the Project are investigated further in **Section 6.18**, in accordance with the 'Cumulative Impact Assessment Guidelines for State Significant Projects' (CIA Guidelines).

Nearby major developments that have been considered in this assessment are summarised in **Table 2-4**, and the location of the developments within 50 km is displayed in **Figure 2-5**.

TABLE 2-4 NEARBY MAJOR DEVELOPMENTS

Project	Application Number	Developer	Scale/ Description	Proximity	Status
<i>Solar Energy Developments</i>					
Middlebrook Solar Farm and BESS	SSD-10455	Total Eren Australia Pty Ltd	320 MW of solar capacity with a 300 MW / 600 MWh BESS	25 km	Approved by Independent Planning Commission (IPC)
Lambruk Solar Farm	SSD-67436209	Venn Energy Pty Ltd	500 (DC) / 300 (AC) MW of solar capacity with a 300 MW / 1200 MWh BESS	37.5 km	Prepare EIS
Bendemeer Solar Farm	SSD-36651552	Athena Energy (Holdings) Australia Pty Ltd	280 MW DC of solar capacity with a 150 MW / 300 MWh BESS	85 km	Assessment
<i>Wind Energy Developments</i>					
Hills of Gold Wind Farm	SSD-9679	Wind Energy Partners	420 MW	49 km	Approved
Bendemeer Wind Farm	SSD-78015999	Athena Wind Energy (Holdings) Pty Ltd	316 MW	85.5 km	Prepare EIS
Thunderbolt Wind Farm	SSD-10807896	Neoen Australia Pty Ltd	192 MW	97 km	Approved
<i>Energy Storage</i>					
Wallabadah BESS	SSD-78391212	North Harbour Clean Energy	400 MW / 800 MWh	5 km	Prepare EIS
Kingswood BESS	SSD-63207219	Iberdrola Australia Development Pty Ltd	500MW / 1000 MWh	49 km	Response to Submissions
Calala BESS	SSD-52786213	Equis Energy Pty Ltd	300 MW / 600 MWh	46 km	Approved
Tamworth BESS	SSD-23830229	Maoneng Pty Ltd	200 MW	43 km	Response to Submissions
<i>Transmission</i>					
New England REZ Transmission Project	SSI-74175972	EnergyCo	Dual 500 kV transmission lines, single 500 kV and 330 kV lines, and four energy hubs.	1 km	Prepare EIS

Project	Application Number	Developer	Scale/ Description	Proximity	Status
<i>Infrastructure</i>					
Werris Creek Coal Mine Expansion	MP10_0059	Werris Creek Coal Pty Ltd	Extension of operations north of limit	25 km	Approved
Chaffey Dam Upgrade	SSI-5039	State Water Corporation	Increase level of dam wall and spillway	43 km	Approved
<i>Hydro</i>					
Dungowan Pumped Hydro Energy Storage <sup>8</sup>	N/A	EDF Australia	300 MW	79 km	Scoping report to be submitted
<i>Extractive Industry</i>					
Willow Tree Gravel Extension	SSD-48590227	Regional Group Australia	750,000 T per annum	45 km	Prepare EIS
Currabubula Quarry Expansion Project	SSD-79020958	Boral Resources Pty Ltd	750,000 T per annum	47 km	Prepare EIS
<i>Other</i>					
Tamworth Hospital Redevelopment	SSD-5204	NSW Health Infrastructure	Hospital redevelopment	47 km	Approved

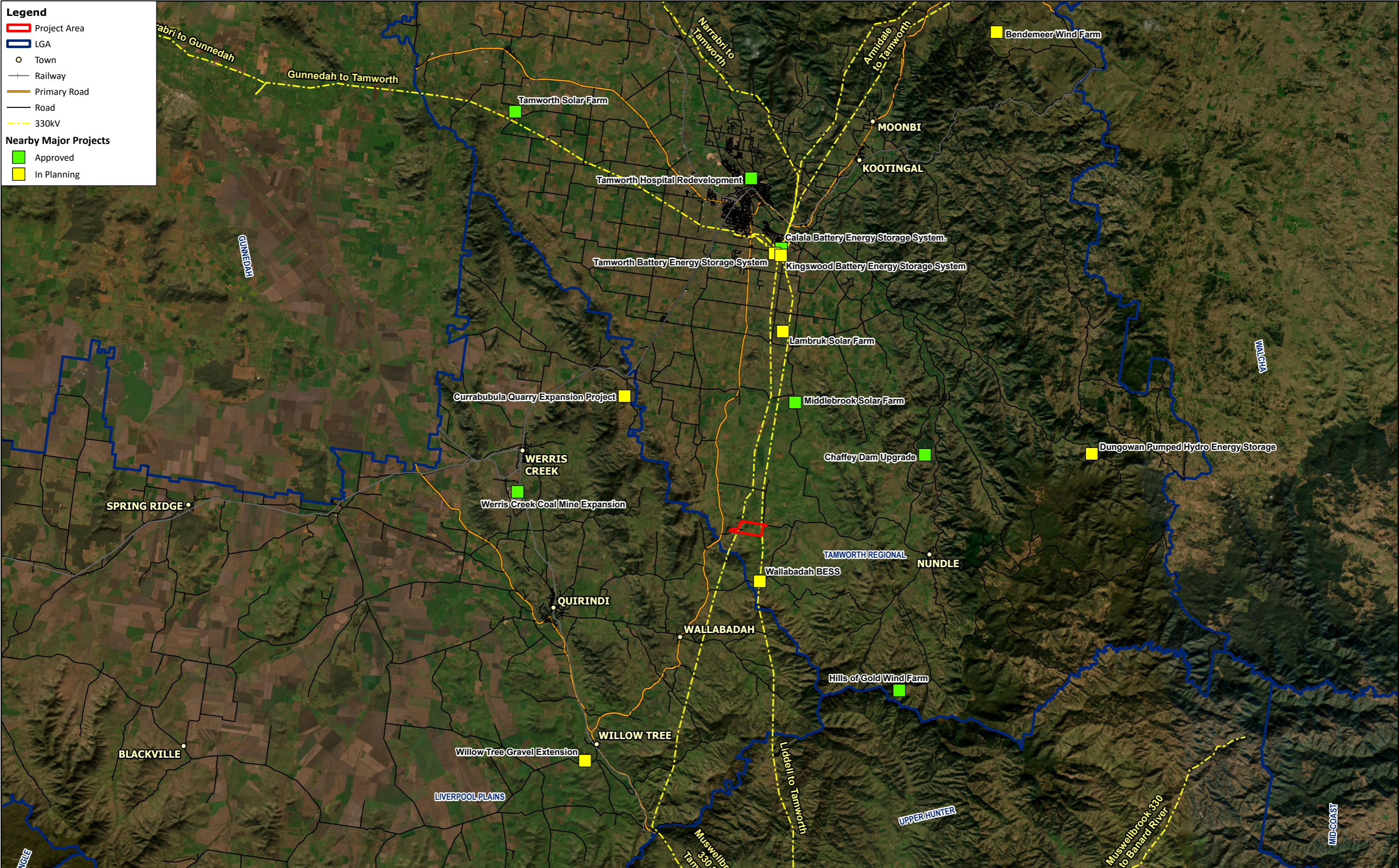
<sup>8</sup> This project has not yet submitted an development application, but Tamworth Regional Council have requested it is included in cumulative impact assessments.

**Legend**

- ▬ Project Area
- ▬ LGA
- Town
- Railway
- Primary Road
- Road
- - - 330kV

**Nearby Major Projects**

- Approved
- In Planning



Coordinate System:  
GDA2020 MGA Zone 56

Date: 29/01/2026


Created By: NB

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**F2-5 Nearby Major Projects**

**Garoo Solar Farm and BESS  
Environmental Impact Assessment**



## 2.7 CONTRIBUTIONS AND AGREEMENTS

### 2.7.1 HOST LANDOWNER AGREEMENT

The Applicant has entered into Agreements with one landowner/entities hosting the Project.

### 2.7.2 BENEFIT SHARING SCHEMES

The Project has proposed a model of community benefit sharing in line with the Benefit-Sharing Guideline (NSW DPFI, 2024e). The proposed scheme is guided by the six policy principles for benefit sharing schemes for large-scale renewable projects. These are: benefit-sharing is standard practice, cooperative, transparent, community focused, proportionate and delivers a positive outcome.

The proposed scheme has been collaboratively designed through discussions with neighbours to the Project Area, community drop-in sessions, council meetings and DPFI meetings. The scheme includes a diverse set of stakeholders and community groups ensuring a broad distribution of benefits.

The total value of the scheme will equal \$850/MW/year.

#### 2.7.2.1 NEIGHBOUR BENEFITS

An annual residential energy rebate of \$1,200 per annum will be provided for nearby residential properties (R2, R3, R4, R5, R6, R8). This will amount to a total financial value of \$7,200 per annum for the life of the Project, including the construction phase.

The Applicant is negotiating private agreements with the nearby residential properties as per the Private Agreement Guideline (NSW DPFI, 2024b).

#### 2.7.2.2 LOCAL COMMUNITY BENEFITS

The proposed benefit sharing scheme includes a CBF, with funds allocated to support a range of community focused programs. The estimated total financial value of the CBF per annum is \$106,496.

Approximately 85% of the total benefit sharing scheme will be directly contributed to the Tamworth Regional Council. The intention is for Tamworth Regional Council to distribute the funds in accordance with their best judgement and knowledge, leveraging their local understanding of the community needs. The remaining 15% will be used to support community programs.

**Table 2-5** provides an indicative example summary of the community benefits.

TABLE 2-5 COMMUNITY BENEFIT DETAILS (PER ANNUM \$2024)

Example Beneficiary	Details	Total benefit (per year)	Phase
Local Community Benefits	Support a range of community benefit-sharing programs within the local township.	\$55,000	Construction
<b>Direct Distribution to Council</b>			
Community Social Projects	Support rehabilitation / social projects based in the local township.	\$20,000	Construction and Operation
Scholarship funds	Partner with local institutions to support students in engineering and renewable energy or TAFE training.	\$35,000	Operation
Community Medical Support	Support local health infrastructure or mobile health services.	\$20,000	Operation
Cultural Activities Fund	Fund cultural festivals and sustainability-themed events	\$31,496	Construction and Operation

## 2.8 PROJECT ALTERNATIVES

### 2.8.1 NO PROJECT

The 'No Project' option needs consideration as it represents the status quo and avoids development impacts. 'No Project' (i.e. the development is not carried out) would avoid potential impacts associated with the development and operation of the Project. The site would continue to be used for agricultural production. **Section 6** provides further discussion of these impacts and the accompanying mitigation and management measures. This EIS concludes that with appropriate mitigation and management measures, the Project would not have any significant negative environmental or social impacts.

Not proceeding with the Project would forgo the benefits outlined in **Section 2**, particularly those relating to federal, state and regional policies, and strategies to decarbonise the NEM. Should the Project not proceed, the estimated 270,000 tonnes of carbon dioxide equivalent per annum (t CO<sub>2</sub>-e pa) reduction in GHG emissions would not be realised. Similarly, not proceeding with the Project would forgo the social and economic benefits detailed in this EIS, including the provision of direct and indirect employment and economic stimulus and contributions to local community facilities and infrastructure.

The consequences of not carrying out the development include losing the opportunity to bring local jobs and investment to the Tamworth Regional LGA. The local area and wider region would not benefit from project outcomes, such as:

- The economic benefits to the local and regional community provided directly and indirectly by the employment associated with the Project; and
- A capital investment creating direct and indirect employment during construction and operations.

### 2.8.2 ALTERNATIVE SOURCING OF ENERGY

The alternative to using solar energy is the continued use of fossil fuels, including coal (both black and brown) and natural gas. These energy sources emit GHGs (e.g. carbon dioxide), which have been linked to climate change. Continuing with these forms of energy would not assist Australia and NSW in meeting their legislated emissions reduction targets.

Other forms of large-scale renewable energy, including hydroelectric power, bioenergy and tidal energy are not suitable for the Project Area. Due to the abundance of solar resources, a sparsely populated locality and proximity to planned and existing transmission infrastructure, it is considered that large-scale solar technology is the optimum form of energy generation.

The Project has the potential to contribute a significant amount of renewable energy supply over a 30-year period. Large-scale solar technology is now one of the cheapest forms of new energy generation, reducing cost pressures on consumers.

### 2.8.3 ALTERNATIVE SITE SELECTION

The Applicant undertook a site selection process, with alternative locations assessed in the region. Various criteria were considered during the site selection process, including:

- Landowner sentiment and willingness to enter into agreements;
- Solar resource;
- Proximity and access to existing transmission lines;
- Accessibility to the Project via a serviceable transport network;
- Suitable topographical features that would require minimal earthworks / soil disturbance;
- Minimal flooding or bushfire risk;
- Minimal nearby sensitive receptors; and
- Minimal environmental impacts.

The selected site adequately met the criteria. As such, it represents a suitable location for a solar facility that generates local and state-wide benefits, whilst minimising environmental and social impacts.

### 2.8.4 DESIGN EVOLUTION AND IMPACT MINIMISATION

The design process developed for this Project focused around three main principles:

- Minimising and/or avoiding negative environmental and social impacts;
- Maximising solar energy production; and
- Incorporating feasible and reasonable mitigation/management measures, safeguards and provisions (e.g. for compliance monitoring) into the construction and operational aspects of the Project.

The design of the Project has evolved in response to constraints or opportunities identified in technical assessments. Significantly, the design refinement has been guided by the outcomes of engagement with key stakeholder groups, as described in **Section 5**. This engagement, along with technical studies undertaken for the Project, has helped to refine the Project layout presented in this EIS.

Design iterations have sought to minimise and avoid environmental and social impacts in line with the Avoid-Minimise-Mitigate-Offset design hierarchy:

- Avoid – in first instance, all efforts were made to avoid potential environmental and social impacts;
- Minimise – where potential impacts could not be avoided, design principles aimed to minimise environmental and social impacts, as far as feasibly possible;
- Mitigate – mitigation strategies will be implemented to manage the extent and severity of remaining environmental and social impacts; and
- Offset – environmental and social offsets shall be used only as applicable, following all efforts to first avoid, minimise, and mitigate environmental impacts.

The evolution of the Project design regarding these principles is set out in **Table 2-6**.

**TABLE 2-6 DESIGN EVOLUTION TO AVOID, MINIMISE OR MITIGATE ACTIONS**

Principal	Project Design Element
Avoid	Solar arrays have been excluded southwestern section of the Development Footprint to that surrounding residential properties do not experience any glint and glare impacts. This resulted in the total number of solar arrays being significantly decreased, reducing the energy generating capacity from 155 MW to 133 MW.
	The Project layout was amended to exclude all Aboriginal cultural heritage sites from the Development Footprint, avoiding potential impacts and ensuring their preservation.
	A majority of water resources, including all farm dams, have been avoided and retained to minimise impact on riparian and aquatic biodiversity values. and to support co-grazing.
Minimise	Amended alignment of the site access route to minimise impacts to biodiversity features.
	Amended the location of the BESS to reduce impacts to flood behaviour, ensuring the floodplain is not obstructed and flow behaviour is maintained.
	Knowledge of biodiversity values has informed design, with the Development Footprint preferentially utilising low conservation value land, demonstrating a significant avoidance of native vegetation, aquatic and riparian habitats and local biodiversity value.
	The following have been implemented to minimise visual impacts: <ul style="list-style-type: none"> <li>• Avoidance of exposed elevated area;</li> <li>• Modification the BESS layout and footprint has been modified, and screening vegetation would be established to enhance the existing visual landscape amenities. These changes have been implemented based on community feedback.</li> </ul>
Mitigate	Noise mitigation technology, such as silencer kits and noise walls, has been incorporated into the design to minimise noise propagating from Project infrastructure during operation.

## 2.9 KEY POTENTIAL RISKS

Key potential environmental and social risks that the Project may pose are summarised in **Table 2-7** and investigated in detail in **Section 6**.

As demonstrated in **Section 6** the key aspects and risks have been assessed and can be managed with standard safeguards.

**TABLE 2-7 PROJECT KEY RISKS OR HAZARDS**

<b>Key risks / Hazards</b>	<b>Summary</b>
<i>Biodiversity</i>	<p>Solar Farms typically require access to relatively flat or gently sloping land in sunny areas within proximity to electricity transmission networks. Land suitable for solar energy generation is typically clear of large stands of trees, has been historically used for livestock grazing, and therefore biodiversity impacts can be avoided or minimised. This often means that land which has been previously cleared or zoned for agricultural use is well-situated to host solar farm developments, as is the case for the Project Area.</p> <p>A primary design refinement principal was to locate infrastructure in already cleared areas and avoid, where possible, impacts to high-quality native vegetation. This includes excluding all scattered paddock trees and distinct vegetation zones of PCT 599 from the Development Footprint (refer <b>Section 6</b>).</p> <p>Watercourses mapped as Key Fish Habitat are present within the Project Area. Where possible, permanent (i.e. non-ephemeral) watercourses have been excluded from the Development Footprint, except for a single bridge crossing of Tamarang Creek. Notwithstanding, there may be areas of aquatic habitat impacted by the development.</p>
<i>Agriculture, Soils and Land Uses</i>	<p>The Project is to be situated on rural land, resulting in the temporary loss of agricultural land, albeit a fraction of the total agricultural land within the Tamworth Regional LGA. Other risks include compatibility with host, neighbouring and local agricultural practices. This includes potential soil erosion, biosecurity risks, livestock disturbance, and water resources.</p>
<i>Noise</i>	<p>Ancillary infrastructure required for solar farms, including transformers, substations and battery units, emit a noise. This can be audible for sensitive receptors in proximity to the Project, impacting upon amenity.</p>
<i>Landscape and Visual</i>	<p>The placement of solar arrays and battery energy storage systems can alter the landscape character of the area. Sensitive receivers, either private residents or public viewpoints, within 4 km of the Project may experience reduced visual amenity.</p>
<i>Traffic and Transport</i>	<p>The Project requires the delivery of construction components, equipment, plant and machinery to the Project area, as well as the development of internal access tracks. Local and state road networks may need to be upgraded to facilitate the movement of these components.</p>
<i>Aboriginal Heritage</i>	<p>Disturbance to landscape from construction and operational activities may lead to the harm of items of Aboriginal cultural value.</p>
<i>Hazards and Risks</i>	<p>There is risk of incident propagation between BESS units leading resulting in fire hazards.</p>
<i>Water</i>	<p>Solar farm development can lead to the alteration of natural watercourses through change of natural site topography, increased run off from the solar panels during Project operations and erosion and sedimentation risk during the Project construction phase.</p>

<b>Key risks / Hazards</b>	<b>Summary</b>
<i>Social and Economic</i>	<p>The Project could lead to social impacts, such as housing shortages or strain on local resources. The Project will also drive economic activity, benefiting both the local, regional and broader NSW economy (refer <b>Section 6.12</b>).</p> <p>Social considerations were assessed and will be used to guide the development, to benefit local and regional communities/businesses, and minimise societal impacts (refer <b>Section 6.15</b>).</p>

### 3. PROJECT DESCRIPTION

#### 3.1 OVERVIEW

The Project will involve the construction, operation, maintenance and decommissioning (where applicable) of a solar farm with a targeted electricity generating capacity of up to 133.76 MW AC, a centralised large-scale BESS with a capacity of up to 360 MW / 1,440 MWh, and associated infrastructure. The Project will supply electricity to the NEM, proposing to connect into the existing 330 kV Liddell-Tamworth overhead transmission line.

A Project description is included in **Table 3-1** and the Project layout is presented in **Figure 3-1**. Further details on the Project are provided in the following sections.

**TABLE 3-1 PROJECT SUMMARY**

<b>Project Terminology</b>	<b>Summary</b>
<i>Project Details</i>	
<i>Project</i>	Garoo Solar Farm and BESS
<i>Applicant</i>	The Trustee for GreenPulse Solar Farm and BESS Unit Trust
<i>Project Address</i>	291 Garoo Road, Garoo NSW 2340
<i>Project Area</i>	The Project Area extends over approximately 369 hectares (ha).
<i>Development Footprint</i>	Maximum directly impacted area by Project construction and operation, which is approximately 305.43 ha. The Development Footprint is located entirely in the Project Area. It includes all temporary and permanent disturbance areas, and all areas where vegetation may be removed during project construction and operations.
<i>Study Area</i>	Subject area for individual assessments will differ commensurate with the relevant legislation and guidelines for individual aspects.
<i>EDC</i>	Estimated total Project cost of \$500 million
<i>Project Elements</i>	
<i>Solar Panels</i>	<ul style="list-style-type: none"> <li>Approximately 234,000 Solar photovoltaic (PV) modules (solar panels); and</li> <li>Maximum generation capacity of 133.76 MW AC.</li> </ul>
<i>BESS</i>	<ul style="list-style-type: none"> <li>Storage capacity of approximately 360 MW / 1,440 MWh; and</li> <li>Located on Lot 16 DP755341;</li> </ul>
<i>Electrical Reticulation Infrastructure</i>	<ul style="list-style-type: none"> <li>Two onsite substations (330 kV), including switching station, transformers and associated structures; and</li> <li>Approximately 16.6 km of underground electrical reticulation connecting solar panels to the substations and associated infrastructure. <ul style="list-style-type: none"> <li>Conduits housing electrical reticulation will be attached to the Tamarang Creek bridge crossing.</li> </ul> </li> </ul>
<i>Access</i>	<ul style="list-style-type: none"> <li>The Project will be accessed via Garoo Road, at the northwest corner of the Project Area (refer <b>Figure 3-1</b>).</li> </ul>
<i>Emergency Access</i>	<ul style="list-style-type: none"> <li>There are two emergency access points, one will be via Garoo Road, at the northwest corner of the Project Area and the second emergency access will be via Bulls Road from the southwest corner of the Project Area.</li> </ul>

<b>Project Terminology</b>	<b>Summary</b>
<i>On-site Supporting Infrastructure</i>	<ul style="list-style-type: none"> <li>• Permanent Operations &amp; Maintenance (O&amp;M) compound, including <ul style="list-style-type: none"> <li>◦ A control room;</li> <li>◦ Storage facilities;</li> <li>◦ Supervisory Control and Data Acquisition (SCADA) facilities;</li> <li>◦ Basic office amenities; and</li> <li>◦ Car parking area.</li> </ul> </li> <li>• Laydown area;</li> <li>• New or upgraded access roads; <ul style="list-style-type: none"> <li>◦ Single bridge across Tamarang Creek (Lot 1 and Lot 2, DP 755341);</li> </ul> </li> <li>• New or upgraded drainage system; and</li> <li>• Security fencing (approximately 2.4 m high) and lighting.</li> </ul>
<i>Off-site Supporting Infrastructure</i>	<ul style="list-style-type: none"> <li>• Existing transport network;</li> <li>• Existing telecommunications network;</li> <li>• Waste and wastewater disposal facilities</li> <li>• Temporary quarry for construction material (if required); and</li> <li>• Temporary accommodation/housing for construction workers (if required).</li> </ul>
<b>Construction</b>	
<i>Construction Duration</i>	<ul style="list-style-type: none"> <li>• Approximately 18 months.</li> <li>• Peak construction will occur for about six months.</li> </ul>
<i>Construction Hours</i>	<ul style="list-style-type: none"> <li>• As per standard daytime construction working hours (or as defined in <b>Section 3.5</b>).</li> </ul>
<i>Construction Workforce</i>	<ul style="list-style-type: none"> <li>• Approximately 250 Full Time Equivalent (FTE) during peak construction.</li> </ul>
<i>On-site Temporary Infrastructure</i>	<ul style="list-style-type: none"> <li>• Temporary construction compounds with offices, car parking and amenities;</li> <li>• Temporary workers accommodation camp (capacity 250 FTE), which will be operational for 15 months (refer <b>Figure 3-2</b>);</li> <li>• On-site borrow pits, laydown and storage areas, fencing, and access; and</li> <li>• Utilities, including water sourcing, power supply, and communications</li> </ul>
<i>Ancillary Activities</i>	<ul style="list-style-type: none"> <li>• Delivery of Project components, including solar panels, battery modules, substations, transformers and associated components;</li> <li>• Installation of underground and overhead cabling, maintenance and environmental managements processes and equipment;</li> <li>• Access road upgrades; and</li> <li>• Earthworks, as required.</li> </ul>
<i>Services and Utilities</i>	<ul style="list-style-type: none"> <li>• Adjustment, protection or relocation of existing utilities, including: <ul style="list-style-type: none"> <li>◦ Liddell-Tamworth transmission line; and</li> <li>◦ Public roads.</li> </ul> </li> </ul>
<i>Transport Route</i>	<ul style="list-style-type: none"> <li>• Main equipment and Over Size, Over Mass (OSOM) deliveries via Port of Newcastle; and</li> <li>• Associated external road upgrades (also used for operational maintenance or decommissioning activities)</li> </ul>
<b>Operations</b>	
<i>Duration</i>	<ul style="list-style-type: none"> <li>• Development Consent in perpetuity; and</li> <li>• Infrastructure life minimum of 30 years</li> </ul>
<i>Hours of Operation</i>	<ul style="list-style-type: none"> <li>• 24 hours a day, seven days a week.</li> </ul>
<i>Operational Workforce</i>	<ul style="list-style-type: none"> <li>• Approximately 10 FTE staff to operate the Project, once constructed.</li> </ul>

## 3.2 PROJECT AREA AND DEVELOPMENT FOOTPRINT

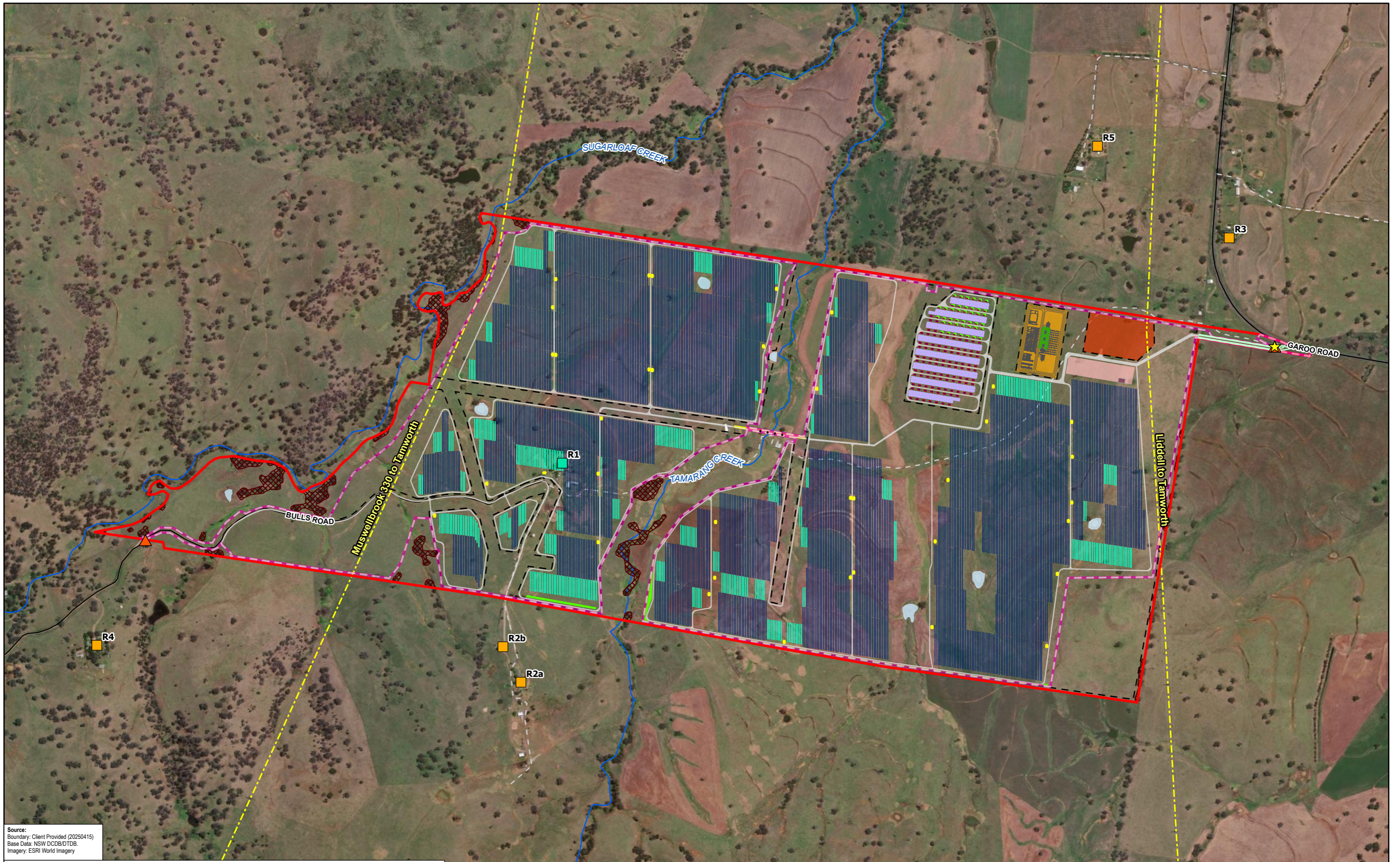
The Project Area covers approximately 369 ha, which have been secured under an Option agreement by the Applicant (refer to **Section 2.7.1**). The Development Footprint is located entirely within the Project Area, and covers approximately 305.43 ha (refer **Figure 3-1**). Further details on land ownership and residential dwellings are provided in **Section 3.3**.

The Development Footprint has been refined throughout the preparation of the EIS to minimise and avoid impacts (refer **Section 2.8.4**). It consists of the:

- Temporary Disturbance Area, which is the area of land that will be temporarily disturbed during construction of the Project with areas to be rehabilitated following construction; and
- Permanent Disturbance Area is the area of land that will remain disturbed throughout the operational life of the Project and will not be suitable for agricultural use. This will include infrastructure areas such as the BESS, switchyard, substation and associated facilities (e.g., O&M compound).

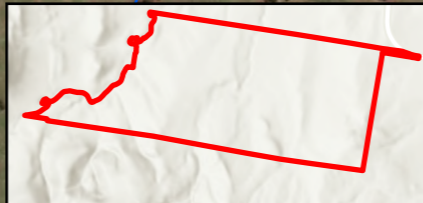
A minimum Asset Protection Zone (APZ) has been added to the Development Footprint, as described in **Section 6.13**.

The final layout is subject to further design development and refinement. The Development Footprint assessed in the EIS has been sized/scaled to allow for some flexibility to micro-site infrastructure and to ensure that the final layout can respond to identified social and environmental impacts and constraints.



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend	
Project Area	Transmission Lines (existing)
Development Footprint	Maintained Existing Water Dams
Preferred access point	Avoidance Area
Emergency Access point	Associated Dwelling
Non-Associated Dwelling	Internal Road
PV (Mounting Structure - Half Table)	Parking and Laydown Area
PV (Mounting Structure - Full Table)	Customer Substation
Inverters	Transgrid Substation
Bridge	O&M Building
OHL Interconnection	Bridge Piers
BESS Container	Noise Walls - PCS Stations
Strategic Road Upgrade	Noise Wall - High Voltage Transformer
Fence	Mitigation Planting Areas
Local Road	Local Track-Vehicular
Local Track-Vehicular	PCS Station



Coordinate System:  
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 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3

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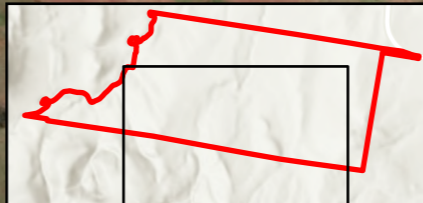
**F3-1 Project Layout**  
**Map 1 of 7**

**Garoo Solar Farm and BESS**  
**Environmental Impact Assessment**



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend			
Project Area	Maintained Existing Water Dams	PV (Mounting Structure - Half Table)	Inverters
Development Footprint	Avoidance Area	PV (Mounting Structure - Full Table)	Bridge
Transmission Lines (existing)	Associated Dwelling	BESS Container	OHL Interconnection
Non-Associated Dwelling	Mitigation Planting Areas	Local Road	BESS Container
Internal Road	Local Track-Vehicular	PCS Station	Fence
	Bridge Piers		



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3  
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 1:6,000

**F3-1 Project Layout  
 Map 2 of 7**

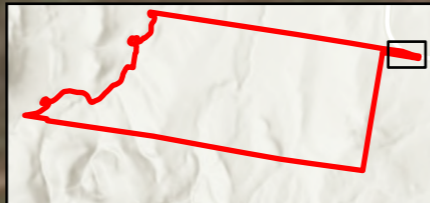
**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend		
Project Area	Emergency Access point	Local Track-Vehicular
Development Footprint	Strategic Road Upgrade	PCS Station
Preferred access point	Local Road	



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3  
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**F3-1 Project Layout  
 Map 3 of 7**

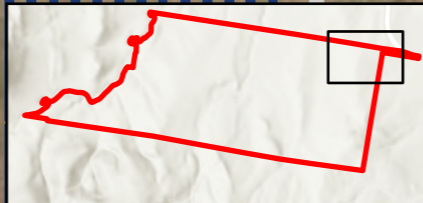
**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend			
Project Area	PV (Mounting Structure - Half Table)	Internal Road	Transgrid Substation Area
Development Footprint	PV (Mounting Structure - Full Table)	Parking and Laydown Area	Inverters
Transmission Lines (existing)	Avoidance Area	Customer Substation Area	Strategic Road Upgrade
Avoidance Area		Fence	O&M Building
			Noise Wall - High Voltage Transformer
			Local Road
			Local Track-Vehicular
			PCS Station



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3  
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**F3-1 Project Layout  
 Map 4 of 7**

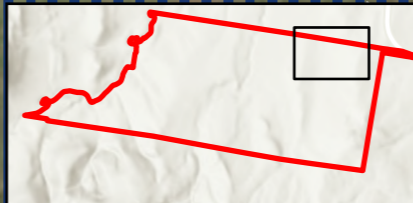
**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend			
	Project Area		PV (Mounting Structure - Half Table)
	Development Footprint		Parking and Laydown Area
	Transmission Lines (existing)		Customer Substation Area
	Internal Road		Transgrid Substation Area
	Inverters		OHL Interconnection
	PV (Mounting Structure - Full Table)		BESS Container
	Noise Walls - PCS Stations		Fence
	Noise Wall - High Voltage Transformer		O&M Building
	Local Track-Vehicular		PCS Station



Coordinate System:  
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 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3  
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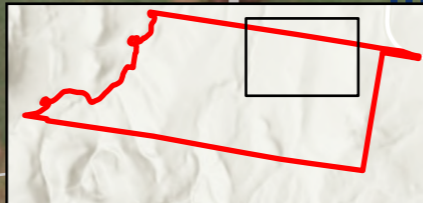
**F3-1 Project Layout**  
**Map 5 of 7**  
**Garoo Solar Farm and BESS**  
**Environmental Impact Assessment**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend			
Project Area	PV (Mounting Structure - Full Table)	Customer Substation Area	OHL Interconnection
Development Footprint	Internal Road	Transgrid Substation Area	BESS Container
PV (Mounting Structure - Half Table)	Parking and Laydown Area	Inverters	Fence
	Bridge	O&M Building	PCS Station
		Bridge Piers	Noise Walls - PCS Stations
			Noise Wall - High Voltage Transformer
			Local Track-Vehicular

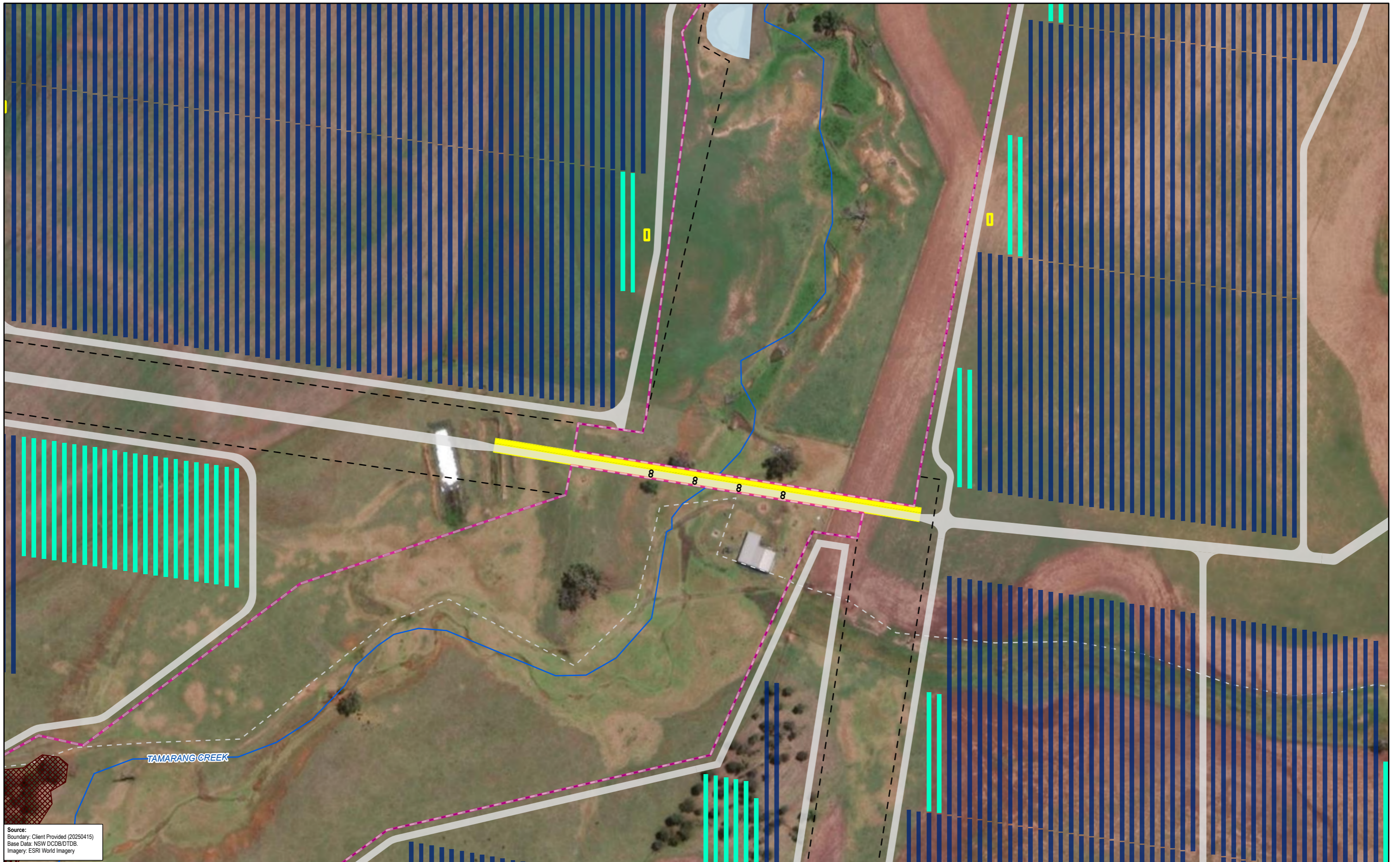


Coordinate System:  
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 Drawing Size: A3  
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**F3-1 Project Layout  
 Map 6 of 7**

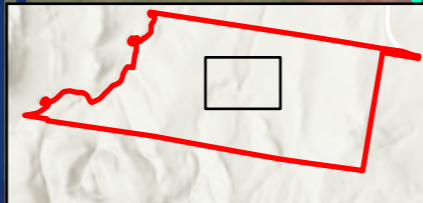
**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Legend	
Project Area	Avoidance Area
Development Footprint	PV (Mounting Structure - Half Table)
Maintained Existing	PV (Mounting Structure - Full Table)
Water Dams	Internal Road
Inverters	Bridge
	Fence
	Bridge Piers
	Local Track-Vehicular
	PCS Station



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 30/01/2026  
 Created By: NB  
 Drawing Size: A3

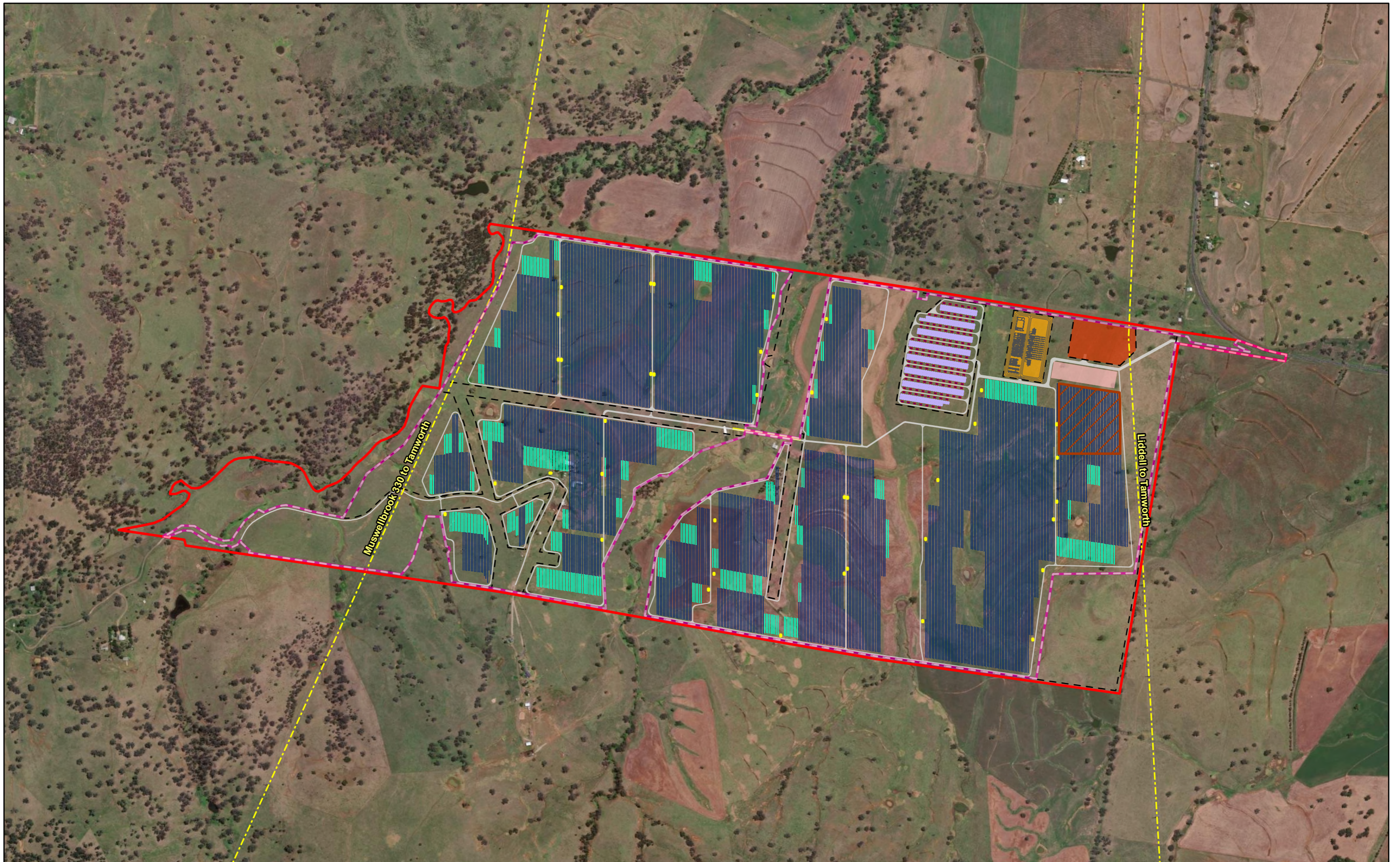
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**F3-1 Project Layout  
 Map 7 of 7**

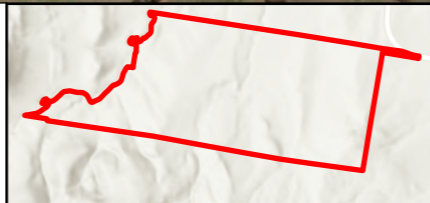
**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





Legend			
	Project Area		PV (Mounting Structure - Full Table)
	Development Footprint		Transgrid Substation Area
	Transmission Lines (existing)		Inverters
	PV (Mounting Structure - Half Table)		Parking and Laydown Area
	Internal Road		PCS Station
	Customer Substation Area		OHL Interconnection
	Fence		Temporary Workers Accommodation Camp
	BESS Container		

Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3

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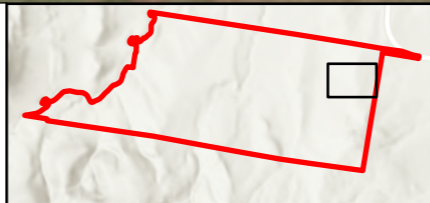
**F3-2 Temporary Workforce Accommodation Camp Location**

**Garoo Solar Farm and BESS Environmental Impact Assessment**



Legend			
	Project Area		Verandah
	Development Footprint		WWTP
	Transmission Lines (existing)		Car Parking
	Internal Road		Fence
	Admin & First Aid		Accommodation Area
	Fire Hydrant		Amenities & Services
	Loading Area		Waste Area
	Gas hazard area		Machinery Area
	Generators and fuel store		Potable Water
	Maintenance containers		
	Smoking Area		

Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB.  
 Imagery: ESRI World Imagery



Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3

0 50m 1:1,300

**F3-2 Temporary Workforce Accommodation Area**

**Garoo Solar Farm and BESS Environmental Impact Assessment**

### 3.3 LAND DETAILS

The land within the Project Area encompasses 17 freehold lots (three DPs), as detailed in **Table 3-2**. The Project Area also contains Crown Lands, which are discussed further in **Section 3.3.3**. Cadastral boundaries are shown in **Figure 3-3**.

**TABLE 3-2 LAND TITLES WITHIN THE PROJECT AREA**

Lot	DP	Title
1, 2, 14, 15, 16, 17, 19, 20, 22	755341	Freehold
2, 3, 4, 5, 6, 7	1108524	Freehold
3, 4	114643	Freehold

#### 3.3.1 RESIDENTIAL DWELLINGS

As per the Solar Guideline, the following need to be considered when assessing impacts for solar energy projects:

- Existing dwellings;
- Approved developments<sup>9</sup>; and
- Dwellings that are constructed but not yet occupied or used (Unoccupied dwellings).

##### 3.3.1.1 EXISTING DWELLINGS

For the purposes of this EIS and relevant technical studies the following two categories of dwellings were identified:

- 'Associated' (or 'involved') dwellings – dwellings located within the Project Area and / or whose owners are hosting Project infrastructure and have entered into an agreement in relation to the Project; and
- 'Non-associated' (or 'non-involved') dwellings – all other dwellings outside the Project Area but within the relevant assessment area (4 km of the Project Area).

A total of one associated dwelling and 15 non-associated dwellings have been identified.

Locations of these dwellings are summarised in **Table 3-3**.

Dwellings R3, R4 and R5 are within 0.55 km of the Development Footprint boundary. However, the approximate distance to Project infrastructure is as follows:

- R3 – 0.6 km to the Transgrid substation;
- R4 – 0.5 km to the Transgrid substation; and
- R5 – 1.2 km to the nearest solar array.

<sup>9</sup> Dwellings / tourist and visitor accommodation that have been approved through a development application or complying development certificate, or are exempt from approval, and have physically commenced construction (NSW DPHI, 2022b)

TABLE 3-3 EXISTING DWELLINGS

Dwelling	Distance to Development Footprint boundary*	Lot	DP	Landowner consultation
R1	-	2	1108524	Associated
R2a	0.30 km	1	33146	Non-associated
R2b	0.20 km	1	33146	Non-associated
R3	0.45 km	82	1046675	Non-associated
R4	0.55 km	66	755341	Non-associated
R5	0.55 km	81	1046675	Non-associated
R6	1.65 km	74	755341	Non-associated
R7	2.15 km	771	869792	Non-associated
R8	2.20 km	1	37636	Non-associated
R9	1.75 km	8	755341	Non-associated
R10	2.35 km	74	755341	Non-associated
R11	2.65 km	79	755341	Non-associated
R12	3.10 km	2	37636	Non-associated
R13	3.20 km	703	1045479	Non-associated
R14	3.30 km	75	755341	Non-associated
R15	3.40 km	84	840816	Non-associated

\* Distance to the nearest 0.5 km. Exact distances are provided in the Landscape Character and Visual Impact Assessment (refer Appendix K).

### 3.3.1.2 APPROVED AND LODGED DEVELOPMENTS

Two development applications were identified within 4 km of the Project Area. These were for a single story dwelling on Lot 1 DP 37636. This location has already been identified as hosting an existing dwelling (R8). Therefore, impacts to this location has been adequately assessed.

### 3.3.1.3 UNOCCUPIED DWELLINGS

No unoccupied dwellings were identified.

### 3.3.2 DEVELOPMENT RIGHTS

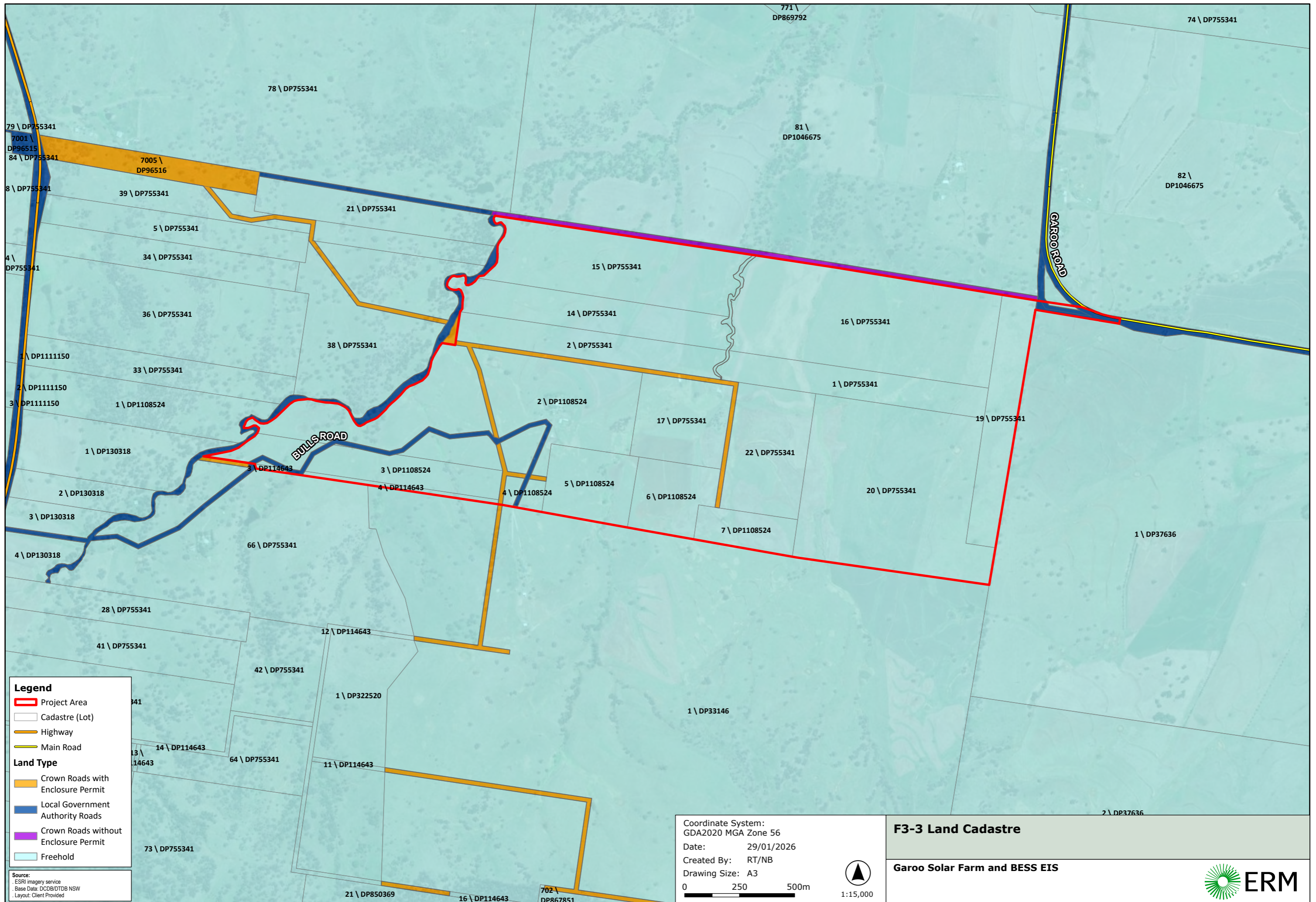
In accordance with the Solar Guideline, the potential for the Project to impact development rights of neighbouring landowners has been considered. Development rights (also referred to as 'dwelling entitlement') applies to land that is vacant of buildings or structures and meets the minimal lot size, as outlined in the relevant Environmental Planning Instrument.

All lots within 4 km of the Project Area were considered. The minimum lot size for development rights is determined by either the Tamworth Regional LEP or Liverpool Plans LEP 2011, depending on which LGA the land is located. For the assessed land, the minimum lot size is:

- Tamworth Regional LGA: 800 ha; and
- Liverpool Plains LGA: 200 ha.

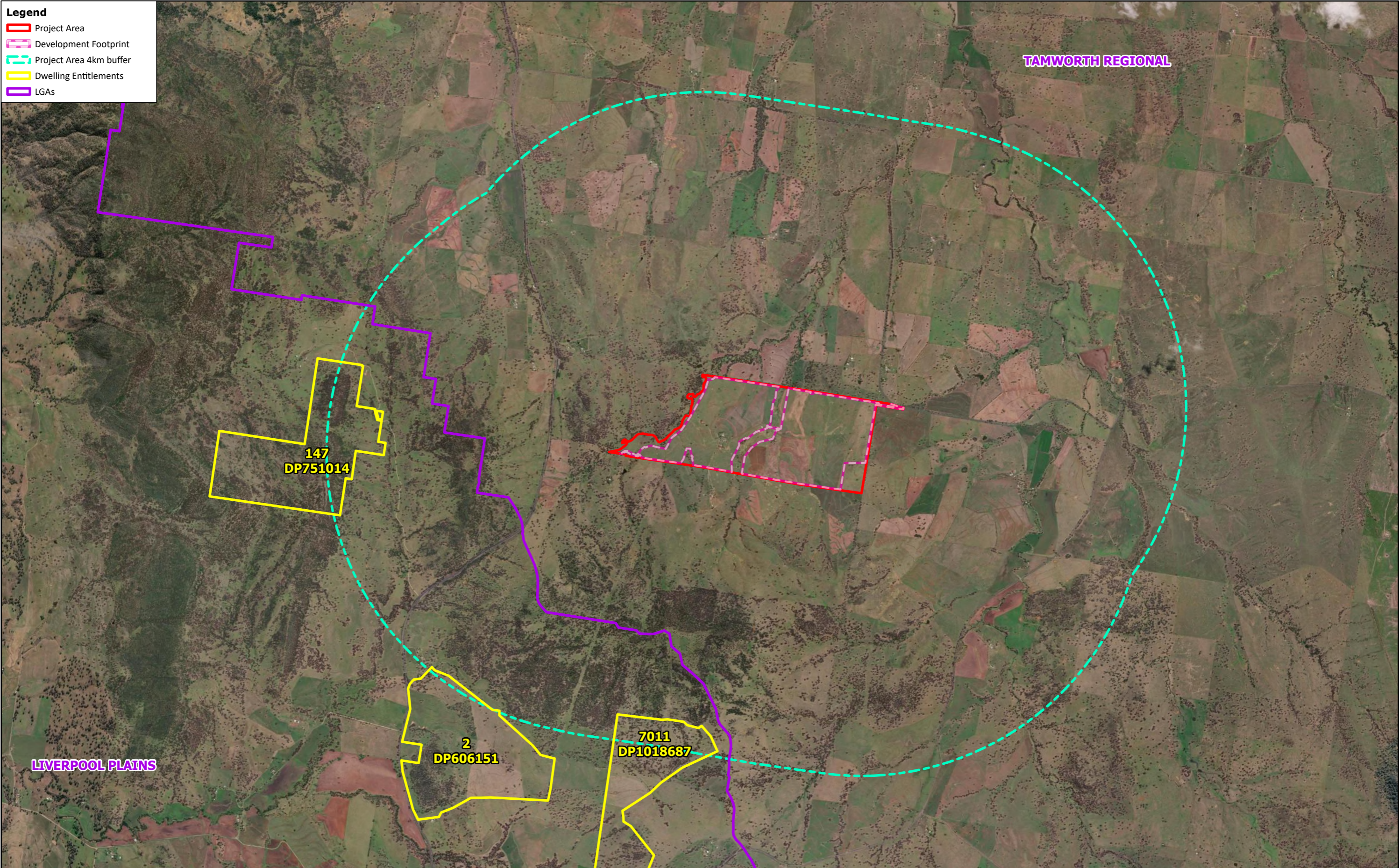
Three dwelling entitlements were identified. These were all located within Liverpool Plains LGA, as detailed in **Figure 3-4**.

As none of the dwelling entitlements immediately adjoin the development, or experience exceedances of relevant noise criteria (refer **Section 6.4**), no impact is anticipated. Therefore, no further assessment is required.



**Legend**

- ▬ Project Area
- ▬ Development Footprint
- - - Project Area 4km buffer
- ▬ Dwelling Entitlements
- ▬ LGAs



TAMWORTH REGIONAL

LIVERPOOL PLAINS

147  
DP751014

2  
DP606151

7011  
DP1018687

Source:  
Boundary: Client Provided (20250415)  
Base Data: NSW DCDB/DTDB  
Imagery: ESRI World Imagery

Coordinate System:  
GDA2020 MGA Zone 56  
Date: 29/01/2026  
Created By: NB  
Drawing Size: A3  
0 1,600m



1:50,000

**F3-4 Dwelling Entitlements**

**Garoo Solar Farm and BESS  
Environmental Impact Assessment**



### 3.3.3 CROWN LAND

The Project Area also contains Crown Land, as presented in **Figure 3-3**.

The Applicant is engaging with Crown Lands to obtain consent, where required. There are Crown Roads within the Project Area that contain an Enclosure Permit. The Crown roads with Enclosure permit are located between lots as described below:

- Between Lot 2 DP 755341 and Lot 2 DP 1108524;
- Between Lot 2 DP 755341 and Lot 17 DP 755341;
- Between Lot 17 DP 755341 and Lot 22 DP 755341;
- Between Lot 6 DP 755341 and Lot 22 DP 755341; and
- Between Lot 3 DP 1108524 and Lot 4 DP 1108524.

### 3.3.4 ACCESS

The Project Area is located on the eastern side of the New England Highway and will be accessed from Garoo Road. Garoo Road is a link road between the New England Highway and Lindsays Gap Road.

There are two emergency access points, one will be via Garoo Road, at the northwest corner of the Project Area and the second emergency access will be via Bulls Road from the southwest corner of the Project Area.

The Project will be accessed via a sealed internal track, which will be located in the existing Tamworth Regional Council land between Lot 81 DP 1046675 and Lot 1 DP 37636 (refer **Figure 3-1**). The existing unsealed road is to be upgraded to form the access route. Garoo Road will need to be upgraded at the intersection of the access route to the Project (refer **Appendix P**).

## 3.4 PROJECT ELEMENTS

**Figure 3-1** shows the conceptual Project layout for which approval is sought and considers:

- Maximising the yield of solar power generation through suitable positioning of solar panels on-site;
- Minimising environmental impacts and protecting sensitive areas and receivers identified through specialist assessments discussed in **Section 6** (including but not limited to biodiversity, heritage, agriculture, etc.); and
- Optimising accessibility of Project elements through identifying topographic constraints and strategically positioning Project elements to minimise earthworks required during construction.

This section describes the conceptual Project layout. Aspects such as final location and orientation of Project elements, construction methodology and specifications of components used are subject to change during the detailed design phase and in response to commercial and technical decisions. However, amendments would not occur outside of the Development Footprint and will remain within the impacts identified in **Section 6**.

### 3.4.1 SOLAR PANELS

The PV Modules (solar panels) will be the largest component of the Project, encompassing approximately 272.64 ha. This will comprise approximately 234,000 solar panels.

Each solar panel typically measures 2.4 m by 1.1 m, which will be organised into arrays. Each array will comprise 28 PV modules, spaced approximately 5.8 m apart. The solar arrays will be positioned in a north-south alignment and tilt along a single axis in an east to west movement. Each solar panel will be fixed to a metal mounting structure (full and/or half table), piled or screwed into the ground without the need for any concrete.

The axis of the tracking system runs from north to south, enabling the solar panels to follow the sun's path from the east in the morning through to the west in the afternoon, maintaining the best possible orientation throughout the day. A backtracking function ensures that the module rows are not shading each other, whereby the system tracks back to a point where shading is avoided to achieve the 'optimal sun angle'.

The operational rotation range of the tracking system is typically +/- 60 degrees from the horizontal position. The maximum height of the solar panels above natural ground is 1.5 m at 0 degrees of rotation and 2.9 m at 60 degree rotation. The solar panels will typically return to face east after sunset.

Solar panel materials include (but are not limited to) 'solar glass', silicon glue, and 'Eva', which is a protective layer on top of the solar cells with lower reflectance and therefore lower glare than that of normal glass.

The final number of solar panels and tracker design will be dependent on detailed design, equipment availability and commercial considerations.

A minimum of 10 m bushfire APZ will be established around the perimeter of the solar arrays.

### 3.4.2 BATTERY ENERGY STORAGE SYSTEM

The centralised large-scale BESS will be situated on the northern section of the Project Area (Lot 16 DP 755341). The BESS will be constructed within a fenced compound.

The BESS will use lithium-ion batteries (LIBs) with a nameplate storage capacity of approximately 360 MW / 1,440 MWh. The BESS will use pre-assembled and pre-tested systems, that may either be segregated into separate PCUs and BESS units, or a fully integrated system that includes the battery modules, inverters, thermal management system, circuit breakers, fire protection system as specified by the BESS manufacturer and other controls. The number and layout of battery modules and cabinets would be confirmed during detailed design.

The battery technology provider will be identified in the procurement phase along with the technology provider of other components of the modules. The selected battery will have undergone the required hazard assessment to ensure the product meets Australian Standards and legislated safety requirements.

### 3.4.3 ELECTRICAL RETICULATION AND GRID CONNECTION

#### 3.4.3.1 SUBSTATIONS

The Project will include two substation areas, the Customer substation and Transgrid substation. These will be situated in the north-eastern section of the Project Area, adjacent to the BESS Compound (refer **Figure 3-1**). The Applicant will be the designated owner of the Customer substation, whereas Transgrid will own and operate the other substation.

The substations would comprise transformers, voltage controls, associated high voltage switchgear, storage units, power quality control equipment and control and protection equipment as well as a communication tower, and drainage and oil containment system. It is currently estimated that the Project will host a total four 33 kV high voltage (HV) transformers; two 250 MegaVolt-Amperes (MVA) and two 100 MVA. The largest transformer will have a height of approximately 8.4 m.

The Customer substation will enable power flow between the solar facility and BESS, transforming electricity generated by the solar panels into a voltage suitable for charging the BESS, and, conversely, step up the voltage of stored energy discharged from the BESS to meet grid transmission requirements.

The Transgrid Substation will provide interconnection between the solar facility and the existing transmission network, ensuring energy from the solar panels and/or BESS are a compatible voltage for external transmission and distribution.

A security fence will surround the substations. Maintenance lighting will be installed for occasional night work, including emergency operations. However, the substation would normally be unlit, apart from low-level security lighting.

#### 3.4.3.2 INTERNAL ELECTRICAL RETICULATION

The internal electrical reticulation network, which connects the solar panels to the substations, will be in underground trenches of approximately 500 millimetres (mm) width and 600 mm depth. Where possible the cabling will be in underground trenches running parallel to access tracks. Where deviation from the access track is required due to geotechnical or other constraints, or to reduce overall cable length, these deviations will be positioned to minimise impact to ecological and heritage areas of high significance. There will be approximately 16.6 km of underground electrical reticulation.

Where ground conditions are not suitable for open cut trench installation, overhead single circuit electricity lines will be installed using concrete poles. The aboveground conductors may have orange balls for visual identification.

There is a single waterway crossing of Tamarang Creek. Here, cabling will be housed in a conduit, which is to be incorporated to the associated bridge. The preliminary bridge design is discussed in **Section 3.4.5**.

Access to the transmission line for construction will be via the proposed access road off Garoo Road, and farm tracks.

#### 3.4.4 PERMANENT O&M COMPOUND

A permanent site O&M compound will be constructed to provide for all operations and maintenance activities associated with the Project. The O&M compound will be located in the north east section of the Project Area. The building will have a height of approximately 2.4 m.

The O&M compound will contain at least the following:

- Control room, an office, communications equipment and staff amenities (toilet, kitchen, first aid, potable water supply, etc.);
- Static water supply for firefighting/bushfire management (may be part of above water supply) and septic system;
- Storage shed (including workshops area);

- Essential fire safety equipment will be provided at each facility within the O&M compound as required;
- Adequate rubbish waste/facilities providing appropriate waste stream separation using on-site skip bins emptied weekly or as required. Waste will not be retained permanently on-site; and
- Car parking facilities catering for at least five FTE. The parking and vehicle manoeuvring areas will be sealed with crushed road base or asphalt.

Upon commissioning, the Project will be monitored and controlled by a remote SCADA, located in the control room. Where required, assistance from an offsite SCADA engineering team may be utilised. The SCADA system is designed to maximise power output, allowing for remote control of the solar panels, and monitoring the efficiency of the power plant.

The compound will be constructed of low-combustibility or non-combustible materials in accordance with the 'National Construction Code' (ABCB, 2022).

### 3.4.5 INTERNAL ACCESS TRACKS

Vehicles will access the solar farm and BESS via Garoo Road, located in the northeastern section of the Project Area (refer **Figure 3-1**). Approximately 330 m of a currently unsealed road, that runs from Garoo Road into the northeast section of the Project Area, will need upgrading for vehicle access.

The indicative internal road network is shown in **Figure 3-1**. Where practicable, the internal access tracks network would be aligned along the route of existing farm tracks to reduce impacts and to provide upgraded access for ongoing agricultural activities. The layout of the internal access tracks is subject to further detailed design and will be designed to facilitate the safe construction and operation of the Project. Based on current design, the total length of internal tracks and access roads is approximately 26 km.

The internal access tracks will be up to 7 m trafficable width, with localised widening on curves and where required to support transportation of the over-dimensional component vehicles. The internal access tracks will be constructed with dirt, sand, gravel or sealed pavement with the final design based on material in proximity to site.

A single bridge is to be constructed across Tamarang Creek, located in the centre of the Project Area (refer **Figure 3-1**). Indicative designs indicate that the bridge structure will be approximately 247 m in length and will have an associated conduit to accommodate cabling. The indicative design is provided in **Appendix E**, and is subject to refinement during detailed design

### 3.4.6 DRAINAGE

Management of potential erosion and sediment runoff during construction will be informed and implemented in accordance with Managing Urban Stormwater: Soils & Construction (Landcom, 2004a) and the International Erosion Control Association Australasia. Suitable erosion and sediment control will be employed to reduce soil loss and off-site release of turbid and/or sediment-laden water.

The Project will be designed to incorporate standard engineering controls to manage drainage and site runoff when the Project is operational. These will be informed by the hydrology and hydraulic assessment undertaken for the Project (Section 6.9).

### 3.4.7 LIGHTING

External lighting within the Project area will generally be limited to security (e.g. motion sensor) lighting at the switchyard/substation, within the O&M compound, and as required for emergency purposes. The candescence of external lighting within the Project area will be as low as possible while still conforming to operational and safety requirements.

Unless otherwise required for operational or safety reasons, external lighting within the Project area will be oriented so that it does not shine above the horizontal. Where possible, external lighting within the Project area will face downwards and inwards to minimise impacts.

All lighting will be designed, managed and operated in accordance with 'AS 4282 Control of Obtrusive Effects of Outdoor Lighting' (Standards Australia, 2023).

### 3.4.8 LANDSCAPING

The landscaping principles adopted by the Project will comprise screen planting to mitigate visual impacts. This will adhere to general landscaping and visual screening guidelines, including the use of locally native species. This is detailed further in **Section 6.6** and **Appendix K**.

### 3.4.9 FIRE MANAGEMENT

The Project will include an appropriately designed and provisioned fire management system. The fire management system will be designed, as necessary, in consultation with Fire and Rescue NSW. The fire management system will include, at a minimum, fire detection and suppression equipment and a dedicated water storage supply.

The configuration of built in fire prevention or suppression systems within the BESS units will be determined during the Project detailed design phase (subject to selection of a preferred BESS unit supplier). Other fire prevention measures are discussed in **Section 6.13**.

### 3.4.10 EXTERNAL INFRASTRUCTURE

The Project will rely on existing waste and wastewater disposal facilities, existing accommodation housing and external road network of the region. Public power and communications infrastructure may also be utilised.

### 3.4.11 TEMPORARY CONSTRUCTION COMPOUND

Temporary facilities will be required to facilitate construction of the Project.

Temporary construction compounds and temporary laydown areas will be established for the duration of the construction works. The construction compound will comprise the following:

- Storage areas to accommodate storage of construction materials, plant, solar modules and other infrastructure elements;
- Material stockpile;
- Temporary power supply for construction; and
- Security fencing and CCTV.

Upon completion of construction works, all temporary facilities will be removed, and the land rehabilitated in line with **Section 3.5.9**, or as agreed with by the landowner.

### 3.4.12 WORKFORCE ACCOMMODATION CAMP

A temporary Workforce Accommodation Camp (the camp) would be established within the eastern section of the Project Area, covering an area of approximately 5 ha. The camp would have the capacity to house 250 workers, accommodating the peak construction workforce.

The occupation rate of the camp is likely to vary throughout the different stages of construction (refer **Section 3.5.1** and **3.5.2**), depending on the type of activities being undertaken and associated workforce requirements.

Approximately 10 on-site staff are expected for the camp services, which have been accounted in the peak workforce numbers. Medical services staff for the camp will be accommodated off-site and will be sourced via Tamworth Community Health Services.

The camp is ancillary infrastructure to the Project and the location of the camp and detailed layout is presented **Figure 3-2**.

#### 3.4.12.1 SCOPE AND STAGING

Construction of the camp is anticipated to commence in late Q4 2026, and would be ready for occupation prior to main construction activities commencing. The camp would be operational for approximately 15 months, and decommissioned at the final stages of construction (Q1 2028) given workforce required at this stage of construction would be less than 50 (refer **Figure 3-5**), allowing the final solar arrays to be installed. Construction workforce will be housed offsite for the final stages of Project construction.

The establishment of the camp would involve the following activities:

- Establish environment management and traffic controls, including drainage and erosion management;
- Undertake earthworks and vegetation clearance;
- Establish internal access tracks and connection to Garoo Road;
- Install hardstand, foundations and footings;
- Install demountable / semi-permanent buildings;
- Install utilities and services infrastructure (e.g. conduits and services including power, water and gas); and
- Install ancillary infrastructure, such as lighting and fencing.

#### 3.4.12.2 FACILITIES AND INFRASTRUCTURE

The camp would include the facilities/items detailed in **Table 3-4**.

**TABLE 3-4 WORKFORCE ACCOMMODATION CAMP - FACILITIES AND INFRASTRUCTURE**

Facilities / Items	Description of facilities and items
Accommodation	<ul style="list-style-type: none"> <li>• 75 Portable cabins (4 x 4 x 15 m).</li> </ul>
Ancillary buildings	<ul style="list-style-type: none"> <li>• Laundry, amenities blocks (Showers / washrooms), kitchen and dining facilities, gymnasiums, recreation facilities, site office, storage, training room, retail shop and maintenance container (chemical storage rooms); and</li> <li>• First aid facilities with an on-site nurse (sourced from Tamworth Community Health Services).</li> </ul>

Facilities / Items	Description of facilities and items
Amenities infrastructure	The following infrastructure would be provided to the amenities: <ul style="list-style-type: none"> <li>• Electricity – generator with solar panels, A/C unit;</li> <li>• Water – Water storage for potable water, fire water, fire pump and fire hydrant;</li> <li>• Sewerage – Grey wastewater treatment plant, including compost toilets; and</li> <li>• Internet and telecommunication services – mobile facilities.</li> </ul>
Waste Facilities	<ul style="list-style-type: none"> <li>• Grease trap; and</li> <li>• Waste collection area.</li> </ul>
Fuel / Gas / Chemical Storage	<ul style="list-style-type: none"> <li>• Storage facility for generator fuel;</li> <li>• 210 kg Gas container; and</li> <li>• Chemical container for WWTP.</li> </ul>
Transport and Parking	<ul style="list-style-type: none"> <li>• The camp will be accessed via two site access points connected to internal access roads;</li> <li>• Car parking for up to 180 car spaces;</li> <li>• Four shuttle bus parking; and</li> <li>• Truck loading / unloading area</li> </ul>
Security and night lighting	<ul style="list-style-type: none"> <li>• Closed-circuit television (CCTV) cameras; and</li> <li>• Night lighting, designed in accordance with relevant guidelines, including Australian Standard (AS) 4282-2019 Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019).</li> </ul>

The layout of the camp and associated utility connections would be finalised during the detailed design, with input from the construction contractor. During use of the camp, a range of general activities would be undertaken to support operation of the facility, such as general grounds maintenance, deliveries and waste removal. Utilities and services supply are detailed in **Section 3.5.5**.

## 3.5 CONSTRUCTION

### 3.5.1 DURATION

The duration of construction from commencement to commissioning of the Project is expected to take approximately 18 months. Peak construction will occur for six months, with mobilisation, procurement of long lead items, and commissioning accounting for the remaining period. For the purposes of assessment, is expected to commence in late-2026.

The construction of the Project may be staged, and the duration may be subject to factors including but not limited to, weather and ground conditions, the availability of contractors, equipment, workers and housing, equipment transport constraints, equipment and contractor pricing, energy market pricing and availability of energy offtake, funding requirements, application approvals and relevant development consent conditions. Some of these factors can only be determined after development consent and with further investigations required to inform the Project design, procurement and commercialisation. If construction and / or operation is to be undertaken in stages, notification of such will be provided to DPHI.

Following set up of temporary construction compound areas, the upgrade of existing access roads and construction of new access roads will be the first construction activities, followed by the phasing of the solar array's assembly and installation, then ancillary facilities.

**Table 3-5** outlines an indicative construction timeline for the Project. **Table 3-6** presents the anticipated timing of key Project milestones and indicative peak workforce FTEs. Note that construction stages may overlap.

**TABLE 3-5 INDICATIVE CONSTRUCTION TIMELINE**

Construction Activities	Description of works	Estimated Commencement	Estimate Duration
Stage 1: Site setup & delivery	Intersection upgrade, underground cabling, cut and fill work works, clearing of area for panels, and temporary construction compound	November 2026	4-5 months
Stage 2: Site Establishment	Site mobilisation and set up	December 2026	2-3 months
Stage 3: Construction and Installation	Installing mounting structures, panels, and electrical infrastructure	April 2027	9 months
Stage 4: Commissioning and Testing	Working with AEMO on commissioning process	December 2027	4 months

**TABLE 3-6 INDICATIVE MONTHLY CONSTRUCTION SCHEDULE**

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Stage 1: Site setup & delivery	1	1	1	1	1													
Stage 2: Site Establishment		1	1	1														
Stage 3: Construction and Installation						1	1	1	1	1	1	1	1	1				
Stage 4: Commissioning and Testing															1	1	1	1

### 3.5.2 WORKFORCE AND HOURS OF OPERATIONS

The Project is anticipated to have a peak construction workforce of approximately 250 FTE, with an average of 180 FTE (**Figure 3-5**).

Construction activities will be restricted to standard daytime construction working hours:

- 7:00 am to 6:00 pm (Monday to Friday);
- 8:00 am to 1:00 pm (Saturday); and
- No construction will occur on Sundays or Public Holidays.

Construction outside these hours will be undertaken in accordance with the 'Interim Construction Noise Guideline' (NSW DECC, 2009) as follows:

- For the delivery of materials required by the NSW Police or other authorities for safety reasons; and
- Where it is required in an emergency to avoid the loss of lives, property and / or prevent environmental harm.

In addition, construction outside recommended standard hours might be undertaken as follows:

- Activities that are inaudible at non-associated dwellings; and
- With agreement by the DPHI.

The Applicant will engage local workers and services, where practicable and available. Consultation with Tamworth Regional Council has taken place with strategies currently being developed to ensure the Project has a positive impact on the economy and availability of long-term housing. The Applicant will continue to engage with relevant stakeholders, Council and EnergyCo to address short-term housing options during construction.



FIGURE 3-5 ESTIMATED WORKFORCE NUMBERS

### 3.5.3 SITE PREPARATION AND CONSTRUCTION ACTIVITIES

Site preparation works may include clearing, erosion and sediment control, site levelling, construction of access roads, site drainage works, fencing, foundations, trenching and construction of hardstands, office and car parking areas.

Most of the infrastructure will be prefabricated off site and delivered to the Project area, where it will be assembled and installed. Set up of the temporary construction compound areas and ancillary facilities, the upgrade of existing internal access tracks and construction of new access roads will be the first construction activities. This will be followed by the phased installation of the Project elements in **Section 3.4**.

Construction activities will include (at a minimum):

- Civil works including:
  - Upgrade of existing access roads and construction of new access roads;
  - Grading, levelling and earthworks (including the construction of hardstands for key infrastructure items);
  - Sediment and erosion control measures and water management structures;
  - Visual enhancement plantings if deemed;
  - Creek crossings; and
  - Minor earthworks to facilitate installation of security fencing.
- Excavation of trenches and the laying of power and instrumentation cables;
- Installation of site compounds and concrete batching plants;
- Solar panels:
  - Minor trenching works and land forming, including localised cut and fill areas to achieve more consistent gradients beneath the solar panels and to facilitate drainage;
  - Driven or screw piles;
  - Install mounting structures and tracker tubes; and
  - Secure solar panels to tracker tubes.
- Install PCUs, BESS, O&M compounds and associated infrastructure;
- Installation of internal electricity network (underground cables/overhead power lines);
- Test and commission infrastructure; and
- Site rehabilitation and revegetation.

### 3.5.4 TEMPORARY INFRASTRUCTURE AND ACTIVITIES

#### 3.5.4.1 TEMPORARY CONSTRUCTION COMPOUND

Temporary facilities will be required to facilitate construction of the Project. A temporary construction compound will be established for the duration of the works and will comprise:

- Site offices, car parking and amenities for the construction workforce;
- Temporary laydown area to accommodate storage of construction materials, plants, equipment and other infrastructure elements;
- Material stockpile;
- Temporary power supply for construction; and
- Security fencing and CCTV.

All temporary facilities will generally be located within the Development Footprint. Upon completion of construction works, all temporary facilities will be removed, and the land rehabilitated in line with **Section 3.5.9**, or as agreed with by the landowner.

#### 3.5.4.2 TEMPORARY CONCRETE BATCHING PLANTS

Temporary rock crushing facilities and concrete batching plants are proposed to process excavated material for the electrical infrastructure, internal access roads, O&M facility, substations and switchyard. Use of materials sourced onsite will be confirmed through geotechnical testing prior to works.

Up to two temporary concrete batching plants and rock-crushing facilities will be established within the Project Area. While the exact details of the facilities will be determined closer to construction, the area required for the plant and storage of materials are estimated to be approximately 1 ha, located within the Development Footprint.

The temporary concrete batching plants will comprise:

- Cement silos;
- Stockpile areas for the storage of the aggregates, sand and other raw materials;
- Water tanks;
- Wastewater settling pit (to recycle water and prevent wash out overflowing onto unsealed ground and entering waterways);
- Parking for truck mixers and pumps;
- Fuel bunker and bunded area for concrete additives; and
- Rock crushing facility.

The cement and the aggregates needed for concrete production will be sourced locally where possible.

The demand for concrete and rock for access road and other construction purposes is likely to exceed the license threshold of 150 tonnes per day or 30,000 tonnes per year. Therefore, an Environmental Protection Licence (EPL) from the EPA (under the Protection of the Environment Operations Act 1997 (NSW) (POEO Act)), will be required. The daily onsite rock crushing capacity will be quantified following pre-construction geotechnical assessments to determine the availability of suitable onsite material.

#### 3.5.5 SERVICES AND UTILITIES

##### 3.5.5.1 WATER SUPPLY

Construction of the Project will require water for use in civil works, dust suppression, workforce use and potential watering of revegetated areas. The volumes of water required will be determined following detailed design, with estimates provided in **Section 6.9**.

Water will be supplied from an offsite local source, using an approved facility. No water network upgrade will be required for the Project construction and operation. Tamworth Regional Council and Liverpool Plains Shire Council have confirmed they can service maximum water demands with existing council facilities (refer **Section 6.10.1.2**), with water supply agreements will be secured prior to construction commencing. Existing farm dams are to be retained for grazing and as an emergency water source for fire suppression.

Additional water tank/s with storage may also be included within the Development Footprint for the purposes of construction and maintenance of the Project.

### 3.5.5.2 POWER SUPPLY

The power supply for construction will be from the existing transmission network in the area (supplied via agreements with the local network operator) and supported by diesel generators as required. Power sourced from existing 330 kV line will not be available during the construction phase.

No additional supply will be required for the Project operations.

### 3.5.5.3 WASTE MANAGEMENT

Waste storage locations will be provided within the Project Area for the construction phase. Sufficient space will be allowed for the separation and storage of different waste streams and to facilitate recycling and reuse of items (where practical).

**Section 6.16** describes the storage, management and disposal of waste generated during the Project construction, operation and decommissioning. It also describes primary waste streams expected to be generated during all phases of the Project.

Tamworth Regional Council and Liverpool Plains Shire Council have confirmed they will work proactively with the Applicant to identify practical and compliant waste management solutions.

### 3.5.5.4 TELECOMMUNICATIONS

Communications networks will be constructed and used within the Project Area including but not limited to fibre optics (with cellular and/or landline backup) and radio support (type, channels and call-signs). Telecommunications ensure the secure control of the solar arrays and substations, which includes emergency shutdowns and management of any maintenance requirements.

### 3.5.5.5 PLANT AND EQUIPMENT

**Table 3-7** lists the indicative plant and equipment required to facilitate construction, and the vehicles required to transport these items to the Project Area. Construction machinery will generally remain on site for the duration of the earthworks portion of the construction and will therefore be only required to access and egress the site once for the construction works.

Construction equipment will be sourced locally from the Tamworth Regional LGA, subject to availability and cost considerations. Steel used for concrete foundations will be sourced from within NSW, subject to cost and availability.

**TABLE 3-7 INDICATIVE CONSTRUCTION PLANT**

Construction Equipment	Use
Truck and dog trailers	Civil works
Piling rigs	Installing solar array piles
Dozers or equivalent	Levelling and road development
Excavators (or similar)	Earthworks
Graders	Road development and levelling activities

Construction Equipment	Use
Vibrating rollers	Road construction
Front end loaders	Moving and loading soil and aggregate materials
Water cart	Road construction and dust suppression
Cranes	Lifting loads, erecting steel and moving heavy plant
Trenchers	Installing underground conduits and cabling
Portable generators	Temporary site power
Hand power tools and equipment	Building

### 3.5.6 TRANSPORT ROUTE

The Port of Newcastle in NSW will be used for import and unloading of the major Project components. Other specialist equipment will be sourced from various areas, whilst consumables will be sourced locally from the Tamworth region (where available and commercially viable).

Heavy vehicles will transport materials and equipment associated with the Project construction.

These will consist of vehicles including B-Doubles (standard vehicles), semitrailers, 'truck and dogs', MRV and HRV, and light vehicles. The Project will generate up to five High Risk OSOM vehicle movements during construction.

The proposed transport route for deliveries of heavy vehicles and High Risk OSOM vehicles are detailed in **Section 6.11** and the Transport Impact Assessment (TIA) (refer **Appendix P**), and shown in **Figure 3-5**

### 3.5.7 SITE ACCESS

The main access to the Project will be via Garoo Road, as detailed in **Section 3.3.4** and presented in **Figure 3-1**. Other access points may be used in case of emergency, including Bulls Road in the south-western corner of the Project Area, which directly connects the Project Area to the New England Highway.

### 3.5.8 ROAD UPGRADES

A Route Assessment identified that the preferred transport route is suitable for use by vehicles associated with the Project, with road upgrades only required at the Garoo Road / site access intersection. This intersection requires a Basic Right and Basic Left turn treatment.

Further detail regarding road access is provided in **Section 6.11** and **Appendix P**.

### 3.5.9 POST CONSTRUCTION SITE REHABILITATION

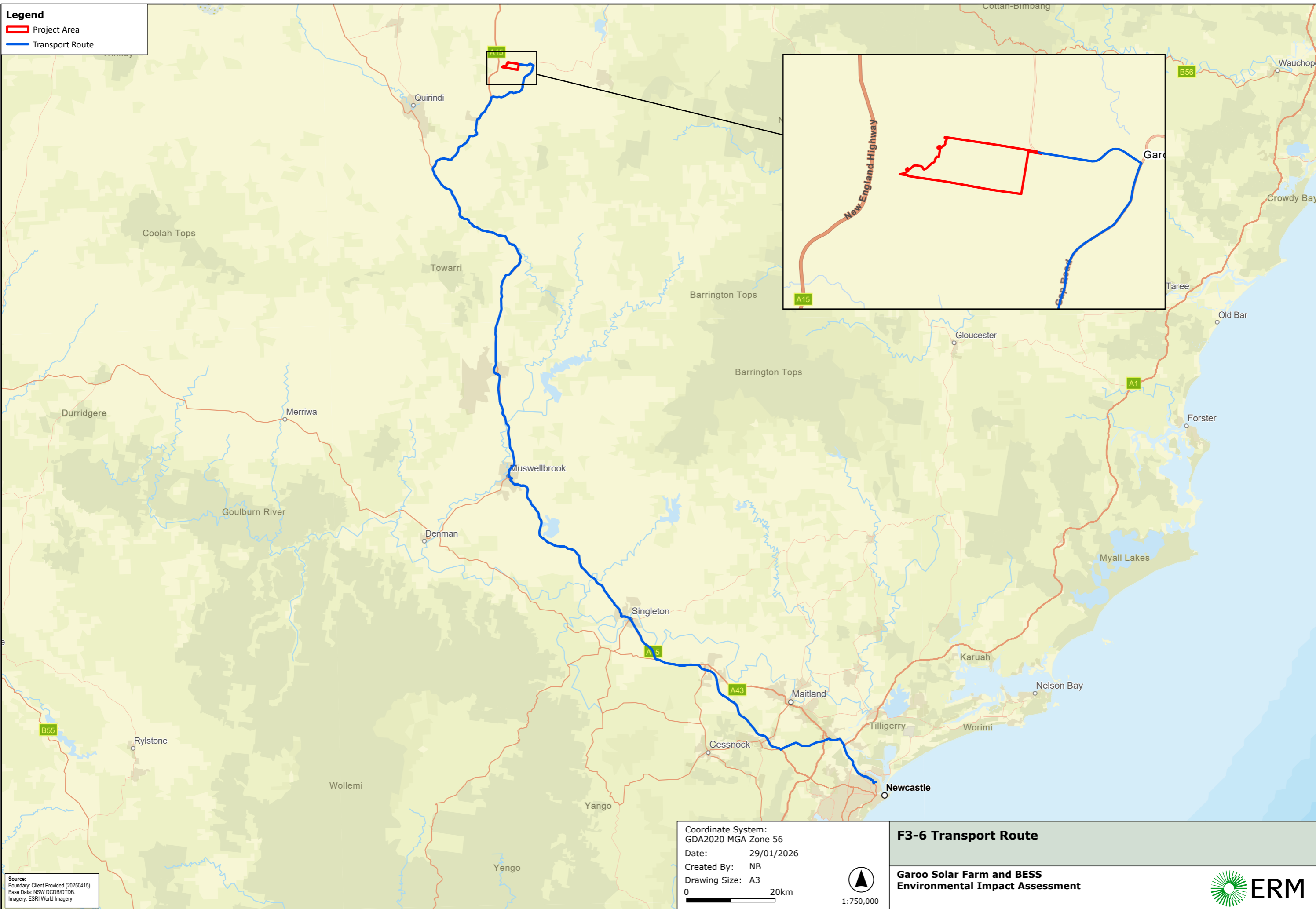
The Project Area will be progressively rehabilitated throughout construction. When construction is completed, temporary plant and equipment will be removed, and disturbed areas will be revegetated and rehabilitated in consultation with associated host landowners.

Adequate sediment, soil and erosion controls will be implemented during ground disturbing works. Rehabilitation activities will be generally undertaken in accordance with the 'Managing Urban Stormwater: Soils and Construction - Volume 1' (Blue Book) (Landcom, 2004b).

Post-construction rehabilitation requirements and processes will be detailed in the Environmental Management Strategy (EMS) and undertaken in accordance with relevant conditions of development consent (refer **Section 3.9**).

**Legend**

- Project Area
- Transport Route



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3

0 20km

1:750,000

**F3-6 Transport Route**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**

## 3.6 OPERATION

The Project elements described in **Section 3.4** will be subject to ongoing monitoring and maintenance for the life of the Project.

Operational and maintenance activities associated with the Project will include:

- Servicing of inverters, the BESS and substation equipment on an annual basis;
- Daily monitoring of equipment; and
- Management of vegetation growth between the panels and the Project boundary.

### 3.6.1 COMMISSIONING

The commissioning of the Project would be based on an agreed schedule, which will be staged to allow for partial commissioning of select plant while the project is under construction. Final commissioning works will involve checks and authorisation on all high voltage equipment prior to connection to the grid.

Operational infrastructure includes (but is not limited to):

- Solar Panels;
- BESS;
- Substation equipment;
- Communications equipment;
- Electrical Reticulation and Grid Connection;
- Internal access roads;
- Gates and fencing;
- O&M compound; and
- Lighting.

### 3.6.2 OPERATIONAL HOURS AND WORKFORCE

While the Project will be monitored remotely, the solar panels and other equipment will require regular maintenance. An operations workforce of approximately five to ten FTE is anticipated to be required for this purpose. Site maintenance will be undertaken by staff on an ongoing basis with activities scheduled consistently throughout each year. Site maintenance will include at least the landscaping, cleaning of solar panels, maintaining access roads and APZs (if required), repair and replacements of Project's components (e.g., reticulation network, substations, transmission line and O&M compound).

Most of the maintenance will be undertaken during routine maintenance; however, circumstances may arise where additional specialist technical maintenance staff are required (e.g., such as unplanned equipment failure). Over the life of the Project, infrastructure will be maintained and/or upgraded, as required, to ensure the health and safety of occupants of buildings.

Daily maintenance will occur during standard working hours. Outside of emergencies or major asset inspection or maintenance programs, night works or works on Sundays or public holidays will be minimal; however, they would be undertaken in accordance with the 'Interim Construction Noise Guideline' as described in **Section 3.5.2**.

Whilst most activity is anticipated to occur during business-hours Monday to Friday, access to the Project will be required on a 24-hour basis, seven days a week.

### 3.6.3 SERVICES AND UTILITIES

#### 3.6.3.1 WATER SUPPLY

Water will be required during operation for maintenance and staff amenities. Rainwater will collect water from the O&M compound for storage and use onsite. During periods when insufficient water is collected onsite, water will be imported to the site. Potable water will be required for workforce use, and a rainwater capture and reuse system will be used on site for top up of equipment reservoirs, washdown, and toilet flushing. Nearby Councils have confirmed they can service operational water demands (refer **Section 6.10.1.2**).

Water tanks will be installed on site to store water for bushfire protection and other non-potable water uses.

The volumes of water required will be determined following detailed design, with estimates provided in **Section 6.10**. No unregulated discharge of water from the Project's activities will occur.

#### 3.6.3.2 POWER SUPPLY

During the operational phase, the Project will use power from the existing network. For the decommissioning phase, an on-site generator will be used for power.

#### 3.6.3.3 WASTE STORAGE

Waste storage locations will be provided within the Project area. Sufficient space will be allowed for the separation and storage of different waste and for recycling and reuse of items.

**Section 6.16** describes the storage, management and disposal of waste generated during the Project operation and decommissioning.

### 3.7 DECOMMISSIONING AND REHABILITATION

The Applicant has entered into Agreements with host landowners for the construction and operation of the Project as described in **Section 2.7.1**.

The Project elements will operate for a minimum of 30 years. At the end of the asset's life, one of the following options will be undertaken:

- Repower as a solar farm using the existing or "best practice" at the time technology; or
- Replacement of solar panels and other infrastructure where generally within the predictions and criteria in this EIS; or
- Decommission the Project and remove the solar panels and associated infrastructure in accordance with a 'Decommissioning and Rehabilitation Plan'.

If replacement infrastructure is installed, these will remain within the Project Description and predicted impacts for which any development consent is granted (unless a modification is sought and granted).

The Applicant will fund and execute the decommissioning of the Project. When decommissioning occurs, the following steps will be taken:

- Key stakeholders including landowner and relevant regulators will be consulted;
- In general, all above ground structures will be removed and the land rehabilitated;

- Some infrastructure may be retained in situ (e.g., internal access roads) where beneficial and as agreed with the landowner; and
- Some below ground infrastructure may be left in situ to avoid further disturbance and minimise clearing of revegetated areas, unless otherwise agreed with the landowner and/or specified in the conditions of development consent.

The Applicant aims to recycle all dismantled and decommissioned infrastructure and equipment and remove it from the Project Area, where possible. Materials that cannot be recycled will be disposed of at a licensed waste management facility (refer **Section 6.16**).

A Decommissioning and Rehabilitation Plan will be prepared for the Project no less than five years prior to decommissioning and / or in accordance with any project approval requirements. It is anticipated that the decommissioning and rehabilitation phase would take up to 6 months to complete, with the Project Area being returned, as far as practicable, to its condition prior to the commencement of construction.

### 3.8 LAND SUBDIVISIONS

The Project includes a subdivision to create a separate land parcel for the Transgrid substation in the event this be transferred to Transgrid. Transgrid will obtain freehold title through either transfer, dedication, or acquisition.

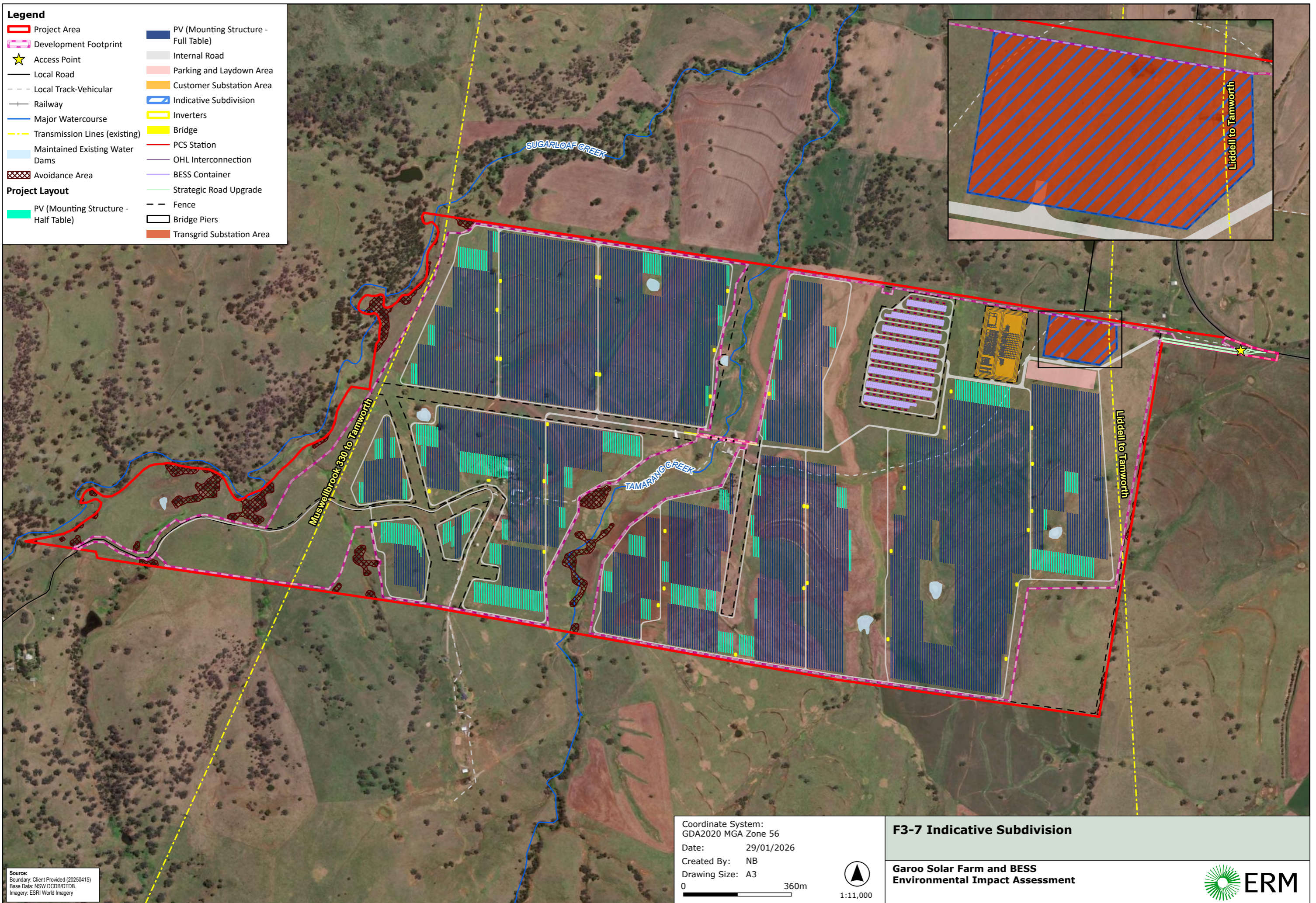
**Figure 3-7** identifies the required subdivision. The lot size and configuration are indicative and subject to further detailed design and confirmation with Transgrid and the landowner during the detailed design phase.

### 3.9 ENVIRONMENTAL MANAGEMENT

An EMS will be developed to provide the overall framework for environmental management during the construction, operation, decommissioning and rehabilitation of the Project to ensure that appropriate measures and processes are in place to manage identified environmental risks and provide for ongoing continual improvement. The EMS will incorporate mitigation measures that have been identified throughout this EIS and will include relevant management plans consistent with any conditions of development consent.

**Legend**

Project Area	PV (Mounting Structure - Full Table)
Development Footprint	Internal Road
Access Point	Parking and Laydown Area
Local Road	Customer Substation Area
Local Track-Vehicular	Indicative Subdivision
Railway	Inverters
Major Watercourse	Bridge
Transmission Lines (existing)	PCS Station
Maintained Existing Water Dams	OHL Interconnection
Avoidance Area	BESS Container
<b>Project Layout</b>	
PV (Mounting Structure - Half Table)	Fence
Transgrid Substation Area	Bridge Piers
	Transgrid Substation Area



Coordinate System:  
GDA2020 MGA Zone 56

Date: 29/01/2026

Created By: NB

Drawing Size: A3

0 360m

1:11,000

**F3-7 Indicative Subdivision**

**Garoo Solar Farm and BESS  
Environmental Impact Assessment**

Source:  
Boundary: Client Provided (20250415)  
Base Data: NSW DCDB/DTDB  
Imagery: ESRI World Imagery

## 4. STATUTORY CONTEXT

### 4.1 POWER TO GRANT APPROVAL

Approval for the Project will be sought under Part 4, Division 4.7 of the EP&A Act, which outlines the approval pathway for development deemed to be SSD. The Project is defined as 'electricity generating works' (Clause 2.35 of Transport and Infrastructure SEPP). Electricity generating works with an estimated development cost exceeding \$30m are State Significant Development pursuant to Schedule 1, Clause 20 of Planning Systems SEPP.

The Project has an Estimated Development Cost exceeding \$30m and therefore, the Project is classified as SSD under Part 4 of the EP&A Act.

### 4.2 PERMISSIBILITY

#### 4.2.1 SEPP (TRANSPORT AND INFRASTRUCTURE) 2021

Clause 2.36(1)(b) of the T&I SEPP states that "electricity generating works" may be carried out with development consent on land within a prescribed non-residential use zone. The Project area is zoned RU1 Primary Production under Tamworth Regional LEP. The RU1 zone is a prescribed non-residential zone. The Project is permissible with development consent pursuant to Clause 2.36(1) of the T&I SEPP.

### 4.3 OTHER APPROVALS

Other approvals that are potentially required under relevant NSW and Commonwealth legislation are discussed in **Table 4-1**. It also identifies pre-conditions to exercising the power to grant approval (including mandatory conditions) and identifies in which section of the EIS each is addressed.

**TABLE 4-1 OTHER APPROVALS REQUIRED**

Statutory requirement	Description	Where addressed
<i>Consistent approvals that cannot be refused if necessary for carrying out an approved SSD and are to be consistent with the terms of the SSD approval.</i>		
<i>Roads Act 1993 (Roads Act)</i>	Consent from the appropriate roads' authority under section 138 of the Roads Act will be required as the Project will undertake works on public roads.	Section 6.11 Appendix P
<i>EPBC Act approval and whether the bilateral agreement applies</i>		
<i>EPBC Act 1999</i>	The Project was self-referred under the EPBC Act in June 2025 (EPBC 2025/02758). This has been reviewed by DCCEEW (Commonwealth) and decision has been issued confirming the Project is not a controlled action. Therefore, the Project does not require further assessment or approval under EPBC Act before it can proceed. .	Section 6.1

Statutory requirement	Description	Where addressed
<i>Other approvals not expressly integrated into the SSD assessment under the EP&amp;A Act</i>		
<i>Crown Land Management Act 2016</i>	Development on Crown Roads and waterways has been assessed as part of this EIS, and native title has also been assessed.  Under Clause 69A of the <i>Crown Land Management Regulation 2018</i> , landowner consent is not required for a development application for State Significant Development. Consultation with NSW DPE Crown Lands confirmed no landowner permissions were required.	Section 3.3.3 Section 6.2 Appendix H
<i>Conveyancing Act 1919</i>	Lease of a solar farm and BESS sites site is treated as a lease of premises (NSW Land Registry Service, 2024). Therefore, despite the lease being greater than five years, the Project does not constitute a 'current plan' within the meaning of section 7A <i>Conveyancing Act 1919</i> . Where consent is not required, the 'Subdivision Certificate' or 'Councils Certificate' panel on the Administration Sheet should be ruled through prior to lodgement of the plan.	Not applicable
<i>Biodiversity Conservation Act 2016 (BC Act)</i>	The Biodiversity Development Assessment Report (BDAR) has been prepared to accompany this EIS and provides a discussion of the management and protection of listed threatened species of native flora and fauna and Threatened Ecological Communities (TECs). The BDAR assesses biodiversity offsets consistent with the Biodiversity Offset Scheme. Given the Project is SSD, entry into the Biodiversity Offset Scheme is automatically triggered	Section 6.1 Appendix G
<i>Local Land Services Act 2013</i>	A Land Category Assessment (LCA) has been prepared to accompany this EIS. All category 1 land has been excluded from the assessment (and subsequently offset in NSW) under the Biodiversity Assessment Method (BAM) in consultation with relevant regulators.	Section 6.1
<i>Approvals not required under SSD Section 4.41 of the EP&amp;A Act</i>		
<i>Fisheries Management Act 1994</i>	The Project will not require a dredging or reclamation work permit under section 201, a marine vegetation regulation of harm permit under section 205, or a passage of fish not to be blocked permit under section 219.	Not applicable
<i>Heritage Act 1994</i>	The Project will not require a Part 4 approval to carry out an act, matter or thing referred to in section 57(1), or an excavation permit under section 139.	Section 6.2 Appendix H
<i>National Parks and Wildlife Act 1979</i>	As the Project is assessed as being an SSD, an Aboriginal Heritage Impact Permit (AHIP) is not required under Part 4.7 clause 4.41 (1)(d) of the EP&A Act. Instead, Aboriginal cultural heritage will be managed by an Aboriginal Cultural Heritage Management Plan (ACHMP).	Section 6.2 Appendix H

Statutory requirement	Description	Where addressed
<i>Rural Fires Act 1997</i>	The Project will not require a bushfire safety authority under section 100B, as the development does not involve subdivision for residential or rural residential development. Under Section 100C, emergency bush fire hazard reduction and management works can be undertaken on any land without consent or approval under the EP&A Act.	Section 6.11 Appendix Q
<i>Water Management Act 2000</i>	A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91 of the <i>Water Management Act 2000</i> pursuant to Section 4.41 of the EP&A Act.	Not applicable

#### 4.4 PRE-CONDITIONS TO EXERCISING THE POWER TO GRANT APPROVAL

The pre-conditions to exercising the power to grant approval for the project are described in **Table 4-2**.

**TABLE 4-2 PRE-CONDITIONS**

Statutory requirement	Pre-condition	Where addressed
Clause 2.42 of the T&I SEPP	Development consent must not be granted for solar electricity generating works in a regional city that is SSD or regionally significant development unless:  (a) is located to avoid significant conflict with existing or approved residential or commercial uses of land surrounding the development, and  (b) is unlikely to have a significant adverse impact on the regional city's—  (i) capacity for growth, or  (ii) scenic quality and landscape character."	Section 6.5 Section 6.15
State Environmental Planning Policy (Resilience and Hazards) 2021	Under section 4.6, a consent authority is required to consider whether a proposed development site is contaminated and whether it is suitable for the intended use.	Section 6.7

#### 4.5 MANDATORY MATTERS FOR CONSIDERATION

This EIS has been prepared in accordance with Part 8, Division 5 of the EP&A Regulation, which specifies the form and content of an EIS. **Appendix C** indicates each requirement and where each is addressed in this EIS.

**Appendix C** also describes each mandatory matter for consideration and identifies where each is addressed in this EIS. It also identifies pre-conditions to exercising the power to grant approval (including mandatory conditions) and identifies in which section of this EIS each is addressed.

## 5. COMMUNITY ENGAGEMENT

The Applicant recognises that individual communities are both diverse and unique. Across its renewable energy portfolio, it works closely with local communities to deliver projects that leave a positive, long-term impact in the regions in which it operates.

Stakeholder engagement is an integral part of any major development. As part of the development of the Garoo Solar Farm and in preparing the EIS, engagement has been and will continue to be undertaken with a range of stakeholders including various local and NSW Government agencies, the local community, interest groups and neighbouring and proximate landowners.

Engagement provides a unique opportunity for projects to benefit from local insights, better anticipate unforeseen issues and build lasting partnerships that are key to forging a social license to operate for the 30-plus year project lifespan.

### 5.1 COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

The Community and Stakeholder Engagement Strategy (CSES) was prepared to guide consultation with stakeholders during the scoping report, EIS, and response to submissions stages, and through further amendments. The CSES complies with NSW Government consultative requirements under relevant planning instruments and guidelines, including:

- *Undertaking Engagement Guidelines for State Significant Projects* (NSW DPHI, 2024c);
- *State Significant Development Guidelines* (NSW DPHI, 2024a);
- *Community Participation Plan* (NSW DPHI, 2024d);
- *Social Impact Assessment Guideline for State Significant Projects* (NSW DPHI, 2023); and
- *Large-Scale Solar Energy Guideline* (NSW DPHI, 2022a).

The International Association of Public Participation (IAP2) (IAP2, 2015) Quality Assurance Standard (IAP2, 2015) has also informed the engagement approach, being the engagement industry best practice guideline.

### 5.2 ENGAGEMENT PRINCIPLES

The CSES provides the blueprint for robust engagement consistent with the following principles:

- **Genuine:** Provide clear and concise information about the Project, including impacts and benefits; and provide opportunities for meaningful consultation relevant to the level of impact and interest to the Project;
- **Responsive:** Address specific concerns and enquiries in a timely manner through proactive and clear two-way communication; and
- **Transparent:** Be open and honest about the Project, engage with clarity, and build trust through transparent engagement with relevant stakeholders.

These principles align with the communication and engagement principles outlined in the *Tamworth Regional Council Communications Strategy* (TRC, 2022), which guides engagement activity in the Tamworth region.

### 5.3 STAKEHOLDER IDENTIFICATION

The Applicant has identified relevant stakeholders who are affected by, or have an interest in, or influence on, the Project. Identification was undertaken during the scoping phase of the Project to enable community members to be part of the planning and development process and ensure meaningful engagement during the early stages of the Project.

Stakeholders were identified through various methods, including:

- the compilation of land ownership information;
- consideration of the local and wider community, industry and service providers, and engaging with local businesses; and
- community information sessions.

**Table 5-1** lists the stakeholder groups who have been or will be engaged throughout the Project lifecycle. Stakeholders have been grouped based on organisation type, individual interest or interaction with the Project.

This list will be updated in response to stakeholder feedback as the Project progresses.

**TABLE 5-1 IDENTIFIED STAKEHOLDERS**

Stakeholder group	Stakeholders	Potential interests/concerns
State and Federal elected Members	<ul style="list-style-type: none"> <li>• The Hon. Kevin Anderson MP, State Member for Tamworth; and</li> <li>• The Hon. Barnaby Joyce MP, Federal Member for New England.</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Opposition to renewable energy projects;</li> <li>• Community wellbeing, including visual amenity, audible impacts;</li> <li>• Impact on local residents and businesses;</li> <li>• Economic benefits;</li> <li>• Impacts on local roads and infrastructure;</li> <li>• Local job opportunities;</li> <li>• Local skill requirements;</li> <li>• Local accommodation requirements; and</li> <li>• Decommissioning.</li> </ul>
State and Federal representatives and agencies	<ul style="list-style-type: none"> <li>• Australian Energy Infrastructure Commissioner;</li> <li>• Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW);</li> <li>• EnergyCo NSW;</li> <li>• Heritage NSW;</li> <li>• NSW Biodiversity, Conservation and Science (BCS) directorate;</li> <li>• NSW DCCEEW;</li> <li>• NSW Department of Planning, Housing and Infrastructure (DPHI);</li> <li>• NSW Environmental Protection Authority (EPA);</li> <li>• NSW Local Land Services;</li> <li>• NSW Rural Fire Service;</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Project approval;</li> <li>• Regulatory compliance;</li> <li>• Environmental impact;</li> <li>• Transport of materials to site;</li> <li>• Local job opportunities;</li> <li>• Local skill requirements;</li> <li>• Decommissioning; and</li> <li>• Meeting renewable energy and emissions targets.</li> </ul>

Stakeholder group	Stakeholders	Potential interests/concerns
	<ul style="list-style-type: none"> <li>• Regional Development Australia (RDA) Northern Inland Region;</li> <li>• Transport for NSW (TFNSW); and</li> <li>• WaterNSW.</li> </ul>	
Local government – elected officials and executive staff	<ul style="list-style-type: none"> <li>• Tamworth Regional Council:               <ul style="list-style-type: none"> <li>◦ Cr Russel Webb, Mayor and elected councillors;</li> <li>◦ Paul Bennett, General Manager;</li> <li>◦ Peter Resch, Director Regional Services; and</li> <li>◦ Gina Vereker, Director Liveable Communities.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Impact on local residents and businesses;</li> <li>• Economic benefits;</li> <li>• Impacts on local roads and infrastructure;</li> <li>• Impacts on accommodation;</li> <li>• Impacts on tourism;</li> <li>• Decommissioning, including materials to landfill; and</li> <li>• Waste management.</li> </ul>
Aboriginal communities	<ul style="list-style-type: none"> <li>• The Traditional Owners, the Kamilaroi/Gamilaroi/Gomeroi people of the Kamilaroi Nation;</li> <li>• Nungaroo Local Aboriginal Land Council<sup>10</sup>;</li> <li>• Tamworth Local Aboriginal Land Council;</li> <li>• The Tamworth Coalition of Aboriginal Community Controlled Organisations;</li> <li>• Aboriginal Affairs NSW;</li> <li>• Supply Nation;</li> <li>• National Indigenous Australians Agency;</li> <li>• AbSec;</li> <li>• NTS Corp; and</li> <li>• Office of the Registrar of the Aboriginal Land Rights Act.</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Impact on Aboriginal social, historical, scientific and aesthetic objects or values;</li> <li>• Economic benefits including aboriginal participation through jobs and procurement; and</li> <li>• Impacts of construction traffic, health and safety.</li> </ul>
Host landowners/landholders	<ul style="list-style-type: none"> <li>• Individual landowner of the proposed site.</li> </ul>	<ul style="list-style-type: none"> <li>• Individual consultation, access to private leased land;</li> <li>• Noise;</li> <li>• Visual amenity;</li> <li>• Property values;</li> <li>• Health and safety, including fire management;</li> <li>• Construction disruption; and</li> <li>• Potential operation agreements/remuneration =.</li> </ul>
Immediate neighbours	<ul style="list-style-type: none"> <li>• Neighbouring dwellings within 5km of the proposed site.</li> </ul>	<ul style="list-style-type: none"> <li>• Individual consultation, access to private leased land;</li> <li>• Audible impacts;</li> <li>• Visual amenity;</li> <li>• Property values, health and safety; and</li> <li>• Construction disruption.</li> </ul>

<sup>10</sup> Boundaries of Local Aboriginal Land Councils NSW, 2009, [Boundaries of Local Aboriginal Land Councils NSW | Aboriginal Housing Office](#)

Stakeholder group	Stakeholders	Potential interests/concerns
Local community organisations and businesses	<ul style="list-style-type: none"> <li>• Tamworth Business Chamber;</li> <li>• Business NSW New England/North West;</li> <li>• NSW Farmers' Tamworth District Branch;</li> <li>• Local contractors and suppliers;</li> <li>• Service industries likely to benefit during construction – food and beverage, supermarkets;</li> <li>• Nearby businesses such as Goonoo Goonoo Station;</li> <li>• Local tourism organisations, including Tamworth Region and Tamworth Visitor Information Centre;</li> <li>• Estate agents; and</li> <li>• Regional Aviation Association of Australia.</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Business and workforce opportunities (during construction with influx of workers and ongoing operations);</li> <li>• Social and economic impacts;</li> <li>• Health and safety, including fire management;</li> <li>• Noise;</li> <li>• Environmental impacts;</li> <li>• Aboriginal heritage objects and values; and</li> <li>• Impact to flight paths.</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>• Transgrid; and</li> <li>• Ausgrid.</li> </ul>	<ul style="list-style-type: none"> <li>• Supply of services;</li> <li>• Fire management;</li> <li>• GreenPulse initiated the engagement with Transgrid in Q2 as per the Connection Application Process;</li> <li>• GreenPulse executed the Connection Process Agreement with Transgrid on 28th October 2024 to support the connection process;</li> <li>• GreenPulse engaged a connection studies consultant to perform the studies and it well advanced with Transgrid and several technical report have already submitted; and</li> <li>• Full Connection Application Package will be submitted to Transgrid by mid-October 2025.</li> </ul>
Surrounding communities	<ul style="list-style-type: none"> <li>• Community members who live outside of the 5km radius of the site.</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Economic benefits/impacts;</li> <li>• Impacts of construction traffic; and</li> <li>• Health and safety, including fire management.</li> </ul>
Local schools, religious organisations, clubs	<ul style="list-style-type: none"> <li>• Wallabadah Public School;</li> <li>• Lions and Rotary Clubs; and</li> <li>• Local churches.</li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Project milestones;</li> <li>• Project budget;</li> <li>• Local employment;</li> <li>• Project updates; and</li> <li>• Community involvement and events.</li> </ul>

Stakeholder group	Stakeholders	Potential interests/concerns
Local media	<ul style="list-style-type: none"> <li>• Newspapers: <ul style="list-style-type: none"> <li>◦ Northern Daily Leader; and</li> <li>◦ The Tamworth Times.</li> </ul> </li> <li>• Radio stations: <ul style="list-style-type: none"> <li>◦ 88.9FM Tamworth;</li> <li>◦ ABC New England;</li> <li>◦ Rhema FM 89.7 Tamworth; and</li> <li>◦ 92.9FM Tamworth Radio.</li> </ul> </li> <li>• Facebook groups: <ul style="list-style-type: none"> <li>◦ Community Notice Board - Tamworth and District;</li> <li>◦ Tamworth; who, what, when, where, how; and</li> <li>◦ Tamworth True.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Community consultation;</li> <li>• Community wellbeing;</li> <li>• Project milestones;</li> <li>• Project budget;</li> <li>• Local employment;</li> <li>• Project updates; and</li> <li>• Community involvement and events.</li> </ul>
National/State media	<ul style="list-style-type: none"> <li>• National and state newspapers, radio and television.</li> </ul>	<ul style="list-style-type: none"> <li>• Renewable energy targets;</li> <li>• Carbon emission reductions;</li> <li>• Community discontent/protests;</li> <li>• Safety concerns;</li> <li>• Environment or heritage impacts; and</li> <li>• Budget and timelines.</li> </ul>

## 5.4 COMMUNITY AND STAKEHOLDER ENGAGEMENT CONDUCTED

The Applicant has developed communication materials and implemented an engagement program to ensure transparent and meaningful engagement with the community and stakeholders. This approach has built an understanding of potential concerns, opportunities and mitigation strategies throughout the scoping and EIS phases. This information will also support communication approaches during future stages of the Project, including construction and delivery.

**Table 5-2** summarises the engagement undertaken in accordance with *Undertaking Engagement Guidelines for State Significant Projects* (NSW DPFI, 2024c).

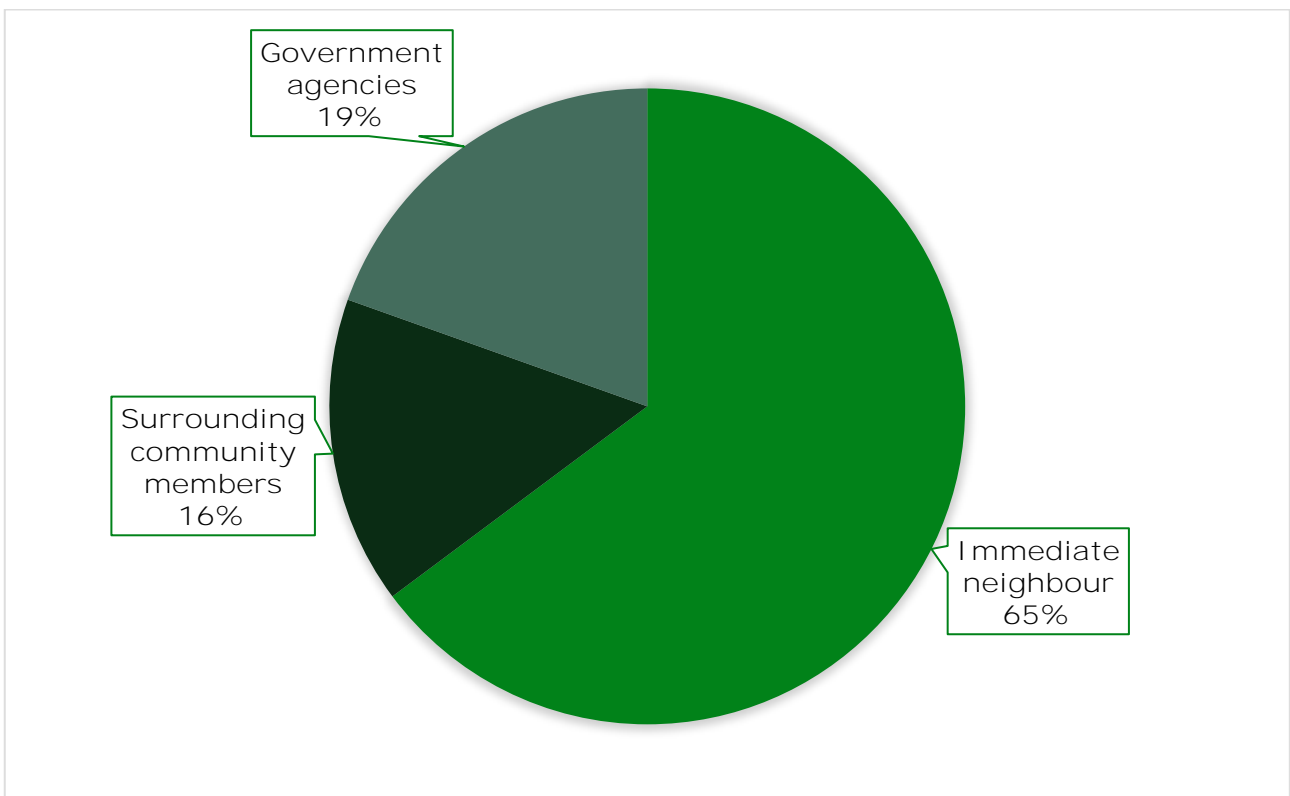
**TABLE 5-2 SUMMARY OF ENGAGEMENT ACTIVITIES**

Activity	Description
Established communications channels and tools	<ul style="list-style-type: none"> <li>• Created a Project website, email address and factsheet to promote community awareness, provide Project updates and respond to Project enquiries; and</li> <li>• Implemented a stakeholder and feedback database to record engagements and Project sentiment.</li> </ul>
Letters to introduce the Project	<ul style="list-style-type: none"> <li>• 28 letters sent to individual residents and businesses, 25 located within 5km of the Project area (immediate neighbours).</li> </ul>
Meetings	<ul style="list-style-type: none"> <li>• 9 face-to-face meetings held: <ul style="list-style-type: none"> <li>◦ Meeting with NSW Member for Tamworth, The Hon. Kevin Anderson, Tamworth Regional Council Mayor, Cr Russell Webb, 6 immediate neighbours, and 2 surrounding community members held at immediate neighbour's property on 22 July 2025;</li> <li>◦ 3 meetings with immediate neighbours held at neighbours' properties on 5 and 6 April 2025; and</li> <li>◦ 5 meetings held with government agencies.</li> </ul> </li> <li>• 1 online meeting with immediate neighbour on 28 July 2025.</li> </ul>

Activity	Description
Phone calls	<ul style="list-style-type: none"> <li>• 32 phone calls to and from immediate neighbours and surrounding community members (31 neutral and 1 negative) direct to the Project team; and</li> <li>• &gt;10 phone calls to and from government agencies.</li> </ul>
Emails	<ul style="list-style-type: none"> <li>• 50 emails to and from immediate neighbours and surrounding community members (48 neutral and 2 negative); and</li> <li>• &gt;20 emails to and from government agencies.</li> </ul>
Community engagement sessions	<ul style="list-style-type: none"> <li>• Community sessions held on 4 April 2025 and 5 April 2025 at Gowrie Community Hall:                             <ul style="list-style-type: none"> <li>◦ 10 attendees visited the session and were either immediate neighbours or surrounding community members; and</li> <li>◦ Attendance by Federal Member for New England, The Hon. Barnaby Joyce MP.</li> </ul> </li> </ul>

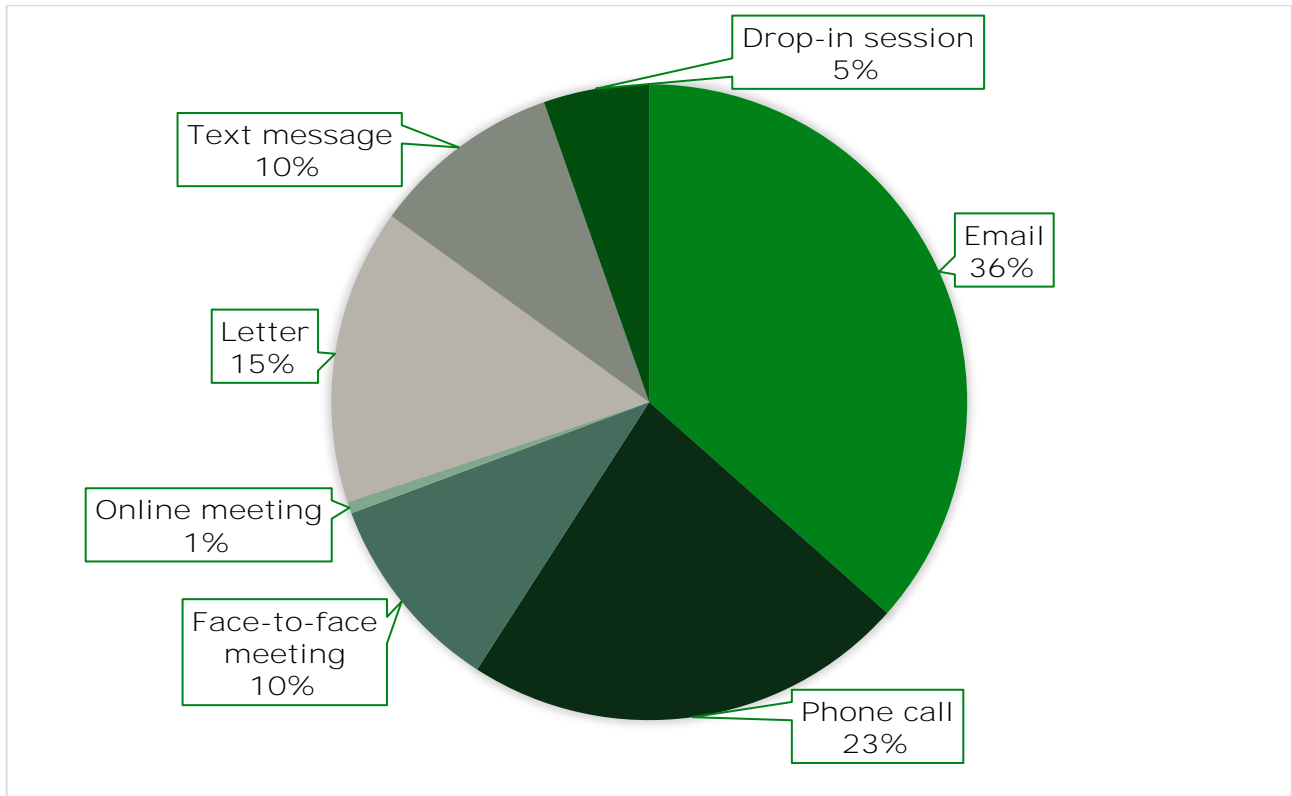
**Figure 5-1** below shows that almost two-thirds of the engagement interactions were undertaken with immediate neighbours within 5km of the Project site.

**FIGURE 5-1 ENGAGEMENT BY STAKEHOLDER GROUP**



**Figure 5-2** demonstrates how multiple engagement channels were used to communicate with key stakeholder groups.

FIGURE 5-2 ENGAGEMENT CHANNEL



### 5.5 COMMUNITY AND STAKEHOLDER VIEWS

The Applicant has sought and received feedback from the community throughout the EIS phase. **Table 5-3** provides a summary of the community views on the Project and where the issues raised have been addressed in this EIS.

TABLE 5-3 SUMMARY OF COMMUNITY AND STAKEHOLDER ENGAGEMENT

Theme/Topic	Comment/Concern	Where addressed
Environmental impact	<ul style="list-style-type: none"> <li>• Fire and fire risk - how fires would be managed;</li> <li>• Land use - livestock grazing options and livestock setback requirements;</li> <li>• Flora and fauna;</li> <li>• Biosecurity - impact to stock and risk to Livestock Production Assurance (LPA) rating if grazing near or on the Project site. Biosecurity measures to prevent weed contamination; and</li> <li>• Waste and water management - how the waste being produced on the site would be managed and potential heavy metal leaks from the solar panels internal systems into the soil or water.</li> </ul>	<p><b>Section 6.1</b> <b>Appendix G</b></p> <p><b>Section 6.8</b> <b>Appendix M</b></p> <p><b>Section 6.13</b> <b>Appendix R</b></p> <p><b>Section 6.16</b></p>
Property value and insurance	<ul style="list-style-type: none"> <li>• Potential decrease in property value; and</li> <li>• Perceived impact to insurance policies.</li> </ul>	<p><b>Section 6.14</b> <b>Appendix S</b></p> <p><b>Section 6.17</b> <b>Appendix T</b></p>
Visual impact	<ul style="list-style-type: none"> <li>• Loss of visual amenity at property and options for screen planting; and</li> <li>• Visual changes to the existing landscape.</li> </ul>	<p><b>Section 6.6</b> <b>Appendix K</b></p>

Theme/Topic	Comment/Concern	Where addressed
Compensation	<ul style="list-style-type: none"> <li>• Compensation for impacted neighbours and for loss of value of capital improvements on farms; and</li> <li>• Fencing along neighbouring property boundaries upgraded or replaced.</li> </ul>	<p><b>Section 2.7.2.1</b></p> <p><b>Section 6.8</b></p> <p><b>Appendix M</b></p>
Transport and traffic	<ul style="list-style-type: none"> <li>• Local road maintenance - roads already in poor condition and Council resources tend to be directed to more densely populated areas; and</li> <li>• Traffic movements and site/vehicle access for construction workers.</li> </ul>	<p><b>Section 6.11</b></p> <p><b>Appendix P</b></p>
Approval process	<ul style="list-style-type: none"> <li>• The approval process for the Project.</li> </ul>	<p><b>Section 4.1</b></p>
Accommodation	<ul style="list-style-type: none"> <li>• Worker accommodation and cumulative impacts with other projects.</li> </ul>	<p><b>Section 6.17</b></p> <p><b>Appendix T</b></p>

Relevant agencies have been consulted during the preparation of this EIS, as summarised in **Table 5-4**. The following agencies provided responses to the request for SEARs, and stated that no further consultation was required at this time:

- NSW DPIRD – Agriculture;
- NSW DCCEEW – Heritage Council of NSW;
- NSW DPIRD – NSW Resources;
- NSW DCCEEW – Water group; and
- WaterNSW.

TABLE 5-4 SUMMARY OF AGENCY ENGAGEMENT

Stakeholder Group	Organisation	Matters Raised	Satisfied by
Local Government	Tamworth Regional Council	Pre-Development Application Advice meeting held with Council representatives on 12 June 2025, and the below issues were discussed. There have been a few emails to close out issues.	<b>This EIS</b>
		<p>Voluntary Planning Agreement:</p> <p>GreenPulse enquired about Tamworth Regional Council's expectations for the Voluntary Planning Agreement (VPA). Tamworth Regional Council advised that they are currently in the process of updating our Renewable Energy Planning Agreement Policy to align with the NSW Government's guidelines released in November last year. Tamworth Regional Council provided current expectations, including:</p> <ul style="list-style-type: none"> <li>• A Benefit Sharing Value of \$850 per megawatt per annum for solar developments;</li> <li>• A minimum of 85% of the BSV to be allocated to Tamworth Regional Council; and</li> <li>• 25% of the total BSV to be paid upfront.</li> </ul> <p>Tamworth Regional Council have advised that GreenPulse need to consider their existing VPA Policy posted on their website and NSW Government's guidelines released in November last year. Tamworth Regional Council are available to discuss any VPA offer as well.</p>	<b>Section 2.7</b>
		If DPHI issues the response in December, Tamworth Regional Council will not have the capacity to raise issues with Councillors, as there are no Council meetings from Mid-December to February.	<b>To note</b>
		Tamworth Regional Council have advised that visual screening for those close would be beneficial.	<b>Section 6.6 Appendix K</b>
		Council confirmed Crown Land status of site access, no further consultation with council required in relation to site access.	<b>Section 3.3.3</b>
		Tamworth Regional Council raised a number of issues to consider in relation to access from Garoo Road for the OSOM and other heavy vehicles may facilitate entry at high speed. This will need to be managed via either physical constraints, driver code of conduct, or both. Also, council advised that a Section 138 approvals will be required for all proposed works in Council owned and operated road reserves.	<b>Section 6.11 Appendix P</b>

Stakeholder Group	Organisation	Matters Raised	Satisfied by
		<p>Stormwater control and fire suppression, and engagement with relevant responders, with the proposed development to be supported by a stormwater servicing strategy for the site.</p>	<p><b>Section 6.10 Appendix O</b></p> <p><b>Section 6.13 Appendix R</b></p>
		<p>The Applicant has also initiated consultation with Council regarding use of waste management services and provision of water supply for both the construction and operation phase of the Project. Council have advised they can service the water demand for the Workforce Accommodation Camp, and is committed to working proactively with proponents to identify practical and compliant waste management solutions</p>	<p><b>Appendix O Section 6.16</b></p>
		<p>Tamworth Regional Council has confirmed that they are comfortable in principle with the proposed 15-month operational period for the workforce accommodation camp, noting that workforce numbers during the decommissioning phase are expected to be minimal and unlikely to materially impact local accommodation supply. However, Council seeks to clarify the following expectations:</p> <ul style="list-style-type: none"> <li>• Should the decommissioning phase coincide with the Tamworth Country Music Festival period in January, the Project will be expected to source accommodation outside the Tamworth LGA or suspend relevant works during this period to avoid impacts on the local visitor economy and accommodation availability.</li> <li>• In the event of construction delays that result in more than 50 workers remaining on-site beyond the proposed 15-month period, Council expects that decommissioning of the camp would not commence until Stage 4: Commissioning and Testing has genuinely been achieved.</li> </ul>	<p><b>Appendix T</b></p>
	<p>Liverpool Plains Shire Council</p>	<p>The Applicant has also initiated consultation with Liverpool Plains Shire Council regarding use of waste management services and provision of water supply for both the construction and operation phase of the Project. Council have advised they can service the water demand for the Project and would consider permitting waste deposition depending on financial agreements and disposal space.</p>	<p><b>Appendix O Section 6.16</b></p>
		<p>A meeting was held with representatives from Liverpool Plains Shire Council and TfNSW to discuss the local access roads to site. The focus was on Lindsays Gap Road which is proposed to be used for the OSOM vehicles to site. Council had items to clarify and discuss as well as recommendations related to safe use of the Lindsays Gap Road. They recommended the following measures:</p> <ul style="list-style-type: none"> <li>• The condition of Lindsays Gap Road be monitored, especially after prolonged periods of wet weather.</li> </ul>	<p><b>Appendix P</b></p>

Stakeholder Group	Organisation	Matters Raised	Satisfied by
		<ul style="list-style-type: none"> <li>Vegetation over the road monitored and trimmed if needed for vertical height clearances.</li> <li>Appropriate traffic control measures during OSOM vehicle use of Lindsays Gap Road, which would involve a temporary closure of Lindsays Gap Road between the New England Highway and the site access.</li> <li>Suitable measures in a future Traffic Management Plan to ensure motorists are aware of the conditions and risk of wildlife, especially during dawn and dusk.</li> </ul>	
	Muswellbrook Shire Council	Consultation with Muswellbrook Shire Council was undertaken on 14 January 2026 regarding the use of the New England Hwy / Bell St intersection for the OSOM Route for the Project. Council does not support the use of local roads within Muswellbrook Shire for OSOM vehicle movements unless the origin or destination is within the Shire. Consultation with Muswellbrook Shire Council is ongoing.	Ongoing consultation with Muswellbrook Shire council
NSW Government Agencies	TfNSW	Letter received from TfNSW on 18 December 2024, confirming updates on the Central-West Orana REZ OSOM Corridor and current New England REZ OSOM Corridor dimensional limits. Included status of upgrades to State Road network, including the Tamworth detour, and the implications on Planning and Assessments. Envelope requirements, design vehicles, and trailer configurations were also outlined.	<b>Section 6.11 Appendix P</b>
		Consultation meeting held with TfNSW on 14 July 2025 to inform Transport Impact Assessment (TIA). At the meeting TfNSW requested for a bridge assessment for the route assessment from the Port of Newcastle and confirmed formal review would be conducted as part of EIS exhibition process. TfNSW Special Permits Unit confirmed that the vehicle combination and load can be accommodated on the State Road network without the need for a bridge assessment as it remains on the TfNSW High Load Platform (HLP) network.  Additional meetings have been held to further determine scope of Traffic Impact Assessment.	
	NSW Rural Fire Service	Provided a copy of the Bushfire Risk Assessment via email on the 08 July 2025. No further consultation required at this time. A Fire Safety Study will likely be required as part of the development consent requirements.	<b>Section 6.10 Appendix R</b>
	DPE – Crown Lands	NSW Crown Lands has confirmed: <ul style="list-style-type: none"> <li>The Crown land status of relevant land parcels;</li> <li>No landowner consent required for the project (with regard to Crown Land); and</li> <li>No existing Aboriginal Land Claim at time of consultation (20 May 2025).</li> <li>No further consultation required at this time.</li> </ul>	<b>Section 3.3.3</b>

Stakeholder Group	Organisation	Matters Raised	Satisfied by
	NSW CPHR	Site walkover held with representatives of Northwest Conservation Programs, Heritage and Regulation Group (CPHR) (formally Biodiversity Conservation and Sciences) on 26 June 2025. CPHR found the land in the small paddock off Garoo Road to be classified as Category 2 – regulated land in accordance with the NSW <i>Local Land Services Act 2013</i> . Consideration of whether this Category 2 – regulated land aligns to Box Gum Woodland Critically Endangered Ecological Community (CEEC) under Part 1 of Schedule 2 of the NSW <i>Biodiversity Conservation Act 2016</i> (BC Act).	<b>Section 6.1 Appendix G</b>
		Northwest CPHR submitted an RFI for the Land Category Assessment (LCA) on 04 July 2025. An amendment was provided, and the agency was subsequently satisfied with the development.	<b>Appendix G</b>
	DCCEEW – HeritageNSW	Standard consultation undertaken during preparation of Aboriginal Cultural Heritage Assessment Report (ACHAR). No further consultation required at this time.	<b>Section 6.3 Appendix H</b>
	Environment Protection Authority	Issued the Preliminary Site Investigation to NSW EPA on 06 August 2025 for consultation, with receipt confirmed (Reference ID: 01253015). No further consultation is required at this time.	<b>Section 6.8 Appendix N</b>
	DPIRD – Fisheries	Fisheries was contacted on 12 August 2025. SEARs have been addressed in aquatic ecology assessment report. No further consultation is required at this time.	<b>Section 6.2 Appendix G</b>
Commonwealth Agencies	DCCEEW – Environmental Assessments NSW	Referral of a proposed action under section 68 of the EPBC Act submitted, with receipt confirmed 09 July 2025. Agency outlined comments, which were further discussed over a meeting on 09 July 2025. A response to the DCCEEW was provided via letter on 01 August 2025, which addressed all matters within the EPBC request for further information. The Aquatic Ecology Impact Assessment was also provided to DCCEEW on 7 August 2025.	<b>Appendix G</b>

Stakeholder Group	Organisation	Matters Raised	Satisfied by
Private Agencies	Transgrid/Lumea	The Applicant has been in ongoing discussions with Transgrid / Lumea since Project inception, collaborating regularly to undertake connection assessments and secure required subdivisions.	<b>No action required</b>
		Engagement regarding the Connection Application Process initiated in Q2. GreenPulse executed the Connection Process Agreement with Transgrid on 28 October 2024 to support the connection process. Lumea has been consulted throughout the process. Connection studies have been performed by a consultant. These are well advanced with Transgrid, with several technical reports submitted. Full Connection Application Package will be submitted to Transgrid by mid-October 2025.	
		Transgrid has been consulted for the erection of the new interconnection facilities	
		A draft copy of the EIS was provided to Transgrid prior to submission. Close coordination with Transgrid will continue throughout the development, design, construction and operations phases.	
Aboriginal Stakeholders	Registered Aboriginal Groups	Registered Aboriginal Groups have been consulted throughout Project development, in accordance with relevant guidelines and policy. All consultation with Aboriginal Groups was considered and accommodated, and resulted the design being amended to exclude all sites of Aboriginal cultural heritage from the Development Footprint. Aboriginal consultation is detailed further in the ACHAR, which also includes an consultation log.	<b>Section 6.3 Appendix H</b>

## 5.6 FUTURE ENGAGEMENT

The Applicant recognises the importance of consistent, targeted and meaningful engagement. It will continue to create opportunities for stakeholders and the local community to provide input and feedback throughout the planning approval process, construction and operations.

Ongoing engagement will be undertaken to ensure up-to-date information is provided and two-way communication continues. This engagement will include (but is not limited to):

- Ongoing consultation with the community;
- Ongoing consultation with key stakeholders, including neighbours, Aboriginal communities, local businesses and environmental groups;
- Ongoing meetings with relevant regulators regarding planning and design;
- Ongoing government briefings at local, State and Federal levels;
- Ongoing consultation with other regulatory stakeholders;
- Maintaining Project website with regular Project updates;
- Ongoing monitoring of the Project phone number and Project email to receive community feedback and answer Project enquiries;
- Updates to Project collateral including fact sheets and timelines;
- Project letters providing updates to key stakeholders; and
- Ongoing tracking and recording of stakeholder engagement activities.

Engagement approaches will be regularly monitored, reviewed and updated throughout the life cycle of the Project to ensure it remains effective and current.

## 6. IMPACT ASSESSMENT

### 6.1 BIODIVERSITY

A BDAR has been prepared to assess the impact of the Project on biodiversity values and recommends mitigation and management measures to address these impacts. The BDAR also addresses matters raised by stakeholders (refer **Section 5**), particularly agency advice provided by the Conservation Programs, Heritage and Regulation. The BDAR is provided in **Appendix G**.

The BDAR has assessed impacts to biodiversity values in accordance with the BC Act, EPBC Act, and Biodiversity Assessment Method 2020 (BAM), and has been informed by desktop investigations and field data. For the purposes of the BDAR, the Subject Land is defined as the entire Project Area.

The scope of the BDAR includes:

- Identifying the extent of native vegetation, threatened ecological communities and vegetation integrity within the Subject Land and assessing the habitat suitability for threatened species;
- Assessing how the Project has avoided and minimised direct and indirect impacts to biodiversity values and Matters of National Environmental Significance (MNES) and identifying further measures that can be implemented to avoid and minimise impacts; and
- Calculating the ecosystem credit and species credit requirements to offset direct impacts of the Project by retiring biodiversity credits through the NSW Biodiversity Offset Scheme (BOS).

The BDAR is supported by an Aquatic Ecology Assessment, which is appended to the BDAR in **Appendix G**. Aquatic Ecology is also discussed in **Section 6.2**.

#### 6.1.1 EXISTING ENVIRONMENT

##### 6.1.1.1 NATIVE VEGETATION COVER

The extent of native vegetation within the Subject Land is determined by desktop assessment and in-field vegetation mapping, including 25 BAM plots, 23 Land Category Assessment (LCA) transects, and 47 Scattered tree assessments.

The extent of native vegetation is 15.78 ha, which is approximately 4% of the Subject Land. The rest of the Subject Area almost entirely comprises non-native pasture grasslands, which has been characterised as Category 1 – Exempt Land (i.e. not considered to comprise native vegetation). A small portion of the Subject Land associated with existing development also contains areas of planted native vegetation (0.68 ha).

Vegetation cover for the Subject Land is presented in **Figure 6-1**.

##### 6.1.1.2 PLANT COMMUNITY TYPE

The Subject Land consists of approximately 15.73 ha of Plant Community Type (PCT) 599 *Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion*.

Four Vegetation Zones for PCT 599 were identified within the Subject Land. The calculated Vegetation Integrity Score (VIS) associated with these are summarised in **Table 6-1**.

Scattered trees and mixed plantings are considered to have low biodiversity value, and therefore not assigned a VIS.

The location of PCT 599 is presented on **Figure 6-2**.

#### 6.1.1.3 THREATENED ECOLOGICAL COMMUNITIES

PCT 599 is associated Threatened Ecological Community (TEC) - *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. This TEC is a BC Act and EPBC Act listed Critically Endangered Ecological Community (CEEC), and covers 13.37 ha of the Subject Land

The Vegetation Zones and associated TEC area is provided in **Table 6-1**. The TEC is excluded from the Development Footprint, and therefore impacts have been avoided.

**TABLE 6-1 VEGETATION ZONES AND THREATENED ECOLOGICAL COMMUNITIES**

PCT	Vegetation Zone	VIS	Total Area (ha)	TEC Area (ha)
599	Open Woodland	73.8	5.11	5.11
	Scattered Trees	NA	1.94	N/A
	Derived Grasslands	46.8	8.21	8.21
	Mixed Planting	NA	0.47	N/A

#### 6.1.1.4 SCATTERED TREES

A total of 60 trees were identified across the Subject Land, 40 of which may be impacted. 39 of these are classified as Class 2 and/or Class 3. However, surveys determined these are not considered Serious and Irreversible Impact (SAII) entities.

#### 6.1.1.5 THREATENED SPECIES

Threatened species were assessed based on desktop efforts, incidental recordings and targeted surveys. The survey methodology and survey effort for assessing threatened species is detailed within the BDAR, alongside detailed findings (refer **Appendix G**).

Two ecosystem credit species (or 'predicted species') were recorded in the Subject Land: Corben's long-eared bat (*Nyctophilus corbeni*) and Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*). Four species credit species (or 'candidate species') associated with PCT 599 were detected or assumed present:

- Eastern Cave Bat (*Vespadelus troughtoni*) – detected;
- Bluegrass (*Dichanthium setosum*) –assumed presence;
- *Euphrasia arguta* – assumed presence; and
- Finger Panic Grass (*Digitaria porrecta*) - assumed presence.

#### 6.1.1.6 SAII ENTITIES

Three potential SAII entities were recorded or assumed within the Subject Land:

- *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland* (TEC);
- *Euphrasia arguta*; and
- Eastern Cave Bat.

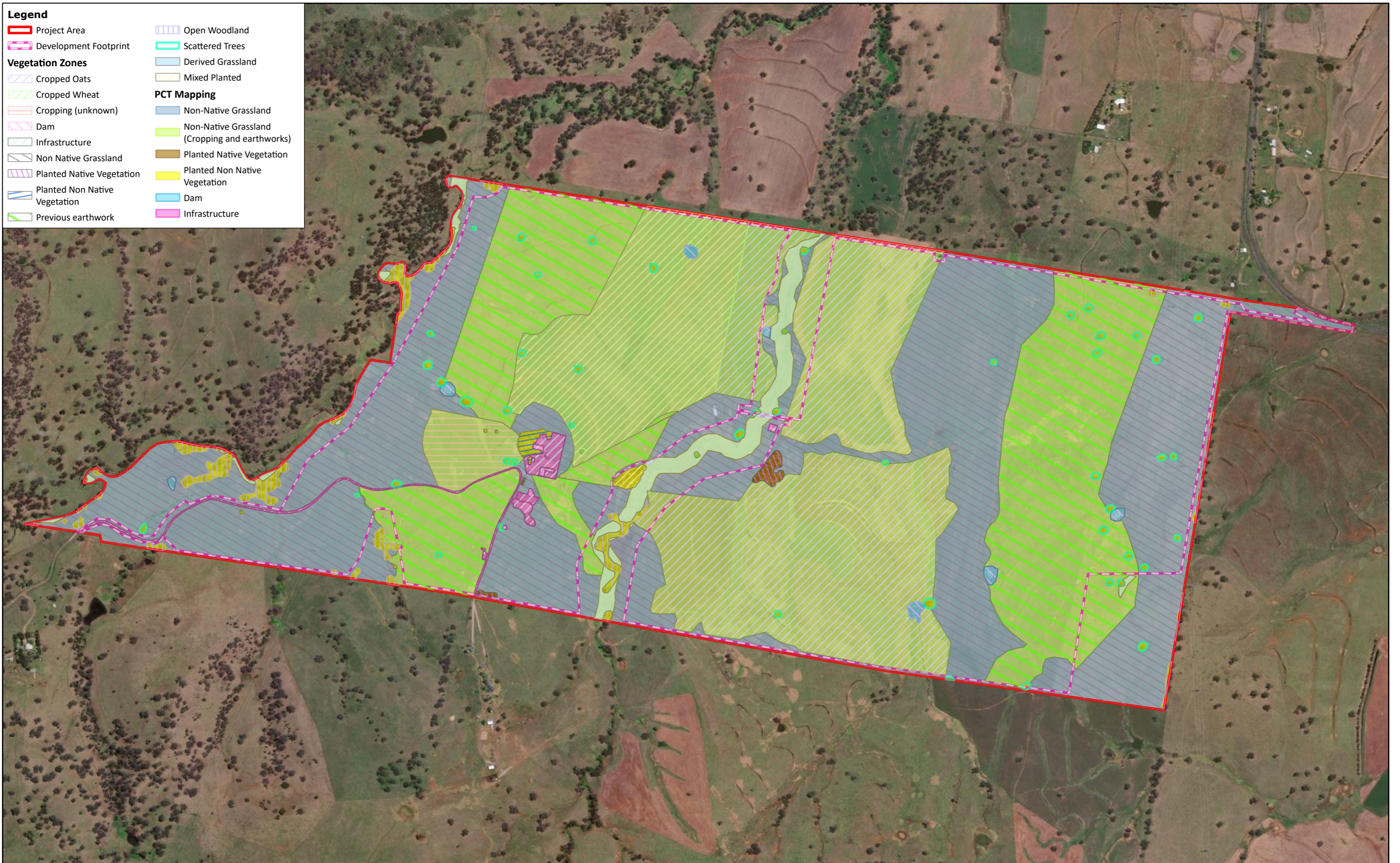
The Subject Land does not contain potential breeding habitat for the Eastern Cave Bat, and therefore has been excluded from further SAII assessment. However, the extent of *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland* has been considered to represent the extent of SAII on the Subject Land.

#### 6.1.1.7 AQUATIC HABITAT SPECIES

Impacts to aquatic species and habitats was assessed as part of the Aquatic Ecology Assessment, which is provided in **Appendix G** and summarised in **Section 6.2**.

**Legend**

Project Area	Open Woodland
Development Footprint	Scattered Trees
<b>Vegetation Zones</b>	
Cropped Oats	Derived Grassland
Cropped Wheat	Mixed Planted
Cropping (unknown)	<b>PCT Mapping</b>
Dam	Non-Native Grassland
Infrastructure	Non-Native Grassland (Cropping and earthworks)
Non Native Grassland	Planted Native Vegetation
Planted Native Vegetation	Planted Non Native Vegetation
Planted Non Native Vegetation	Dam
Previous earthwork	Infrastructure



Source:  
Boundary: Client Provided (20250415)  
Base Data: NSW DCDB/DTDB  
Imagery: ESRI World Imagery



Coordinate System:  
GDA2020 MGA Zone 56  
Date: 29/01/2026  
Created By: NB  
Drawing Size: A3  
0 200 400m  
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**F6-1 Native Vegetation Cover (Ground-Truthed)**





**Garoo Solar Farm and BESS  
Environmental Impact Assessment**

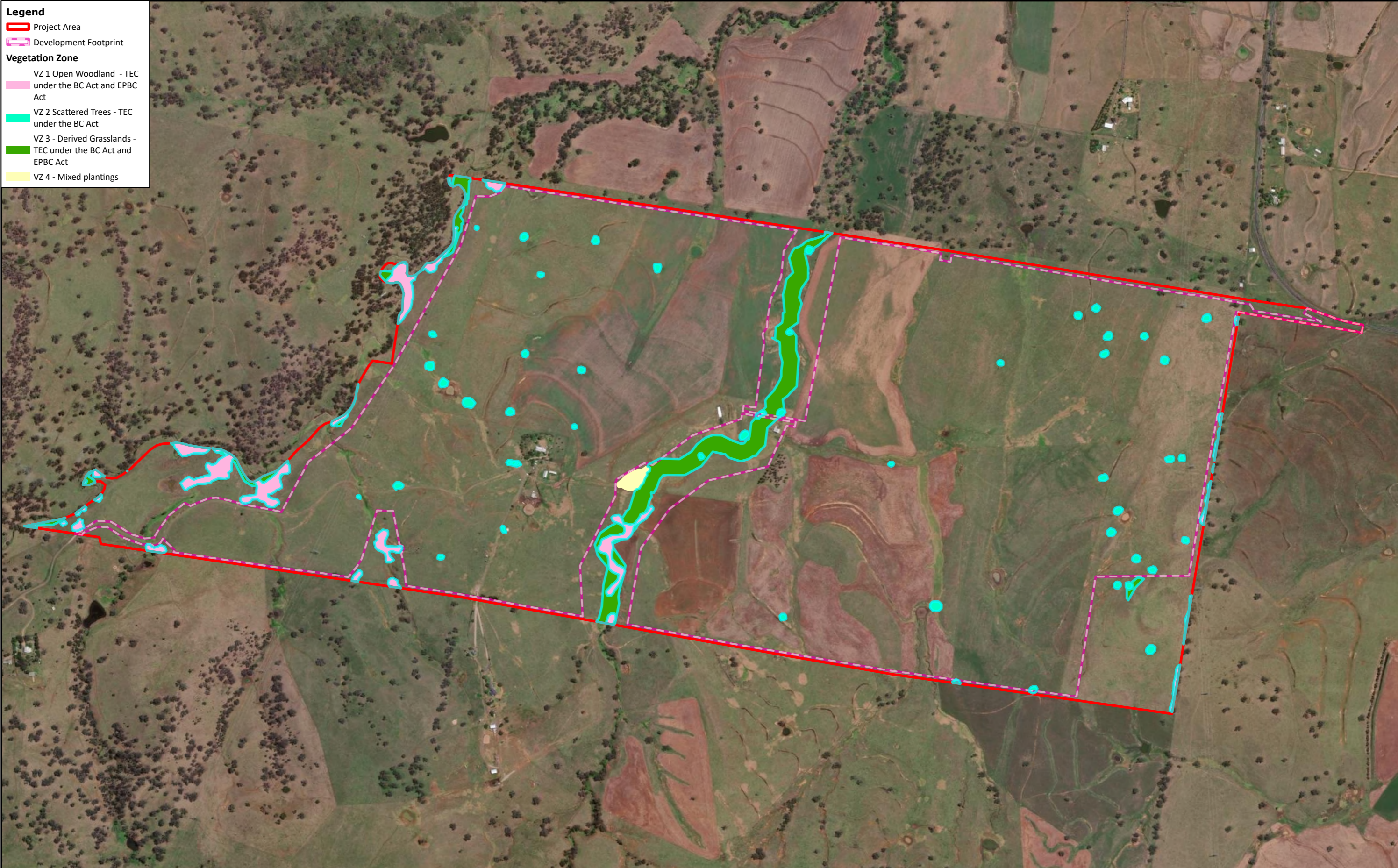


**Legend**


-  Project Area
-  Development Footprint

**Vegetation Zone**

-  VZ 1 Open Woodland - TEC under the BC Act and EPBC Act
-  VZ 2 Scattered Trees - TEC under the BC Act
-  VZ 3 - Derived Grasslands - TEC under the BC Act and EPBC Act
-  VZ 4 - Mixed plantings




Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCD/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB/VN  
 Drawing Size: A3  
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**F6-2 Plant Community Type (Ground Truthed)**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



## 6.1.2 IMPACT ASSESSMENT

### 6.1.2.1 PRESCRIBED IMPACTS

The Project is anticipated to have the following prescribed impacts:

- The removal of human-made structures;
- Impacts to non-native vegetation; and
- Impacts to habitat connectivity.

### 6.1.2.2 AVOIDANCE AND MINIMISATION

The Project is primarily located on non-native pasture grasslands, with 95% of the Subject Land considered to have low conservation habitat. Most of this is Category 1 -Exempt Land used for agricultural purposes. Design refinement has resulted in the Development footprint aligning with low conservation value lands, demonstrating a significant avoidance outcome for locally occurring biodiversity values and maintaining functionality across the Subject Land.

The Development Footprint has retained opportunities for improved function of habitat, with retention of areas of functional native vegetation, riparian habitats and scattered trees.

### 6.1.2.3 DIRECT IMPACTS

Despite avoidance and minimisation principles being applied, the Project will result in direct impacts to biodiversity values that cannot be avoided. These impacts are minimal and largely associated with the clearing / modification of native vegetation during construction of internal access roads within the Development Footprint. The total area of direct impact to vegetation zones is 1.68 ha split across open woodland (0.07 ha impacted), derived grasslands (0.04 ha impacted) and scattered trees (1.57 ha impacts). A total of 40 scattered trees will be cleared.

All four candidate species identified or assumed as present will be directly impacted during construction, all experiencing 0.11 ha of habitat loss.

The Project has preferentially avoided impacts to native vegetation. However, the Project will remove approximately 0.45 ha of the *Yellow Box – Blakely's Red Gum Grassy Woodland* TEC associated with the SAI entity in the form of open woodland and derived grasslands. This equates to 3% the total extent of the SAI entity available on the Subject Land, and 0.48% of all native vegetation. Impacts to these small areas of native vegetation are unavoidable and are largely the result of upgrade requirements to existing infrastructure (i.e. roads and waterway crossings).

### 6.1.2.4 RESIDUAL AND INDIRECT IMPACTS

The BAM identifies 16 potential indirect impacts that, as a minimum, must be considered as a part of a BDAR. Residual indirect impacts of the Project on native vegetation, threatened entities and their habitat beyond the Development Footprint have been considered in accordance with the BAM and are summarised in **Table 6-2**.

The proposed mitigation measures in **Section 6.1.3** are considered reliable and capable of remedying the effects of these impacts without causing harm to the adjoining environment. As such, no residual indirect impacts are expected.

TABLE 6-2 INDIRECT IMPACTS TO BIODIVERSITY VALUES

Indirect Impact	Impacted Entities	Timing of Impact	Likelihood and Consequence
Inadvertent impacts on adjacent habitat or vegetation	PCTs and threatened species habitat	Construction	Reduced condition of retained native vegetation and threatened species habitat adjacent to the approved development footprint, resulting in loss and dispersal of species.
Reduced viability of adjacent habitat due to edge effects	PCTs and threatened species habitat	Construction	Reduced condition of retained native vegetation adjacent to the approved development area. May reduce habitat quality or affect habitat use or movements of some species.
Reduced viability of adjacent habitat due to noise, dust or light spill	PCTs and threatened species habitat	Construction and operation	Disruption of fauna habitat usage during construction and operation.
Transportation of weeds and pathogens from the subject site to adjacent vegetation	PCTs and threatened species habitat	Construction, operation and rehabilitation	Reduced condition of retained native vegetation adjacent to the approved development footprint and a change in the composition of foraging resources, which may be detrimental to certain fauna species.
Increased risk of starvation, exposure and loss of shade or shelter	Threatened fauna species	Construction and operation	Clearing of native vegetation for the construction of the Project will result in reduction of resources available for threatened fauna species that may result in starvation, exposure and loss of shade or shelter.
Loss of breeding habitat due to vegetation clearance	Threatened fauna species	Construction and operation	Reduced function of retained native vegetation and other breeding habitats adjacent to the approved development area which may force species to disperse or be detrimental to their survival.
Trampling of threatened flora species	Threatened flora species habitat	Construction, operation and rehabilitation	Reduction in the number and extent of threatened flora species.
Inhibition of nitrogen fixation and increased soil salinity	PCTs, threatened species and their habitat	Construction phase and operation	Reduced vegetation function and subsequent impacts on foraging resources and habitat.
Fertiliser drift	PCTs and threatened species habitat	Construction, operation and rehabilitation	Reduced native vegetation function and the subsequent impacts on foraging resources and habitat. Potential reduction in water quality in waterbodies, including farm dams.

Indirect Impact	Impacted Entities	Timing of Impact	Likelihood and Consequence
Rubbish dumping due to improper management of waste	Threatened species and their habitat	Construction and operation	Reduce native vegetation function and impacts on suitable habitat. Improper waste disposal, particularly food waste can contribute to an increase in feral animal populations, posing a significant threat to threatened fauna.
Wood collection	Threatened fauna species, including threatened birds that build stick nests.	Construction	Reduced native vegetation function and impacts on suitable habitat, particularly for species which use fallen logs for foraging or shelter. Removal of dead wood and dead trees is a Key Threatening Process in schedule 4 of the BC Act and can result in the loss of important habitat, such as hollow logs and decaying wood, for a wide variety of species.
Removal and disturbance of rocks, including bush rocks	Threatened species and habitats	Construction	Loss of potential shelter, basking and habitat resources.
Increase in predators	Threatened flora and fauna species	Construction and operation	Reduction in fauna numbers and genetic material within populations. Reduction in the number of herbivores in vegetation communities, potentially disrupting the ecological balance.
Increase in pest animal populations	PCTs, threatened species and their habitat	Construction and operation	Increase in the number of herbivores in vegetation communities, potentially disrupting the ecological balance.  Negative impacts to vegetation communities and habitats by pest animals.  Competition with and predation of native fauna
Change in fire regimes	PCTs, threatened species and their habitat	Construction and operation	This risk is considered low due to the general lack of large patches of woody vegetation within the Subject Land. However, altered vegetation community composition, structure and function as a result of the Project may lead to fires in shrub and grass communities in very dry conditions, following good growth of vegetation in wet conditions (and hence a fuel source). Loss or changes to habitats and resources.
Disturbance to specialist breeding and foraging habitat, e.g. beach nesting for shorebirds	Threatened fauna species	Construction and operation	Reduction in fauna numbers, fitness and the gene pool of populations.

### 6.1.2.5 OFFSETTING IMPACT

The impacts that require offset and associated number of credits are detailed in **Table 6-3** (ecosystem credits) and **Table 6-4** (species credits). The offset strategy is detailed in the BDAR (**Appendix G**).

**TABLE 6-3 IMPACTS THAT REQUIRED OFFSET – ECOSYSTEM CREDITS**

PCT	Condition	TEC	Timing of Impact	Impact area	Ecosystem credits
599	Open Woodland	Yes	Construction	0.07 ha	6
599	Scattered Trees	Yes	Construction	1.57 ha	37
599	Derived Grass	Yes	Construction	0.04 ha	9

**TABLE 6-4 IMPACTS REQUIRE OFFSER - SPECIES CREDITS**

Name	Scientific Name	Loss of habitat	Ecosystem credits
Bluegrass	<i>Dichanthium setosum</i>	0.11 ha	11
-	<i>Euphrasia arguta</i>	0.11 ha	16
Finger Panic Grass	<i>Digitaria porrecta</i>	0.11 ha	11
Eastern Cave Bat	<i>Vespadelus troughtoni</i>	0.11 ha	16

### 6.1.3 MITIGATION AND MANAGEMENT

**Table 6-5** summarises the mitigation and management measures that will be implemented to minimise impacts to biodiversity values.

**TABLE 6-5 BIODIVERSITY MITIGATION AND MANAGEMENT**

ID	Mitigation Measures	Phase
BD1	Project strategically designed to avoid and minimise impacts on high quality vegetation and habitats	Detailed design
BD2	A Biodiversity Management Plan (BMP) will be prepared to the satisfaction of the Environment Agency Head for implementation prior to/during construction and through the operational period	Pre-construction
BD3	Prepare and implement the following: <ul style="list-style-type: none"> <li>• Construction Environmental Management Plan (CEMP);</li> <li>• Traffic Management Plan (TMP);</li> <li>• Biodiversity Management Plan (BMP);</li> <li>• Erosion and Sediment Control Plan (ESCP); and</li> <li>• Pest Animal Management Plan (PAMP).</li> </ul>	Pre-construction
BD4	Where vegetation is to be removed it will be undertaken in accordance with specifications provided in a vegetation clearing protocol. Any inadvertent vegetation removal or impacts must be repaired through restoration activities	Construction
BD5	Environmental Sensitive No-Go Zones' will be established around areas of significance including threatened fauna habitat and threatened flora species locations outside the Development Footprint.	Construction

ID	Mitigation Measures	Phase
BD6	Plain wire perimeter fencing (opposed to barbed-wire fencing) will be used to avoid potential entrapment of fauna on fences.	Construction and Operation
BD7	<p>To avoid unnecessary removal or damage to retained vegetation, the limit of clearing will be clearly demarcated and signed as 'Environmental Sensitive No-Go Zones' prior to the commencement of clearing. Additionally:</p> <ul style="list-style-type: none"> <li>• Vehicles or machinery will not be permitted to park within or drive through areas of retained vegetation;</li> <li>• Construction materials will not be stockpiled or stored within areas of retained vegetation;</li> <li>• Ancillary facilities, such as site compounds and construction zones, will not be located beyond the limits of clearing;</li> <li>• Temporary fencing and signage will be maintained throughout construction; and</li> <li>• Site inductions will be given by the civil contractor to all personnel and visitors to ensure all site workers and visitors are aware of any No-Go Zones.</li> </ul>	Construction
BD8	The BMP will include measures to avoid light encroachment on adjacent habitats by restricting construction works to daylight hours as much as possible and incorporating sensitive lighting arrays that shield the adjoining native vegetation and habitat from stray light, with low-level lighting installed for all required external lighting.	Construction
BD9	The Applicant will implement programs to monitor the generation of dust during construction activities. All construction activities will be undertaken with the objective of preventing visible dust emissions from construction activities.	Construction
BD10	To minimise the spread of weeds throughout the Subject Land and surrounding patches, appropriate weed control activities will be undertaken in accordance with State and regional weed management plans.	All phases
BD11	<p>A pathogen management protocol will be implemented.</p> <p>The risk of spreading pathogens and the mitigation measures required on site will be regularly communicated to staff and contractors during inductions and toolbox talks.</p>	All phases
BD12	Feral pest management programs will be developed and implemented for the Project, with focus European Foxes. All control methods will be completed in accordance with relevant legislation / standard operating procedures.	All phases
BD13	Construction noise will be managed to provide the least amount of disruption to species vulnerable to these disturbances.	Construction
BD14	<p>The TIA and/or CEMP will consider procedures to minimise animal strikes. This will include on-site education, identifying and reporting hazards, use of appropriate signage and creating driving policies such as appropriate working hours and vehicle speed limits.</p> <p>The TIA will also consider traffic procedures to reduce risk of spread / introduction of pest and pathogens.</p>	All phases
BD15	Ongoing monitoring to identify any increase in risk to threatened species. To be managed through the BMP and CEMP.	Construction

## 6.2 AQUATIC ECOLOGY

An Aquatic Ecology Assessment was prepared by H2O Consulting Group to assess the potential impacts that the Project may have on freshwater aquatic ecology and associated riparian habitat.

The Aquatic Ecology Assessment also recommends strategies to mitigate and manage impacts to aquatic biodiversity values. The Aquatic Ecology Assessment is appended to the BDAR in **Appendix G**.

Preparation of the Aquatic Ecology Assessment included a desktop assessment, habitat mapping, and field surveys conducted in June 2025.

The assessment addressed relevant SEARS (refer **Appendix A**), and was prepared in accordance with the relevant legislation, and the Policy and Guidelines for Fish Habitat Conservation and Management (NSW DPI, 2013a).

### 6.2.1 EXISTING ENVIRONMENT

The Project is located in the Peel River sub-catchment of the broader Namoi River Catchment and Greater Murray-Darling Basin. The Sustainable Rivers Audit identified the Namoi Valley river ecosystem to have poor health, however the Peel River catchment is known to contain important protected aquatic species.

Four major tributaries run through the Project Area, including two named watercourses: Tamarang Creek and Sugarloaf Creek. Tamarang Creek runs through the centre of the Project Area, being crossed once by a minor bridge (refer **Figure 3-1**), whilst Sugarloaf Creek is flows along the western boundary (outside of the Development Footprint). All of the four tributaries flow into Goonoo Goonoo Creek. The Strahler Stream Order for the watercourses within the Project Area are shown in **Figure 6-3**.

#### 6.2.1.1 WATER QUALITY

Water Quality Objectives derived from the Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 Guidelines default trigger values were used to interpret the physico-chemical water quality variables measured during the field surveys. Measurements were taken from seven sites, including locations in Sugarloaf Creek and Tamarang Creek. Generally, turbidity, dissolved oxygen, and electrical conductivity exceeded the ANZECC guidelines values, whilst the remaining variables were within expected ranges.

The physico-chemical water quality measurements are detailed in the Aquatic Ecology Assessment (refer **Appendix G**).

#### 6.2.1.2 KEY FISH HABITAT

All the watercourses and three dams within the Project Area are mapped as Key Fish Habitat by NSW DPIRD Fisheries. Field surveys were undertaken at 12 sites across the Project Area to verify Key Fish Habitat type and classify the waterway class. The field verified outcomes are shown in **Figure 6-4**. The outcomes of the detailed habitat and riparian assessment, which influences the classifications, are provided in the Aquatic Ecology Assessment (**Appendix G**).

### 6.2.1.3 OTHER AQUATIC HABITAT

Aquatic habitat along Sugarloaf creek is typically complex, with consistent presence of important habitat features that likely provide suitable habitat for native aquatic fauna species. Aquatic habitat along Tamarang Creek is moderately disturbed due to agricultural practice (e.g. grazing, informal vehicle crossings), however did contain aquatic habitat features such as gravel beds and macrophyte stands.

The two eastern tributaries were predominantly dry during the survey, and are likely ephemeral drainage lines that may receive a small amount of flow following rain events. Therefore, it was determined these do not provide semi-permanent or permanent habitat for aquatic fauna.

### 6.2.1.4 AQUATIC FAUNA AND FLORA

Sugarloaf Creek, Tamarang Creeks and the farm dams likely provide some semi-permanent or permanent freshwater habitat for native freshwater fauna, including fish, eels, crustaceans and freshwater turtles, and macroinvertebrates. No threatened aquatic fauna species were observed within the Project Area. However, Sugarloaf Creek may provide some marginal potential habitat for the Southern Purple Spotted Gudgeon (*Mogurnda adspersa*), which is listed as endangered under the *Fisheries Management Act 1994*. Whilst present in the wider catchment, there is a low likelihood that platypus (*Ornithorhynchus anatinus*) is present.

Aquatic flora was typically confined to emergency rush species and occasional stands of emergent or floating macrophytes. Stands were typically isolated, providing minimal habitat value. No threatened aquatic flora species listed under the EPBC Act, BC Act or Fisheries Management Act 1994 (FM Act) are likely to occur within the Study Area.

**Legend**

- ▬ Project Area
- ▬ Development Footprint
- ▬ Transmission Lines (existing)

**Strahler Stream Order**

- ▬ 0
- ▬ 1
- ▬ 2
- ▬ 3
- ▬ 4
- ▬ 5
- ▬ 6




Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

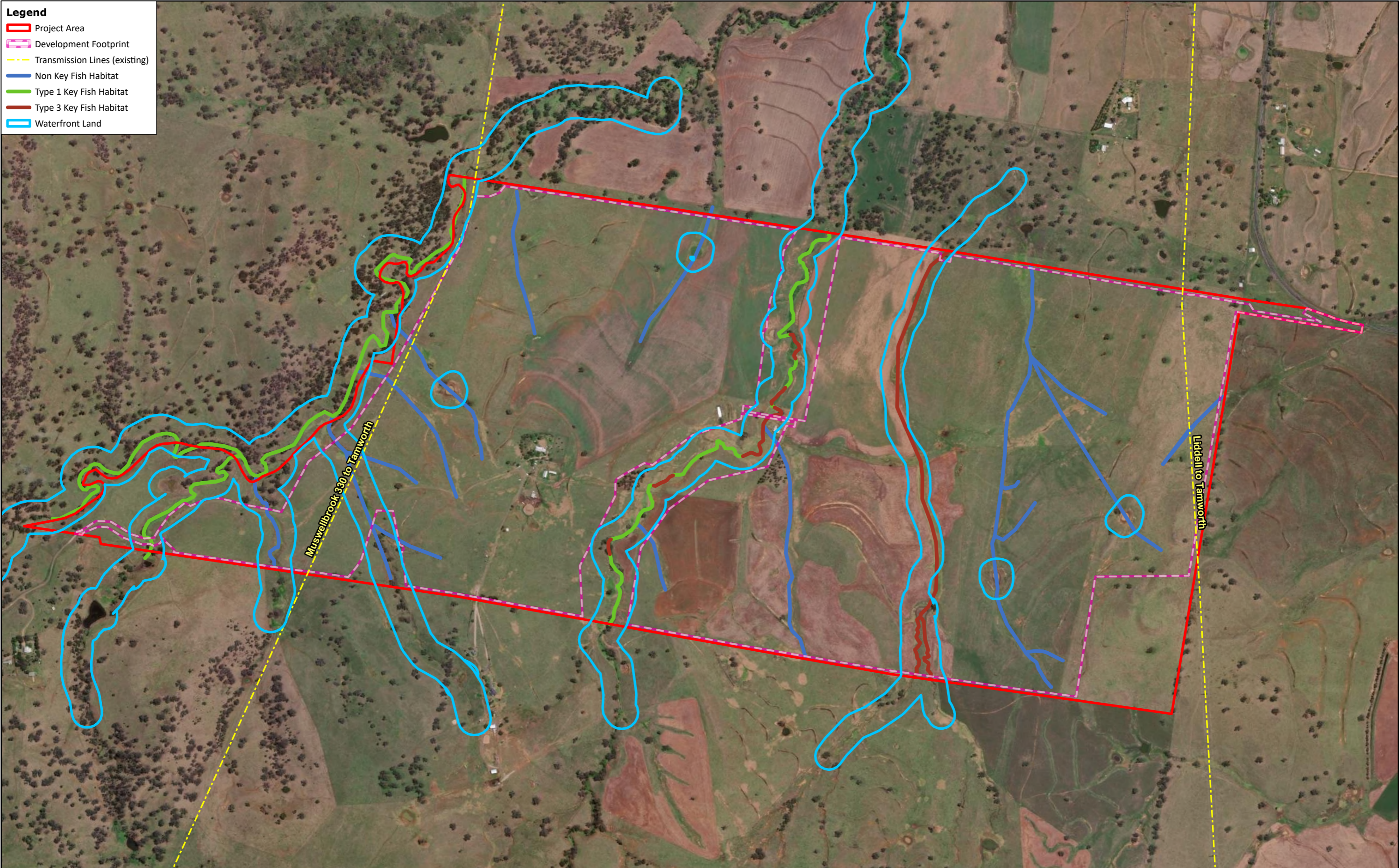
Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB/VN  
 Drawing Size: A3  
 0 200 400m  
 1:11,000

**F6-3 Strahler Stream Order**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



- Legend**
- ▬ Project Area
  - ▬ Development Footprint
  - ▬ Transmission Lines (existing)
  - ▬ Non Key Fish Habitat
  - ▬ Type 1 Key Fish Habitat
  - ▬ Type 3 Key Fish Habitat
  - ▬ Waterfront Land



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3  
 0 200 400m  
 1:11,000

**F6-4 Key Fish Habitat**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



## 6.2.2 IMPACT ASSESSMENT

### 6.2.2.1 WATER QUALITY, SEDIMENT AND FLOW

Construction activities (notably earthworks) may mobilise sediment, which could enter aquatic habitats, impacting water quality and exacerbating erosive processes. Additionally, Project infrastructure and altered vegetation coverage could influence surface runoff, flow patterns and water infiltration patterns.

Accidental spills and infrastructure degradation could result in mobilisation / leaching of hazardous contaminants, which subsequently pollute waterways with harmful and toxic chemicals. However, implementation of relevant management plans and appropriate maintenance, management and disposal processes should negate impacts.

### 6.2.2.2 KEY FISH HABITAT

Direct disturbance to approximately 25 m<sup>2</sup> of Type 3 Key Fish Habitat may occur in Tamarang Creek to facilitate the construction of the bridge. Approximately 180 m<sup>2</sup> of the eastern tributary will also be directly impacted by internal road crossings. Direct impacts to all other Key Fish Habitat in the Project Area have been avoided, with at least a 40 m buffer to most Key Fish Habitat.

Indirect impacts to Key Fish Habitat may occur during construction, operation and decommissioning due to minor changes on hydrology and sediments patterns that could result in temporary reductions in water quality

### 6.2.2.3 OTHER AQUATIC HABITAT

Project construction will directly disturb the eastern tributaries. However, impacts to aquatic habitats is considered low due to the ephemeral nature of impacted waterways. Any ongoing disturbances to riparian and groundcover vegetation, erosion patterns, and drainage patterns has potential to impact on adjacent aquatic habitats during operation. The Project may result in increased debris (e.g. construction material, litter) entering waterways, with stormwater drainage channels potentially facilitating increased pathway of entry.

Riparian habitats have mainly been excluded from the Development Footprint, with minimal riparian vegetation clearing anticipated. Whilst changes vegetation clearing, altered surface run-off patterns and introduction of exotic species could degrade habitats riparian habitats, impacts are considered low due to the established buffers.

Changes to stock grazing patterns may reduce shoreline grazing and disturbance to aquatic and riparian habitats, positively impacting aquatic ecology. All agricultural dams within the Project Area have been excluded from the Development Footprint and will be retained.

### 6.2.2.4 AQUATIC FAUNA AND FLORA

#### **Threatened Species**

Marginal potential habitat for the threatened Southern Purple Spotted Gudgeon were identified in Sugarloaf Creek. This watercourse is located outside the Development Footprint, and therefore no direct impacts are expected. Any indirect impacts to this species are limited to temporary disturbances to water and habitat quality, should sediment-laden waters mobilise.

## Aquatic Fauna

Aquatic fauna inhabiting ephemeral pools in 1<sup>st</sup> and 2<sup>nd</sup> order streams may be impacted by trenching activities, and reduced habitat and water quality from sedimentation could smother smaller species, and reduce foraging and refuge habitat. Increased vehicle presence could also increase risk of vehicle strikes to aquatic fauna that traverse land, such as eels and turtles.

Artificial lighting can impact foraging and movement behaviours. As lighting is limited to security lighting, ecological impacts are expected to be minor.

The construction of the proposed Tamarang Creek bridge may result in temporary barriers to fish passage, however permanent barrier to fish passage is not expected during operation. The internal road network does also cross ephemeral waterways. However, considering the existing barriers to fish passage that exist within the Project Area, an ecologically significant increase in barriers to fish passage from the proposal is not expected.

## Aquatic Flora

As Sugarloaf Creek, Tamarang Creeks and existing dams are predominately avoided by design, impacts to macrophytes are unlikely. Some disturbance may occur to the sporadic occurrences of macrophytes along ephemeral drainage lines that lie within the Development Footprint.

## Invasive Species and Pathogens

The Project is not expected to directly introduce or spread aquatic pest species or diseases. However, algal blooms are prevalent across the surveyed waterways, and therefore construction machinery may facilitate the spread of algal species if not cleaned thoroughly. Additionally, disturbances to aquatic habitat across the Study Area may favour invasive species that are adapted to environmental disturbance, which have potential to outcompete native vegetation. Implementation of a BMP should address risk of invasive species.

### 6.2.2.5 KEY THREATENING PROCESSES

The Key Threatening Processes that may occur, as identified under the FM Act, BC Act and EPBC Act, include:

- Degradation of native riparian vegetation;
- Alteration of Natural Flow Regimes of Rivers and Streams;
- Removal of large woody debris; and
- Introduction of fish to fresh waters within a river catchment outside their natural range.

As discussed in previous sections, degradation of native riparian vegetation and altered flow regimes are likely, but these impacts are expected to be minor and temporary. Removal of debris and introduction of fish species is unlikely to occur.

### 6.2.2.6 WATERFRONT LAND

Small encroachments into waterfront land along creeks are limited to fences, internal roads and the single lane bridge, whilst encroachments around dams are confined to PV panel placement. While these encroachments are only minor, it is likely a Controlled Activities permit will be required.

Waterfront land is discussed further in **Section 6.10** and **Appendix O**.

### 6.2.3 MITIGATION AND MANAGEMENT

**Table 6-6** summarises the mitigation and management measures that will be implemented to minimise impacts to aquatic ecology

**TABLE 6-6 AQUATIC ECOLOGY MITIGATION AND MANAGEMENT**

ID	Mitigation Measures	Phase
AE1	<p>Design and construction of waterway crossings and within riparian corridors should occur in accordance with:</p> <ul style="list-style-type: none"> <li>• Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (Fairfull, 2013);</li> <li>• Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (Witheridge &amp; Fairfull, 2003); and</li> <li>• Controlled activities – watercourse crossings on waterfront land (NSW DPE, 2022b)</li> </ul>	Detailed Design and Construction
AE2	<p>Prior to commencement of construction, the Applicant will prepare management and monitoring plans including:</p> <ul style="list-style-type: none"> <li>• Stormwater Management Plan;</li> <li>• Erosion and Sediment Control Plan;</li> <li>• Vegetation Management Plan;</li> <li>• Water Quality Monitoring Program; and</li> <li>• Stream Bank Erosion Monitoring Plan</li> </ul> <p>All management plans to be prepared in accordance with relevant guidelines.</p>	Pre-construction
AE2	<p>Recommended that livestock is confined to fenced areas that have included for suitable buffers to riparian zones and aquatic habitats.</p>	Operation
AE3	<p>The following measures are adopted into the CEMP:</p> <ul style="list-style-type: none"> <li>• Adequately manage and store waste products and material in designated areas;</li> <li>• All construction work locations are to have designated litter disposal bins to avoid potential for aquatic debris;</li> <li>• All machinery should be routinely checked for leaks, with an emergency spill kit to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use;</li> <li>• All fuels and hydrocarbon-based products are to be stored in a sealed bunded area(s) at least 30 metres away from the water's edge; and</li> <li>• All vehicles and machinery should not enter the waterway except where absolutely necessary for installation of pipeline. Where they are required to enter the waterway a washdown procedure before doing so should be implemented.</li> </ul>	Construction
AE4	<p>Placement of construction equipment and materials should avoid riparian corridors by limiting works to the outer edge of the riparian buffer. Where necessary, works should (where possible):</p> <ul style="list-style-type: none"> <li>• Conduct works in areas with existing cleared vegetation (where possible);</li> <li>• Avoid removal of established trees; and</li> <li>• Rehabilitate areas of disturbed vegetation following the completion of works, in accordance with the natural riparian composition.</li> </ul>	Construction

ID	Mitigation Measures	Phase
AE5	<p>Any creek channels that require trenching be re-instated to their original form or long-term stable condition in instances where this cannot be achieved.</p> <p>Excavated material to be stored away from the waterway, and all backfilling to use clean fill or excavated sediment.</p> <p>Vegetation rehabilitation and weed management strategies to be included in the Vegetation Management Plan.</p>	Construction
AE6	<p>Where works requiring bunding are to be conducted through waterways, the following is to be considered:</p> <ul style="list-style-type: none"> <li>• Temporary barriers should typically only be in place for less than six to twelve months and avoided in areas mapped as Key Fish Habitat;</li> <li>• Adequate alternate fish passage should be provided where blockage remains for several weeks or more;</li> <li>• In-stream works should be staged to avoid blocking the entire waterway, or an alternative flow and passage channel should be considered;</li> <li>• Temporary in-stream structures should be installed during periods of low flow; and</li> <li>• Temporary barriers should not be comprised of loose, imported earth fill, with all material to be fully enclosed by geotextile, sheet piling or similar to prevent erosion and sedimentation.</li> </ul>	Construction
AE7	<p>Snag management to be conducted as per Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (Fairfull, 2013).</p>	Construction
AE8	<p>The Decommissioning Plan should consider similar controls as outlined for construction, and rehabilitation/restoration of the site.</p>	Decommissioning
AE9	<p>Implement the Water Quality Monitoring Program during construction, for one year following completion of construction, and during decommissioning</p>	All phases
AE10	<p>Stream Bank Erosion Monitoring Plan should be established, and include:</p> <ul style="list-style-type: none"> <li>• Monitoring (ground truthing or drone survey): mapping of distances from the top of bank to the Project Area extent and areas of known erosion. This is recommended to occur annually for 3 years and then reviewed; and</li> <li>• Event-based monitoring (flood or high flow events): site investigation and mapping of problem erosion areas.</li> </ul>	All phases
AE11	<p>Offset any impacted key fish habitat.</p>	All phases

### 6.3 ABORIGINAL HERITAGE

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared to assess the impacts the Project may have on Aboriginal heritage values and resources. The ACHAR also recommends mitigation and risk management measures to be implemented to avoid or minimise these impacts. The ACHAR is provided in **Appendix H**.

Preparation of the ACHAR included desktop investigations, consultation with local Aboriginal communities, and an aboriginal heritage survey. Representatives of the Registered Aboriginal Parties (RAPs) were present for the aboriginal heritage survey.

The ACHAR addresses relevant SEARs (refer **Appendix A**), considers relevant legislation and stakeholder engagement (refer **Section 5**), and was prepared in accordance with the following guidelines:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Consultation Requirements) (NSW DECCW, 2010a);
- Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (Code of Practice) (NSW DECCW, 2010b);
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH, 2011) (ACHAR Guide); and
- The Australia International Council on Monuments and Sites, Charter for Places of Cultural Significance (also known as the Burra Charter) (Australia ICOMOS, 2013).

In accordance with the ACHAR Guide, Ecologically Sustainable Development (ESD) principles have also been considered in the preparation of this ACHAR. The ACHAR is compliant with the relevant ESD principles, which includes 'The Precautionary Principle' and 'The principle of Intergenerational Equity'.

### 6.3.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal community consultation for the Project included four main stages:

- Stage 1: Notification of project proposal and registration of interest;
- Stage 2: Presentation of information about the proposed Project and assessment methodology to RAPs;
- Stage 3: Gather information about Cultural Significance; and
- Stage 4: Draft ACHAR issued to RAPs for review.

A total of 17 RAPs were identified. All RAPs were invited to provide feedback on cultural heritage significance, with a total of 12 RAPs attending the heritage survey. The draft ACHAR was submitted to RAPs on 23 May 2025. Each of the RAPs was provided 28 days to provide comments on the report and any recommended management and mitigation measures, prior to finalisation. No comments were received.

Aboriginal community consultation was undertaken in accordance with the Consultation Requirements (NSW DECCW, 2010a). All correspondence was recorded in the Aboriginal Heritage Consultation Log, which is appended to the ACHAR (**Appendix H**).

### 6.3.2 EXISTING ENVIRONMENT

The nature and distribution of Aboriginal cultural values and materials in a landscape are strongly influenced by environmental factors. These environmental factors are used in constructing predictive models of Aboriginal site locations and also impact the likelihood of cultural materials/sites being preserved and consequently detected during archaeological surveys.

Evaluation of the environmental setting determined that the landform and hydrology of the region was suitable for temporary and seasonal habitation, containing flora and fauna that may be integral to the Gomerai culture. However, aspects of the geomorphology and soils may create a complex environment for archaeological preservation, with factors that contribute to both long-term stability and potential disturbance of artefacts. This may be further exacerbated by land use. Agriculture in the region in the 1830s, with the number of settlers

increasing as the agricultural and mining industries expanded. This resulted in dispossession of traditional lands, restricted land access and resources for Indigenous communities and introduction of western diseases.

Further detail is provided in the ACHAR (**Appendix H**).

#### 6.3.2.1 ETHNOGRAPHIC HISTORY

The Garoo and Tamworth region has been home to Aboriginal communities for thousands of years, with the Kamilaroi (also known as Gamilaraay) people maintaining deep cultural and spiritual connections to the land. It is estimated that at least 60 Kamilaroi clans inhabited the region, with a total population of approximately 10,000 in the central northern NSW. Numerous bora grounds, rock art sites, and cultural modified trees have been recorded, further evidencing the significant intangible cultural value of the region.

Kamilaroi communities followed a semi sedentary lifestyle, likely moving between a small number of well-established sites in response to seasonal food availability. Native fauna and flora were crucial to the Kamilaroi diet, with fishing being an essential part of Kamilaroi subsistence. As such, Kamilaroi communities often established campsites near water sources, with numerous encampments recorded along the Namoi River and associated billabongs.

The Kamilaroi language is deeply embedded in the regions name places, such as Bingara ('shallow crossing') and Barraba ('camp by the riverbank'), with RAPs confirming 'Garoo' translates to 'uncle'. The preservation of Kamilaroi language reflects the enduring connection between Indigenous communities and the landscape.

#### 6.3.2.2 REGISTERED ABORIGINAL HERITAGE SITES

A search of the Aboriginal Heritage Information Management System (AHIMS) and Aboriginal Heritage Impact Public (AHIP) register returned no results, indicating no registered sites are present within the vicinity of the Project Area.

The results of the full AHIMS search is appended to the ACHAR (**Appendix H**).

#### 6.3.2.3 REGIONAL ARCHAEOLOGICAL BACKGROUND

Publicly available archaeological reporting was analysed as part of the ACHAR to identify existing cultural heritage within the region. This included academic resources, ACHARs for nearby developments, and due diligence assessments.

Multiple Aboriginal heritage sites and artefacts have been identified in the region, including Culturally Modified Trees (CMTs), grinding groves, artefact scatters and open camps sites. The locations of these sites ranged from 24-50 km away from the Project Area and further highlight the cultural significance of the region. Further detail on each report is provided in the ACHAR (**Appendix H**).

#### 6.3.2.4 LOCAL ARCHAEOLOGICAL BACKGROUND

A summary of the local archaeological context has been developed using the results of publicly available archaeological reporting and registered AHIMS sites within and in the vicinity of the Project Area. This provided an indication of the range, nature, and distribution of archaeological sites within the local area.

The review of data allowed for the development of a predictive site model. This model indicates that Aboriginal occupation of the Project Area is likely to have been low density, transient occupation, with most archaeological sites located close to watercourses. Additionally, Aboriginal sites are most likely to be located in landscapes which have been subject to low historic disturbance, with potential CMTs and stone artefacts present.

Overall, the Project Area is considered to demonstrate moderate potential to contain Aboriginal sites.

The predictive model is included in full in **Appendix H**.

### 6.3.3 IMPACT ASSESSMENT

#### 6.3.3.1 NEWLY RECORDED ABORIGINAL SITES

The aboriginal heritage survey was undertaken on 26 -28 February 2025, with the full methodology and RAP attendance detailed in **Appendix H**.

A total of 13 new sites were identified during the survey, which have all been registered on AHIMS. These are summarised in **Table 6-1**, with their locations illustrated in **Figure 6-5**. Detailed descriptions are provided in **Appendix H**.

**TABLE 6-7 NEWLY IDENTIFIED SITES AND AHIMS DETAILS**

AHIMS Site Name	AHIMS ID	Site Type
GSF CMT 01	29-2-0490	Modified Tree
GSF CMT 02	29-2-0488	Modified Tree
GSF CMT 03	29-2-0487	Modified Tree
GSF CMT 04	29-2-0492	Modified Tree
GSF CMT 05	29-2-0493	Modified Tree
GSF AS 01	29-2-0489	Artefact (multiple)
GSF AS 02	29-2-0491	Artefact (multiple); Hearth
GSF AS 03	29-2-0498	Artefact (multiple)
GSF AS 04	29-2-0499	Artefact (multiple)
GSF AS 05	29-2-0497	Artefact (multiple)
GSF ISO 01	29-2-0494	Artefact (isolated)
GSF ISO 04	29-2-0495	Artefact (isolated)
GSF ISO 05	29-2-0496	Artefact (isolated)

**FIGURE 6-5 ABORIGINAL HERITAGE SITES WITHIN THE PROJECT AREA**

<Redacted For Public Display>

### 6.3.3.2 ABORIGINAL ARCHAEOLOGICAL POTENTIAL

The archaeological potential of the Project Area is varied, with areas in close proximity to the creeks and drainage lines being of high to moderate potential and those areas that have endured extensive modifications and impacts being of low to moderate potential.

The distribution of recorded sites is consistent with the predictive model, which has been refined to determine Aboriginal heritage sensitivity. Recorded sites are presented in **Figure 6-6**.

### 6.3.3.3 SIGNIFICANCE ASSESSMENT

The ACHAR provides an assessment of significance for the cultural heritage sites located within the Project area, completed in accordance with the ACHAR Guide (OEH, 2011). The assessment is based on consultation with RAPs and the Local Aboriginal Land Council (LALC), background research, and the archaeological field surveys, with the full methodology presented in the ACHAR (**Appendix H**).

The following cultural heritage values were identified within and/or adjacent to the Project Area:

- Freshwater;
- Cultural landscapes (Rainbow Serpent);
- Aboriginal heritage sites; and
- Food and raw materials.

All Aboriginal heritage sites were considered to have Moderate significance, primarily due to the cultural significance. A summary of significance assessment is detailed in **Table 6-8**.

**TABLE 6-8 SUMMARY OF ABORIGINAL HERITAGE SIGNIFICANCE**

Significance Theme	Summary
Social or cultural	All Aboriginal sites are considered to have cultural significance to the Aboriginal community as they provide physical evidence of past Aboriginal use and occupation of the area.
Historic	No specific person or event of historic value was identified, and therefore the Project Area was assessed to have low historic significance.
Scientific	Three aboriginal site types were identified. The overall scientific significance of these sites is as follows: <ul style="list-style-type: none"> <li>• Artefact sites– Low significance;</li> <li>• CMT – Moderate significance; and</li> <li>• Hearth – Low significance.</li> </ul>
Aesthetic	Project Area was assessed to have low aesthetic significance due to the absence of landmark features within the landscape.

## FIGURE 6-6 ABORIGINAL HERITAGE SENSITIVITY MAPPING

<Redacted for Public Display>

### 6.3.3.4 SUMMARY

The Project layout in place at the time of the Aboriginal heritage survey would have impacted a total of 13 Aboriginal sites, including five CMTs, three isolated artefacts, four artefact scatters, and one hearth.

The Applicant made several design changes in April 2025 to minimise and reduce impacts to all Aboriginal heritage sites. This amended design excluded all aboriginal heritage sites from the Development Footprint, and as such the potential impact of the Project on all aboriginal heritage sites was assessed to be low. This is demonstrated on **Figure 6-7**.

### 6.3.4 MITIGATION AND MANAGEMENT

Mitigation and management measures to protect Aboriginal cultural heritage are presented in **Table 6-9**.

**TABLE 6-9 ABORIGINAL HERITAGE MITIGATION AND MANAGEMENT MEASURES**

ID	Mitigation Measures	Phase
AH1	The Applicant would re-design the Project to avoid and preserve Aboriginal sites. It is noted that an amendment to the Project layout was actioned in April 2025, which reduced direct impacts to all identified sites.	Detailed design
AH2	Any design changes that occur in areas that may impact registered sites requires additional assessment and consultation.	Detailed design
AH3	Site buffers of at least 10m would be implemented to all recorded CMTs.	All phases
AH4	Development of an Unexpected Finds Procedure (UFP), which includes: <ul style="list-style-type: none"> <li>• Immediate cease works and flagging protocols;</li> <li>• Appropriate notification and notification protocols; and</li> <li>• Unanticipated human remains protocols.</li> </ul>	Construction
AH5	A cultural heritage induction is to be completed by all construction workers, which will include: <ul style="list-style-type: none"> <li>• A summary of the cultural heritage values of the Project Area and surrounds;</li> <li>• Guidance on the identification of potential Aboriginal objects / heritage finds; and</li> <li>• A summary of the UFP.</li> </ul>	Construction
AH6	Mechanisms to acknowledge Aboriginal cultural values and history of the region be incorporated into ongoing operations of the Project Area.	All phases
AH7	The Applicant will develop an ACHMP in consultation with the RAPs and DPHI (with input from Heritage NSW). The ACHMP will incorporate all mitigation and management measures outlined above. Construction cannot commence until the ACHMP has been approved by DPHI.	All phases

## FIGURE 6-7 POTENTIAL IMPACTS TO ABORIGINAL CULTURAL HERITAGE SITES

<Redacted For Public Display>

## 6.4 HISTORIC HERITAGE

A Historic Heritage Assessment (HHA) has been prepared to assess impacts the Project may have on non-aboriginal historic heritage resources. The HHA also recommends mitigation and risk management measures to avoid or minimise potential impacts. The HHA is provided in **Appendix I**.

The HHA was informed by desktop investigations and an archaeological field survey, which was undertaken on 26 - 28 February 2025. The HHA addresses the relevant SEARs (refer **Appendix A**), considers relevant legislation and stakeholder engagement (refer **Section 5**), and was prepared in accordance with the following guidelines:

- Assessing Heritage Significance (NSW Heritage Office, 2001);
- Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Council of NSW, 2009);
- NSW Heritage Manual (NSW Heritage Office, 1996); and
- The Burra Charter (Australia ICOMOS, 2013) and relevant Practice Notes.

### 6.4.1 EXISTING ENVIRONMENT

#### 6.4.1.1 HISTORICAL OVERVIEW

Colonial settlers began occupying the New England region in the 1830s for cattle grazing, with the Australian Agricultural Company establishing Tamworth in 1832. Transport routes were developed in the mid to late 1800s, supporting the significant development of agriculture in the Tamworth region. The 1850s goldrush and asbestos mining also supported local economies.

Historic mapping indicates that the property encompassing the Project Area was proclaimed a 'Special Area' in 1896 and was acquired by the first landowner in 1901. The property has subsequently been acquired by multiple families and/or corporations and was purchased by the current owners family in the 1920s. Historical imagery indicates that much of the existing infrastructure was present by 1976, with additional sheds constructed more recently (post 1998). It was determined during the heritage survey that an older hut, which is no longer erected, was present on the eastern side of the Property. Sherds of pottery and glass were identified in this area.

#### 6.4.1.2 EXISTING HISTORICAL DATA

There are no registered historical heritage sites, places or properties within the Project Area listed on relevant statutory heritage databases.

The Project Area has not been previously assessed for historic heritage values. Goonoo Goonoo Station, located approximately 15 km north of the Project Area, provides regional context to a historical archaeological assessment of the current Project Area. It was assessed as having considerable historic significance, being noted to provide evidence of early European settlement.

### 6.4.2 IMPACT ASSESSMENT

Ceramic and glass sherds were discovered at the location of the old hut (refer **Section 6.4.1.1**), however it is considered unlikely that significant subsurface remains of the hut are preserved. Other discrete or insubstantial agricultural features could be present in the Project Area, including rubbish pits and postholes. However, the evolving agricultural landscape makes it unlikely that these insubstantial features would present with good integrity. Archaeological potential of the Project Area has been assessed as low.

No built heritage items are located within the Project Area or its immediate vicinity, and any archaeological resources are considered have low archaeological research potential. Therefore, archaeological resources have low archaeological heritage significance.

Based on the findings of the HHA, the Project Area has low historic heritage value, and the Project will have negligible archaeological impact.

### 6.4.3 MITIGATION AND MANAGEMENT

**Table 6-10** summarises the mitigation and management measures to be implemented for the Project to ensure any potential impacts to the yet unidentified heritage values of the Project Area are minimised.

**TABLE 6-10 HISTORIC HERITAGE MITIGATION MEASURES**

ID	Mitigation Measures	Phase
HH1	A Heritage Induction will be conducted prior to the commencement of works, with all staff and contractors briefed on the requirements of the Heritage Act and the UFP (as detailed in <b>Appendix I</b> ).	Construction
HH2	In the event that relics are unexpectedly exposed, works should cease immediately. The management of relics should be in accordance with NSW Heritage guidelines and policies, as outlined in the UFP (as detailed in <b>Appendix I</b> ).	Construction

### 6.5 NOISE

A Noise Impact Assessment (NIA) has been prepared to assess the potential noise impacts associated with the construction and operation of the Project, and to recommend feasible and reasonable noise mitigation and management measures. The NIA is presented in **Appendix J**.

The NIA responds to relevant SEARs (refer **Appendix A**) and considers relevant stakeholder engagement (refer **Section 5**), and was prepared in accordance with the following guidelines:

- NSW Interim Construction Noise Guideline (ICNG) (NSW DECC, 2009);
- NSW Noise Policy for Industry (NPI) (NSW EPA, 2017a); and
- NSW Road Noise Policy (RNP) (NSW DECCW, 2011).

The NIA is supported by a noise model which was developed to predict noise levels generated during the construction and operation of the Project and the potential impacts at the identified sensitive receivers. A detailed methodology can be found in the NIA (**Appendix J**).

### 6.5.1 EXISTING ENVIRONMENT

The noise environment in the vicinity of the Project and at noise sensitive receivers is best described as rural residential. Rural residential is described in the NPI (NSW EPA, 2017b) as an area with an acoustical environment that is dominated by natural sounds (such as foliage noise, birdsong and insect noise) having little or no road traffic noise and is generally characterised by low background noise levels. Settlement patterns are typically sparse.

There is a total of 19 noise-sensitive receivers within 2 km of the Project boundary, with the closest receiver about 163 m from the Project boundary. The sensitive receivers are all residential properties, which are detailed in the NIA (**Appendix J**).

The background noise levels at the noise sensitive receivers within 2 km of the Project are expected to be similar to the minimum assumed Rating Background Levels (RBLs) specified in Table 2.1 of the NPI, i.e.:

- 35 dB(A) during the day-time period defined as 7am to 6pm (Monday to Friday) and 8am to 6pm (Sundays and Public Holidays);
- 30 dB(A) during the evening period defined as 6pm to 10pm; and
- 30 dB(A) during the night-time period defined as 10pm to 7pm (Monday to Saturday) and 10pm to 8am (Sundays and public holidays).

### 6.5.2 IMPACT ASSESSMENT

For this assessment, noise monitoring was not conducted and instead the minimum assumed RBLs were adopted, as per the NPI. This allows for the strictest construction Noise Management Levels (NMLs) and Project Noise Trigger Levels (PNTLs) to be developed.

#### 6.5.2.1 CONSTRUCTION NOISE AND VIBRATION

Construction works will only occur only during the recommended standard day-time hours recommended in the ICNG (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturday; no work on Sundays or NSW public holidays). Typical construction noise sources are associated with plant and equipment.

The project-specific construction NMLs for works within the recommended standard hours are:

- Daytime Rating Background Level: 35 dB(A);
- Noise Affected Management Level, Leq(15 min): 45 dB(A); and
- Highly Noise Affected Management Level Leq(15 min): 75 dB(A)

The potential noise impacts were assessed under the following worst-case construction noise scenarios:

- **CON 1** - Site preparation and establishment - A drum roller and a padfoot roller at the site's boundary fronting a sensitive receiver and operating continuously for 15 minutes;
- **CON 2** - Delivery of infrastructure – Two cranes at the site's boundary fronting a sensitive receiver and operating continuously for 15 minutes; and
- **CON 3** - General construction of infrastructure – Two small pile driving rigs at the site's boundary fronting a sensitive receiver and operating continuously for 15 minutes.

Under the worst case scenario, construction noise sources are assumed to be at the boundary of the site fronting the nearest sensitive receivers, representing the shortest separation distance between noise source and receiver.

The predicted construction noise levels for each scenario are presented in **Table 6-11**. The key findings are summarised as follows:

- The ICNG 'noise affected' management level is exceeded at five Sensitive Receivers (R2a, R3, R4, R5, R2b) for construction scenario CON 1, CON2 and CON3;
- No exceedance of the ICNG 'highly affected' management level at any of the sensitive receivers is expected for all construction scenarios; and
- The main noise contributors are the drum roller, the padfoot roller, the cranes and the small pile driving rigs, as defined in the worst-case construction noise scenarios.

The safe working distances for typical vibration causing plant in construction range from 7 to 100 metres to trigger a human response, as per the Transport for New South Wales Construction Noise Strategy (TfNSW, 2016). There is no vibration sensitive receiver within this range and therefore vibration impacts are not expected from the Project.

A Construction Noise and Vibration Management Plan (CNVMP) is required as per standard practice for construction in NSW. A draft CNVMP has been appended to the NIA (**Appendix J**).

TABLE 6-11 PREDICTED CONSTRUCTION NOISE LEVELS

Sensitive Receiver ID	Equipment															Scenario		
	Small pile driving rig	Crane	Drum roller	Padfoot roller	Wheeled loader	Dump truck	Excavator	Bulldozer	Scraper	Grader	Chain trencher	Water truck	Telehandler	Forklift	Tub Grinder/Mulcher	CON 1	CON 2	CON 3
R2b	<b>62</b>	<b>58</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>56</b>	<b>55</b>	<b>56</b>	<b>64</b>	<b>55</b>	<b>52</b>	<b>52</b>	<b>46</b>	38	<b>64</b>	<b>60</b>	<b>61</b>	<b>65</b>
R2	<b>57</b>	<b>53</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>51</b>	<b>50</b>	<b>51</b>	<b>59</b>	<b>50</b>	<b>47</b>	<b>47</b>	41	33	<b>59</b>	<b>55</b>	<b>56</b>	<b>60</b>
R3	<b>56</b>	<b>52</b>	<b>51</b>	<b>51</b>	<b>51</b>	<b>50</b>	<b>49</b>	<b>50</b>	<b>58</b>	<b>49</b>	<b>46</b>	<b>46</b>	40	32	<b>58</b>	<b>54</b>	<b>55</b>	<b>59</b>
R4	<b>54</b>	<b>50</b>	<b>49</b>	<b>49</b>	<b>49</b>	<b>48</b>	<b>47</b>	<b>48</b>	<b>56</b>	<b>47</b>	44	44	38	30	<b>56</b>	<b>52</b>	<b>53</b>	<b>57</b>
R5	<b>51</b>	<b>47</b>	<b>46</b>	<b>46</b>	<b>46</b>	45	44	45	<b>53</b>	44	41	41	35	27	<b>53</b>	<b>49</b>	<b>50</b>	<b>54</b>
R6	42	38	37	37	37	36	35	36	44	35	32	32	26	18	44	40	41	45
R9	42	38	37	37	37	36	35	36	44	35	32	32	26	18	44	40	41	45
R8	41	37	36	36	36	35	34	35	43	34	31	31	25	17	43	39	40	44

Noise Affected Management Level exceedances are shown in bold font. Important to note that these exceedances are only when the specific machinery is operating, or stated construction scenario is occurring.

### 6.5.2.2 OPERATIONAL NOISE

The NIA applies PNTLs as defined in the NPI, which are the most stringent threshold is set concerning existing industrial noise in the area. Minimum PNTLs for residential receivers are provided in **Table 6-12**. Sleep disturbance relates to both awakenings and disturbance to sleep stages.

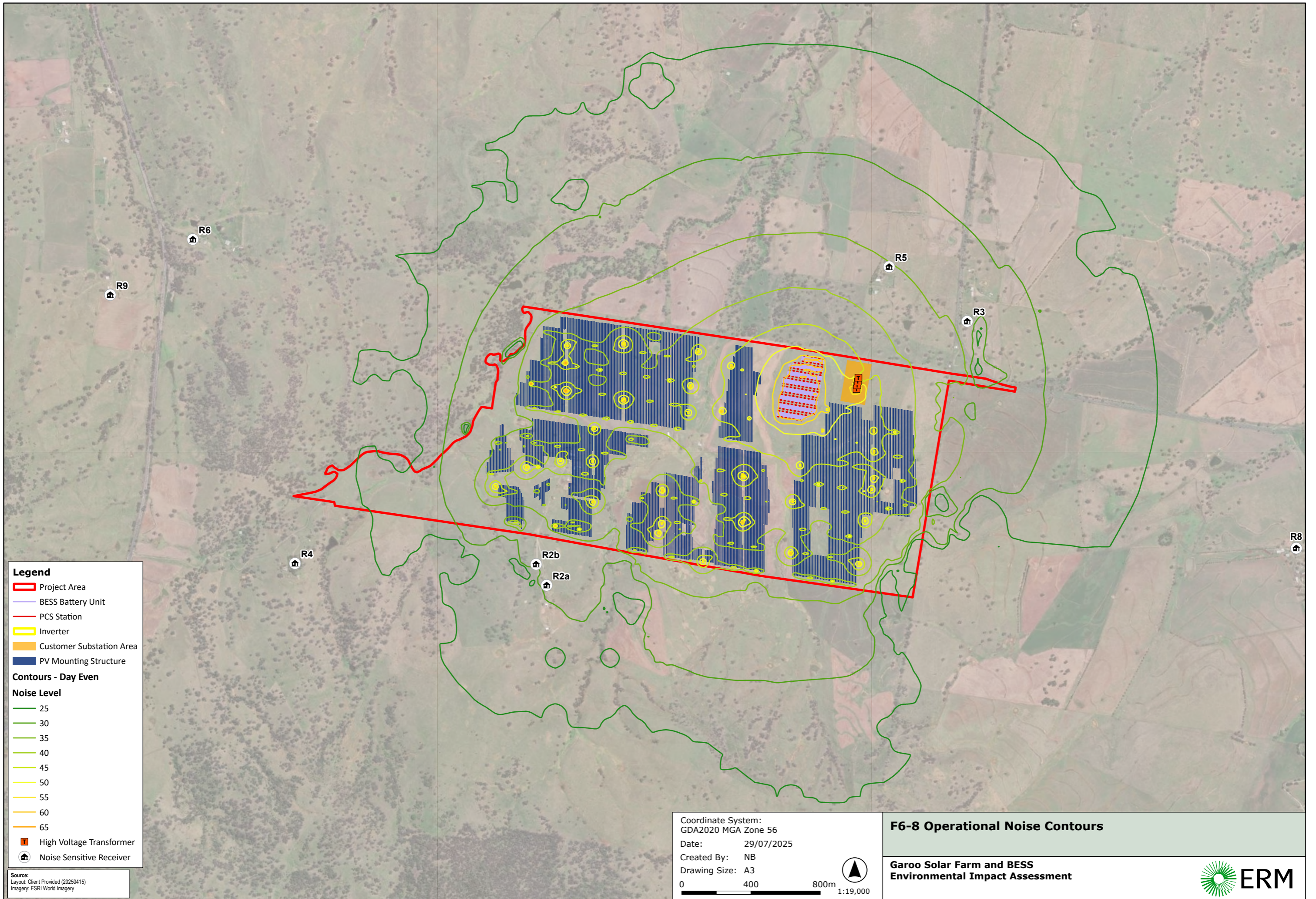
**TABLE 6-12 MINIMUM ASSUMED PNTLS FOR RESIDENTIAL RECEIVERS**

Assessment period	Project Intrusiveness Noise Level $L_{Aeq,15min}$ dB(A)	NPI Amenity Noise Level $L_{Aeq,period}$ dB(A)	Project Amenity Noise Level $L_{Aeq,15min}$ dB(A) <sup>c,d</sup>	PTNL $L_{Aeq,15min}$ dB(A)	Sleep Disturbance $L_{Amax}$
Day	40	50	48	<b>40</b>	-
Evening	35	45	43	<b>35</b>	-
Night	35	40	38	<b>35</b>	<b>52</b>

Operational noise sources include tracker motor for the PV module, inverter, high voltage transformer, BESS container and the Power Conversion System. Noise mitigation measures have been considered in the Project design and have been incorporated into the assessment of predicted operational noise levels.

Predicted operational noise levels for noise-sensitive receivers within 2 km of the Project boundary for the day, evening and night-time in enhancing meteorological conditions are presented in the NIA (**Appendix J**). Predicted operational noise contours are presented in **Figure 6-8**.

The predicted noise levels indicate compliance with the relevant PNTLs at all noise sensitive receivers.



**Legend**

- ▭ Project Area
- ▭ BESS Battery Unit
- ▭ PCS Station
- ▭ Inverter
- ▭ Customer Substation Area
- ▭ PV Mounting Structure

**Contours - Day Even**

**Noise Level**

- 25
- 30
- 35
- 40
- 45
- 50
- 55
- 60
- 65

- ▭ High Voltage Transformer
- ▭ Noise Sensitive Receiver

Source:  
Layout: Client Provided (20250415)  
Imagery: ESRI World Imagery

Coordinate System:  
GDA2020 MGA Zone 56

Date: 29/07/2025


Created By: NB

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**F6-8 Operational Noise Contours**

**Garoo Solar Farm and BESS  
Environmental Impact Assessment**



### 6.5.2.3 TRAFFIC NOISE

The RNP criteria applicable to the nearest residences affected by additional road traffic due to the Project are presented in **Table 6-13**. Application of RNP criteria for assessment of temporary construction traffic noise is considered conservative. Existing road traffic data used in the assessment of traffic noise impacts was obtained from the TIA (**Appendix P**).

**TABLE 6-13 RNP RESIDENTIAL ROAD TRAFFIC NOISE CRITERIA**

Road Category	Type of Project/Land Use	Assessment Criteria – dB(A)	
		Day 7am to 10pm	Night 10pm to 7am
Freeway/ arterial/ sub-arterial (Garoo Road)	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	60 L <sub>Aeq,15 hour</sub> (external)	55 L <sub>Aeq,9 hour</sub> (external)

Note: The assessment criteria for external noise levels apply at 1 metre from the façade of any affected residential receiver.

Noise sensitive receiver R3 (identified in **Appendix J**) was selected as the assessment location as it has the highest potential to be affected by construction traffic noise. The predicted road traffic noise levels at R3 indicate compliance with the day and night-time RNP criteria during the peak construction traffic period. Although construction traffic noise impacts are predicted to be insignificant, general best practice road traffic noise control measures are considered in the recommended mitigation (refer **Section 6.5.3**).

Traffic noise impacts at sensitive receivers during the operational stage of the Project are expected to be negligible due to the minimal change in traffic generation.

### 6.5.2.4 TEMPORARY WORKERS' ACCOMMODATION CAMP

The temporary workers' accommodation camp will comprise of up to 75 portable cabins and consists of the following noise sources:

- Air conditioning condenser outdoor units; and
- Use of the car parking facilities, north of the cabins.

The closest noise sensitive receiver, R3, is located approximately 700 m northeast of the accommodation camp.

Based on the noise modelling methodology described in the NIA (**Appendix J**) and assuming a worst-case scenario during the peak construction period, no exceedances of the ICNG 'noise affected' management level during outside of recommended standard hours (35 dB(A) L<sub>eq(15 min)</sub>) at any of the noise sensitive receivers is expected as a result of air conditioning condenser outdoor units or the car parking facilities.

During the recommended standard hours, noise from car parking facilities will not contribute to noise generated by other construction noise sources.

It should be noted no other construction noise sources other than air conditioning are expected to be present outside of the recommended standard hours.

### 6.5.3 MITIGATION AND MANAGEMENT

Mitigation and management measures that will be implemented to minimise traffic impacts are summarised in **Table 6-15**.

**TABLE 6-14 NOISE MITIGATION AND MANAGEMENT MEASURES**

ID	Mitigation Measures	Phase
N1	Noise generating work and activities should be (as proposed) limited (where possible) to the ICNG recommended standard hours (i.e., 7am to 6pm Monday to Friday and 8am to 1pm Saturdays and no work on Sundays or public holidays).	Construction
N2	Where an equipment item operates close to the Project Boundary and these works are anticipated to generate high levels of noise e.g., > 45 dB(A) at a sensitive receiver, potential respite periods, e.g., three hours of work, followed by one hour of respite should be applied. Respite should be implemented if it is the preference of the affected receivers and if they are feasible and reasonable, and practical, to implement during the works.	Construction
N3	Appropriate plant, equipment and/or machinery for each task should be selected and efficient work practices to minimise the total construction period and the number of noise sources on the site should be adopted.	Construction
N4	Unnecessary noise due to idling engines should be avoided. High engine speeds should be avoided when equipment can be powered down and lower engine speeds are feasible.	Construction
N5	All plant, equipment and/or machinery used on the site should be in suitable condition, with particular emphasis on exhaust silencers, covers on engines and inspection of squeaking or rattling components. Excessive noise-generating machines should be repaired or removed from the site.	Construction
N6	Reversal alarms shall be replaced with broadband "squash duck" motion alarms, where feasible.	Construction
N7	If any validated noise complaints are received, operator attended noise validation and compliance measurements should be undertaken to measure and compare the site noise level contributions to the NMLs presented in this report. All site noise levels should be measured and quantified in the absence of any influential noise sources not associated with the Project. If the measured site noise levels are above the NMLs presented in this report, further mitigation and/or management measures should be considered.	Construction
N8	Unattended noise monitoring systems shall be established at selected worst-affected sensitive receivers depending on the different activities and stages of construction when such details are finalised. The results shall be used to improve the noise mitigation and management measures for the Project so that best practice noise control is continually implemented.	Construction
N9	As per standard practice for any construction activities in NSW, a Construction Noise Management and Vibration Plan (CNVMP) containing noise mitigation and management measures shall be created for the construction phase of this Project. This is to include construction traffic noise management.	Construction
N10	Consultation and notification: <ul style="list-style-type: none"> <li>• Provide, reasonably ahead of time, information such as duration, what is being done to minimise noise and when respite periods will occur;</li> <li>• Provide information to neighbours before and during construction through media such as letterbox drops, meetings or individual contact. In some areas, the proponent will need to provide notification in languages other than English. A website could also be established for the project to provide information;</li> </ul>	Construction

ID	Mitigation Measures	Phase
	<ul style="list-style-type: none"> <li>• Use a site information board at the front of the site with the name of the organisation responsible for the site and their contact details, hours of operation and regular information updates. This signage should be clearly visible from the outside and include afterhours emergency contact details;</li> <li>• Maintain good communication between the community and project staff;</li> <li>• Appoint a community liaison officer where required;</li> <li>• Provide a toll-free contact phone number for enquiries during the works; and</li> <li>• Facilitate contact with people to ensure that everyone can see that the site manager understands potential issues, that a planned approach is in place and that there is an ongoing commitment to minimise noise.</li> </ul>	
N11	<p>Complaints handling:</p> <ul style="list-style-type: none"> <li>• Provide a readily accessible contact point, for example, through a 24-hour toll-free information and complaints line;</li> <li>• Give complaints a fair hearing;</li> <li>• Have a documented complaints process, including an escalation procedure so that if a complainant is not satisfied there is a clear path to follow;</li> <li>• Call back as soon as possible to keep people informed of action to be taken to address noise problems;</li> <li>• Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information;</li> <li>• Implement all feasible and reasonable measures to address the source of complaint; and</li> <li>• Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, work area (for larger projects), time of verbal response and timeframe for written response where appropriate.</li> </ul>	Construction
N12	<p>Work Scheduling:</p> <ul style="list-style-type: none"> <li>• Provide respite periods: Consult with affected residents to ensure that noise-generating construction works are acceptable at those times;</li> <li>• Organise work to be undertaken during the recommended standard hours where possible;</li> <li>• Schedule work when neighbours are not present;</li> <li>• Schedule noisy activities around times of high background noise (local road traffic or when other local noise sources are active) where possible to provide masking or to reduce the amount that the construction noise intrudes above the background;</li> <li>• Consult with affected neighbours about scheduling activities to minimise noise impacts; and</li> <li>• Where night work near residences cannot be feasibly or reasonably avoided, restrict the number of nights per week and/or the number of nights per calendar month that the works are undertaken, in consultation with residents who will be most affected.</li> </ul>	Construction
N13	<p>Noise Reduction kits and silencer kits are to be installed on the following items:</p> <ul style="list-style-type: none"> <li>• All inverters located in-between PV module structures;</li> <li>• All BESS Battery Units; and</li> <li>• All PCS Stations.</li> </ul>	Operation
N14	<p>Installation of 45 noise walls, with the following configuration:</p> <ul style="list-style-type: none"> <li>• 4.0 m high L-shaped at the identified PCS stations; and</li> <li>• 8.0 m high C-shaped at the three high voltage transformers. <p>Location and engineering requirements are detailed further in the NIA (<b>Appendix J</b>).</p> </li></ul>	Operation

## 6.6 LANDSCAPE AND VISUAL

A Landscape Character and Visual Impact Assessment (LCVIA) was undertaken to assess the potential visual impacts the Project may have on the character, values, and amenity of the surrounding landscape (Moir Studio, 2025). The LCVIA also outlines recommendations and management measures to mitigate the potential visual impacts resulting from the Project. The LCVIA is presented in **Appendix K**.

The LCVIA addresses relevant SEARs (refer **Appendix A**), considers stakeholder engagement (refer **Section 5**) and was prepared in accordance with the following guidelines:

- The Solar Guideline; and
- Technical Supplement - Landscape Character and Visual Impact Assessment (NSW DPPI, 2022b).

### 6.6.1 EXISTING ENVIRONMENT

Stakeholder engagement (refer **Section 5**) has determined that the local community have the following visual concerns:

- Potential impacts on property value due to change in visual amenity;
- Loss of visual amenity; and
- Potential vegetation screening.

A Landscape Character Assessment was undertaken in March 2025 to determine the existing landscape character of the Study Area, which was defined as all land within 5 km of the Development Footprint. The assessment determined that the landscape character is typical of the Peel subregion of the NSW Nandewar IBRA, with land typically used for grazing, cropping and modified pastures.

Two Landscape Character Zones (LCZs) were identified within the Study Area: Agricultural Pastures (LCZ01) and Vegetated Hills (LCZ02). The Scenic Quality Rating for each LCZ was determined using the Scenic Quality Frame of Reference, in accordance with the Technical Supplement - Landscape Character and Visual Impact Assessment. The sensitivity of each LCZ, along with the magnitude of change anticipated from the Project, was then evaluated to determine the Landscape Character Impact Ratings. A summary of the results is provided in **Table 6-16**.

**TABLE 6-15 SUMMARY OF THE LANDSCAPE CHARACTER ASSESSMENT**

Landscape Character Zone	Scenic Quality Rating	Sensitivity	Magnitude	Landscape Character Impact
LCZ01	Very Low	Very Low	Low	Very Low
LCZ02	Moderate	Moderate	Very Low	Low

This assessment also included consideration of stakeholder engagement outcomes (refer **Section 5**), which determined the main concerns related to general visual amenity and potential impacts on property values.

A detailed overview of the Landscape Character Assessment is provided in the LCVIA (**Appendix K**).

## 6.6.2 IMPACT ASSESSMENT

The visual impact assessment was broken down into three stages: Simple Assessment, Intermediate Assessment and Detailed Assessment. These assess potential visual impact of the PV array on private and public receptors. A detailed description of assessment methodology is provided in the LCVIA (**Appendix K**).

### 6.6.2.1 SIMPLE ASSESSMENT

The Simple Assessment process was applied to identify public and private viewpoints within the Study Area that require further assessment, and eliminate those that are likely to experience very low to low visual impacts.

The visual Study Area was defined as:

- 2.5 km from the Development Footprint for all road and rail receptors; and
- 4 km from the Development Footprint for all private receptors and public viewpoints.

Fifteen private receptors (non-associated dwellings) were identified within 4 km of the Project, and six public viewpoints were identified within 4 km of the Project.

Viewshed mapping was undertaken to eliminate receptors that do not have a line of sight to the Project infrastructure. This process determined that undulating topography surrounding the Project limits visibility of the solar facility, with highest theoretical visibility of the Project associated with high points of land in the immediate north and south. Simple Assessment Tools were then applied to the any remaining receptors with theoretical line of sight. This process determined:

- Nine private receptors (non-associated dwellings) were identified within 4 km of the Development Footprint with line of sight to the Project, five of which require Intermediate Assessment; and
- Two public viewpoints within 2.5 km of the Development Footprint require Intermediate Assessment.

Results of the Simple Assessment are presented in **Figure 6-9**.

### 6.6.2.2 INTERMEDIATE ASSESSMENT

An Intermediate Assessment provides a more accurate assessment of the visual magnitude of the Project. An Intermediate Assessment was applied to:

- Five non-associated dwellings: R2a, R3, R4, R5, R2b; and
- Two public viewpoints: VP05 and VP06, which are both located on Garoo Road.

The Intermediate Assessment identified:

- Two non-associated dwellings (R2a and R2b) returned a 'High' and 'Very High' visual impact rating and required further Detailed Assessment. The remaining three private receptors returned a 'Low' or 'Very Low' visual impact rating and therefore require no further assessment; and
- The public viewpoints returned 'Very Low' visual impact rating and therefore require no further assessment.

Results of the Intermediate Assessment are presented in **Figure 6-10**.

### 6.6.2.3 DETAILED ASSESSMENT

A Detailed Assessment is a comprehensive assessment of visual magnitude of the Project, and involves a site visit to ascertain the extent of screening / filtering by intervening infrastructure or vegetation. A Detailed Assessment was undertaken for R2a and R2b (private non-associated dwellings).

Following the detailed assessment, both non-associated dwellings returned 'Moderate' visual impact rating. Therefore, mitigation is required, as per the Performance Objectives stated in the Technical Supplement for Landscape Character and Visual Impact Assessment.

### 6.6.2.4 ASSOCIATED INFRASTRUCTURE

In addition to the proposed PV arrays, the associated infrastructure has the potential to contrast with the existing visual landscape. Therefore, the visual impact resulting from the associated infrastructure was assessed. This included:

- BESS;
- On-site substations and associated components;
- Temporary construction compound;
- Temporary Workforce Accommodation Camp; and
- O&M Facility.

The rising topography and existing vegetation is anticipated to obstruct or fragment views of associated infrastructure. Additionally, there is existing energy infrastructure (the 330 kV transmission line) present in the landscape. Therefore, overall visual impact is low and no mitigation is required.

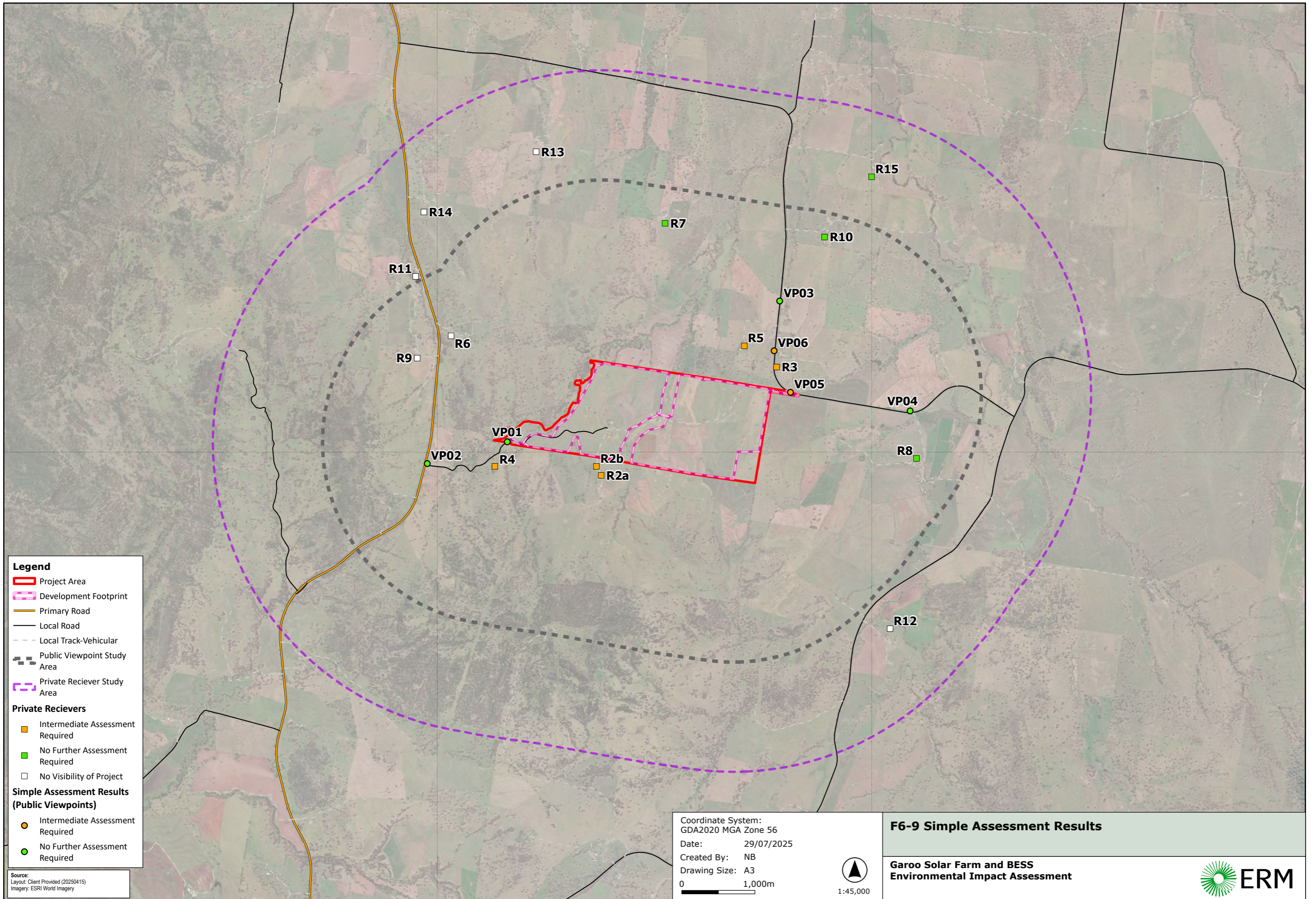
#### **Temporary Workforce Accommodation Camp**

Viewshed mapping was undertaken for the Temporary Workforce Accommodation Camp. Overall, the rising topography and existing roadside vegetation will obstruct and fragment the majority of the views of the camp from Garoo Road. Given the transient nature of views from this road and the absence of suitable pull-over areas, any potential views of the Project will be limited to short, fleeting glances.

Additionally, seven non-associated dwellings have the potential to view the camp, however due to the large distance and intervening vegetation, it is unlikely the camp will be visible.

The camp will include night lighting, designed in accordance with relevant guidelines such as Australian Standard (AS) 4282-2019 Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019), to minimise visual impacts and is not expected to impact sensitive receivers at the nearest residences located to the south of the Project (R2a and R2b).

Given the temporary nature of the camp, any visual impact will be temporary. The overall visual impact of the camp is considered low.



**Legend**

- Project Area
- Development Footprint
- Primary Road
- Local Road
- Local Track-Vehicular
- Public Viewpoint Study Area
- Private Receiver Study Area

**Private Receivers**

- Intermediate Assessment Required
- No Further Assessment Required
- No Visibility of Project

**Simple Assessment Results (Public Viewpoints)**


- Intermediate Assessment Required
- No Further Assessment Required

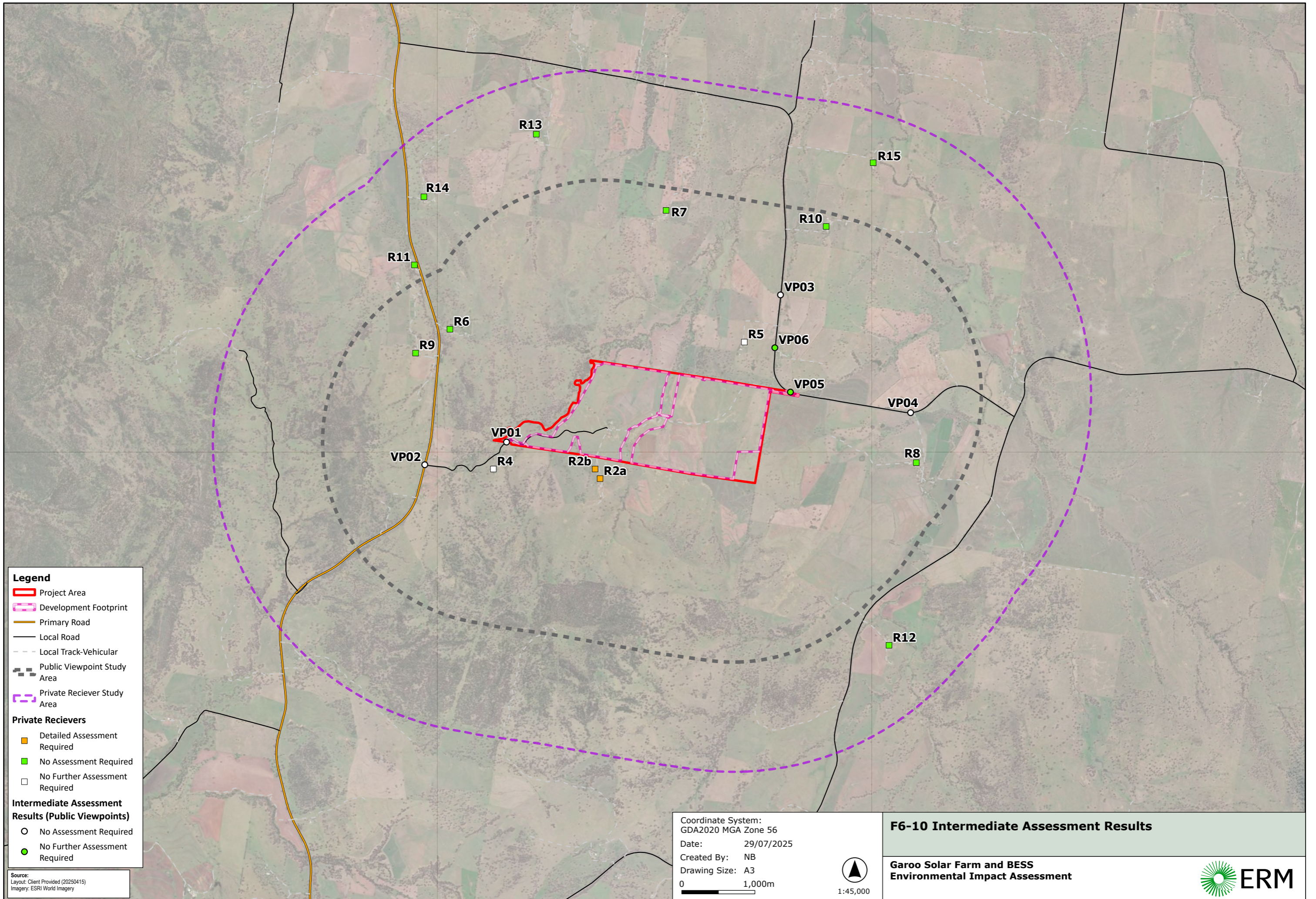
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**F6-9 Simple Assessment Results**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**





**Legend**

- Project Area
- Development Footprint
- Primary Road
- Local Road
- Local Track-Vehicular
- Public Viewpoint Study Area
- Private Receiver Study Area

**Private Receivers**

- Detailed Assessment Required
- No Assessment Required
- No Further Assessment Required

**Intermediate Assessment Results (Public Viewpoints)**

- No Assessment Required
- No Further Assessment Required

Source: Client Provided (20250415)  
 Layout: Client Provided (20250415)  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
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**F6-10 Intermediate Assessment Results**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**

### 6.6.3 MITIGATION AND MANAGEMENT

Mitigation and management measures that will be implemented to minimise visual impacts are summarised in **Table 6-17**. This includes design considerations and landscaping principles.

**TABLE 6-16 VISUAL MITIGATION AND MANAGEMENT MEASURES**

ID	Mitigation Measures	Phase
LV1	Existing vegetation generally present around the Project Area will be retained and protected to maintain the existing level of screening and to reduce the overall visual impact	All phases
LV2	Incorporate setbacks to infrastructure to allow for on-site screening where required in the form of perimeter planting	Detailed design
LV3	Consideration of the height of ancillary structures to ensure the Project does not contrast significantly with the surrounding landscape	Detailed design
LV4	Colours of the ancillary structures will be considered to ensure minimal contrast and to help blend into the surrounding landscape to the extent practicable.	Detailed design
LV5	Screen planting to fragment views of the Project from non-associated dwellings R2a and R2b, filling gaps in the existing windbreak vegetation. Screen planting to consider general landscaping principles, including remaining consistent with existing vegetation character.	All phases

### 6.7 GLINT AND GLARE

Solar PV panels can produce glint (a momentary flash of bright light) and glare (a continuous source of bright light), which can impact sensitive visual receptors such as road users, the surrounding rail network, air traffic controllers and pilots. While the Solar Guideline acknowledges that glint and glare impacts are uncommon with solar developments, the impacts still need to be modelled and assessed to identify, avoid and mitigate potential significant impacts (NSW DPFI, 2022a). The Glint and Glare report was completed by MoirStudio and is provided in **Appendix L**.

A Glint and Glare Assessment responds to the relevant SEARs (**Appendix A**) and considers relevant stakeholder engagement outcomes, discussed in **Section 5**. The Glint and Glare Assessment has been prepared in accordance with the Solar Guideline, and also considers the following guidelines and regulations:

- 'Large-Scale Energy Guideline – Technical Supplement for Landscape and Visual Impact' (NSW DPFI, 2022b);
- 'Guide to Road Design Part 3: Geometric Design, AGRD03-16' (Austroads, 2021b);
- 'Signal Sighting and Position, ESC-04-01' (Australian Rail Track Co. Ltd., 2010);
- 'Federal Aviation Administration Policy: Review of Solar Energy System Projects on Federally-Obligated Airports' (FAA, 2021); and
- 'Minimum Operating Standards for Rolling Stock – General Interface Requirements' (Transport NSW, 2020).

### 6.7.1 METHODOLOGY

The Glint and Glare Assessment utilises the Solar Glare Hazard Analysis Tool (SGHAT). The SGHAT is a modelling tool used to evaluate glare resulting from solar farms at different receptors, based on proximity, orientation and specifications of the PV modules, with a primary focus on yellow glare<sup>11</sup>. The SGHAT represents a worst-case scenario and does not account for factors such as weather conditions, intervening elements like vegetation, or built structures, which may influence the actual glare experienced.

A summary of backtracking parameters is provided in **Table 6-18**. Scenario 1 presents the 'worst-case scenario', to which impacts are assessed, whilst Scenario 2 and Scenario 3 are operational management strategies. Operational management strategies are an alternative mitigation measure, addressing potential causes of glint and glare through operational intervention.

Detailed limitations and assumptions are detailed in the Glint and Glare Assessment (**Appendix L**).

**TABLE 6-17 SUMMARY OF OPERATIONAL MANAGEMENT SCENARIOS**

Scenario	Description
Scenario 1	Worst case scenario: <ul style="list-style-type: none"> <li>• Normal tracking (tracking angle <math>\pm 60^\circ</math>);</li> <li>• Resting angle of <math>0^\circ</math>; and</li> <li>• Panels move between full operational range (maximum tilt).</li> </ul>
Scenario 2	<ul style="list-style-type: none"> <li>• Normal tracking (tracking angle <math>\pm 60^\circ</math>);</li> <li>• Resting angle of <math>5^\circ</math>;</li> <li>• Panels move between operational range (maximum tilt) and backtrack to a resting angle of <math>5^\circ</math>; and</li> <li>• Only return to <math>0^\circ</math> for stowing during night time.</li> </ul>
Scenario 3	<ul style="list-style-type: none"> <li>• Normal tracking during daylight hours (tracking angle <math>\pm 60^\circ</math>); and</li> <li>• Backtracking of panels to <math>0^\circ</math> only occurs during the night.</li> </ul>

In accordance with the Solar Guideline, the Glint and Glare Assessment considers:

- Residential receptors within 3 km of the solar array;
- Public receptors (roads and rail) within 1 km of the solar array; and
- Aviation receptors within 5 km of the solar array.

### 6.7.2 IMPACT ASSESSMENT

Residential, public, road, rail and aviation receptors were identified and assessed for potential impacts from glint and glare. All identified receptors were assessed against the worst-case scenario (Scenario 1), as detailed in **Table 6-18**.

Detailed findings are presented in **Appendix L**.

#### 6.7.2.1 RESIDENTIAL RECEPTORS

A total of eight residential receptors were identified within 3 km of the solar array.

<sup>11</sup> Red glare is not expected for PV and therefore not considered further. Green glare has low potential to cause after image and therefore deemed low impact.

The Glint and Glare Assessment determined five residential receptors (R2, R3, R4, R5 and R2b) experience low levels of overall glare impacts (green glare only) and therefore require no mitigation.

#### 6.7.2.2 PUBLIC RECEPTORS

A total of two road receptors were identified within 1 km of the solar array: Garoo Road and Bulls Road (unsealed). The Glint and Glare Assessment determined:

- Both roads have the potential to experience green glare. However, due to the speed of travel along roads, the time frame to experience the impacts of green glare are short. Therefore, the impacts are considered low, and no mitigation for green glare is required;
- Garoo Road is projected to experience no yellow glare. As such, overall glare impacts are considered low and no mitigation is required; and
- Bulls Road is projected to experience approximately 100.6 hours of yellow glare per year. This is considered as high overall glare impact, which requires mitigation. The following PV Arrays are responsible for the glare impacts to Bulls Road:
  - PV Array 10 – 20.1 hours per year, October to March;
  - PV Array 3 – 4.1 hours per year, November to February;
  - PV Array 4 – 39.6 hours per year, October to March;
  - PV Array 8 – 7.9 hours per year, May to August; and
  - PV Array 0 – 28.9 hours per year, March to October.

No rail receptors were identified within 1 km of the solar array.

#### 6.7.2.3 AVIATION RECEPTORS

No aviation receptors were identified within 5 km of the solar array; therefore, no mitigation is required for the Project.

### 6.7.3 MITIGATION AND MANAGEMENT

Operational management techniques are an alternative mitigation measure, mitigating the potential causes of glint and glare impacts through operational changes to the backtracking mode. The operations of the Project have been rigorously assessed, and adjustments to the tracking patterns have been modelled to reduce potential glare impacts. Scenario 3 effectively eliminates potential glare at all residential and road receptors. Therefore, it is an effective mitigation measure for glint and glare impacts.

Scenario 3 is summarised in **Table 6-19**.

**TABLE 6-18 MITIGATION AND MANAGEMENT MEASURES FOR GLINT AND GLARE IMPACTS**

ID	Mitigation Measures	Phase
GG1	Operational management of backtracking parameters to mitigate potential glare: <ul style="list-style-type: none"> <li>• Normal tracking during daylight hours (tracking angle <math>\pm 60^\circ</math>); and</li> <li>• Backtracking of panels to <math>0^\circ</math> only occurs during the night.</li> </ul>	Operation

## 6.8 LAND AND AGRICULTURE

A Land and Agriculture Impact Assessment (LAIA) was prepared to identify and evaluate the impacts associated with the construction and operation of the Project on agricultural resources and production. The LAIA also recommends relevant management measures to mitigate the identified impacts. The LAIA is provided in **Appendix M**.

The LAIA was prepared to address the relevant SEARs (refer **Appendix A**), stakeholder engagement (refer **Section 5**) and was prepared in accordance with the following guidelines:

- Solar Guideline (NSW DPHI, 2022a);
- The land and soil capability assessment scheme: second approximation (OEH, 2012);
- Land Use Conflict Risk Assessment Guide (NSW DPI, 2011a);
- Infrastructure Proposals on Rural Land (NSW DPI, 2013b);
- Australian Soil and Land Survey Handbook (the 'Yellow Book') (CSIRO, 2009);
- Guidelines for Surveying Soil and Land Resources (CSIRO, 2008); and
- Biosecurity Risk Management in Land Use Planning and Development (NSW DPI, 2020).

As per the determination process detailed in **Appendix A** of the Solar Guideline, the Project required a 'Level 2 – Reduced' Agricultural Impact Assessment.

Potential land contamination is addressed in **Section 6.9**

### 6.8.1 EXISTING ENVIRONMENT

Agriculture is a key industry within the region, accounting for 88% of the land use within the Tamworth Regional LGA, with an estimated gross value of >\$300 million (NSW DPIRD, 2024). The Project Area is currently utilised for the grazing of livestock (primarily cattle and horses), with areas of small-scale cropping also present. General agricultural improvements are present within the Project Area, including cattle yards/sheds, access tracks, stock fencing and gates, and dams. Similar agricultural development and infrastructure is observed on surrounding land, with evidence that the area has been historically cleared and grazed. No sensitive agricultural activities such as intensive plant or livestock agriculture are being undertaken within the Study Area or its immediate surrounds.

A review of online resources was undertaken to identify the existing characteristics of the Project Area, including the Land and Soil Capability (LSC), Australian Soil Classification (ASC) soil type, and potential presences of Biophysical Strategic Agricultural Land (BSAL). These are summarised in **Table 6-20**.

**TABLE 6-19 SUMMARY OF EXISTING LAND/SOIL CHARACTERISTICS**

Characteristic	Summary
ASC Soil Type	<ul style="list-style-type: none"> <li>• Chromosols (dominant); and</li> <li>• Dermosols.</li> </ul>
LSC Classes	<ul style="list-style-type: none"> <li>• LSC Class 4: moderate capability land;</li> <li>• LSC Class 5: moderate-low capability land; and</li> <li>• LSC Class 6: low capability land.</li> </ul>

Characteristic	Summary
Soil Landscapes	<ul style="list-style-type: none"> <li>• Fullwoods Hill;</li> <li>• Round Hill;</li> <li>• Parnell;</li> <li>• Wangarang;</li> <li>• Duri; and</li> <li>• Moan.</li> </ul>
BSAL	<ul style="list-style-type: none"> <li>• Project Area does not contain any BSAL.</li> </ul>
Soil Acidity	<ul style="list-style-type: none"> <li>• Surface soil acidity ranges between a pH of 5 and 6.0.</li> </ul>
Soil Fertility	<ul style="list-style-type: none"> <li>• Inherent soil fertility mapped as Moderate (class 3)</li> </ul>
Soil Erodibility	<ul style="list-style-type: none"> <li>• Not currently mapped for Soil Regolith Stability; and</li> <li>• modelled soil erosion (bare) of &lt;20 -500 t/ha/year.</li> </ul>
Acid Sulfate Soils	<ul style="list-style-type: none"> <li>• Project Area does not contain acid sulphate soils.</li> </ul>
Great Soil Groups	<ul style="list-style-type: none"> <li>• Non-calcic Brown soils;</li> <li>• Red-brown Earths/Euchrozems; and</li> <li>• Chocolate soils</li> </ul>
Hydrologic Group	<ul style="list-style-type: none"> <li>• Class 3 - slow infiltration rates.</li> </ul>

#### 6.8.1.1 SOIL VERIFICATION SURVEY

A soil verification survey was undertaken on 3 December 2024 to verify land conditions and subsequently inform the recommended management and mitigation measures. Soil sampling was undertaken at 16 sites across the Project Area, with each sample classified in accordance with the ASC Guide (Isabell, 2021) and then submitted to GSG Laboratories<sup>12</sup> for a suite of analyses.

The results of the site verification survey are summarised in **Table 6-21**. Site verified LSC and ASC mapping are shown in **Figure 6-11** and **Figure 6-12**.

**TABLE 6-20 SUMMARY OF SITE VERIFICATION SURVEY**

Characteristic	Summary
ASC Soil Type	<ul style="list-style-type: none"> <li>• Vertosols, covering approximately 186.3 ha;</li> <li>• Chromosols, covering approximately 176.2 ha; and</li> <li>• Dermosols, covering approximately 6.5 ha.</li> </ul>
LSC Classes	<ul style="list-style-type: none"> <li>• LSC Class 4: moderate capability land, covering 263 ha;</li> <li>• LSC Class 5: moderate-low capability land, covering 19 ha; and</li> <li>• LSC Class 6: low capability land, covering 87 ha.</li> </ul>
Soil Acidity	<ul style="list-style-type: none"> <li>• The Project Area is predominantly covered by slightly acidic soils; and</li> <li>• Alkalinity levels are not anticipated to present a significant constraint to the agricultural productivity or to the construction materials.</li> </ul>
Soil Salinity	<ul style="list-style-type: none"> <li>• Majority of soil across the Project Area is non-saline, with risk of salinity considered negligible.</li> </ul>
Soil Erodibility	<ul style="list-style-type: none"> <li>• Soils across the Project Area are non-sodic and are mainly well aggregated with some moderate dispersive soil present.</li> </ul>
Soil Fertility	<ul style="list-style-type: none"> <li>• The Cation Exchange Capacity indicates the Project Area contains fertile soils.</li> </ul>

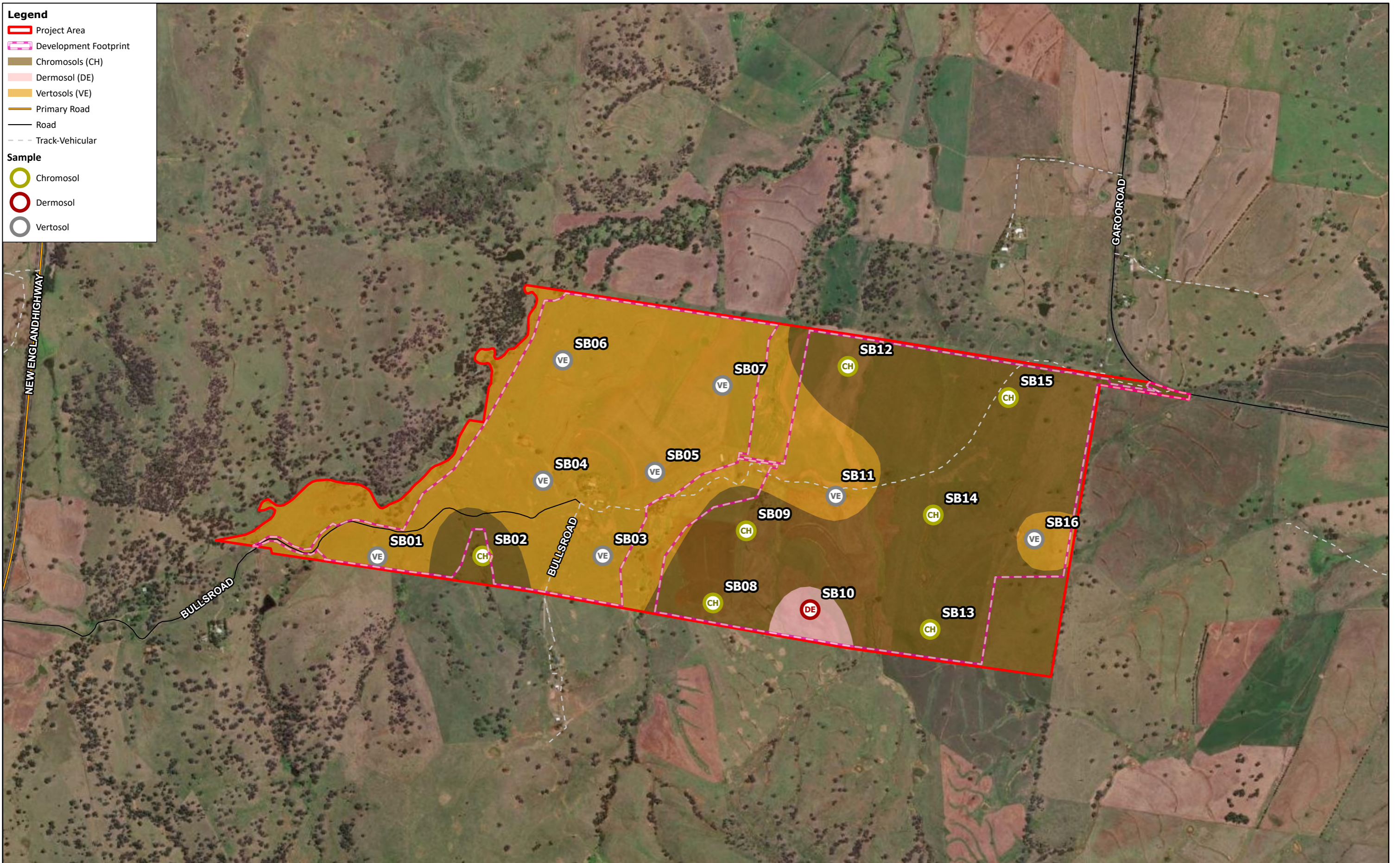
<sup>12</sup> GSG Laboratories is a National Association of Testing Authorities Accredited laboratory,

**Legend**

- Project Area
- Development Footprint
- Chromosols (CH)
- Dermosol (DE)
- Vertosols (VE)
- Primary Road
- Road
- Track-Vehicular

**Sample**

- Chromosol
- Dermosol
- Vertosol



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery


Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
 Drawing Size: A3

0 400m

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**F6-11 Australian Soil Classification – Field Verified Mapping**

**Garoo Solar Farm and BESS Environmental Impact Assessment**



**Legend**

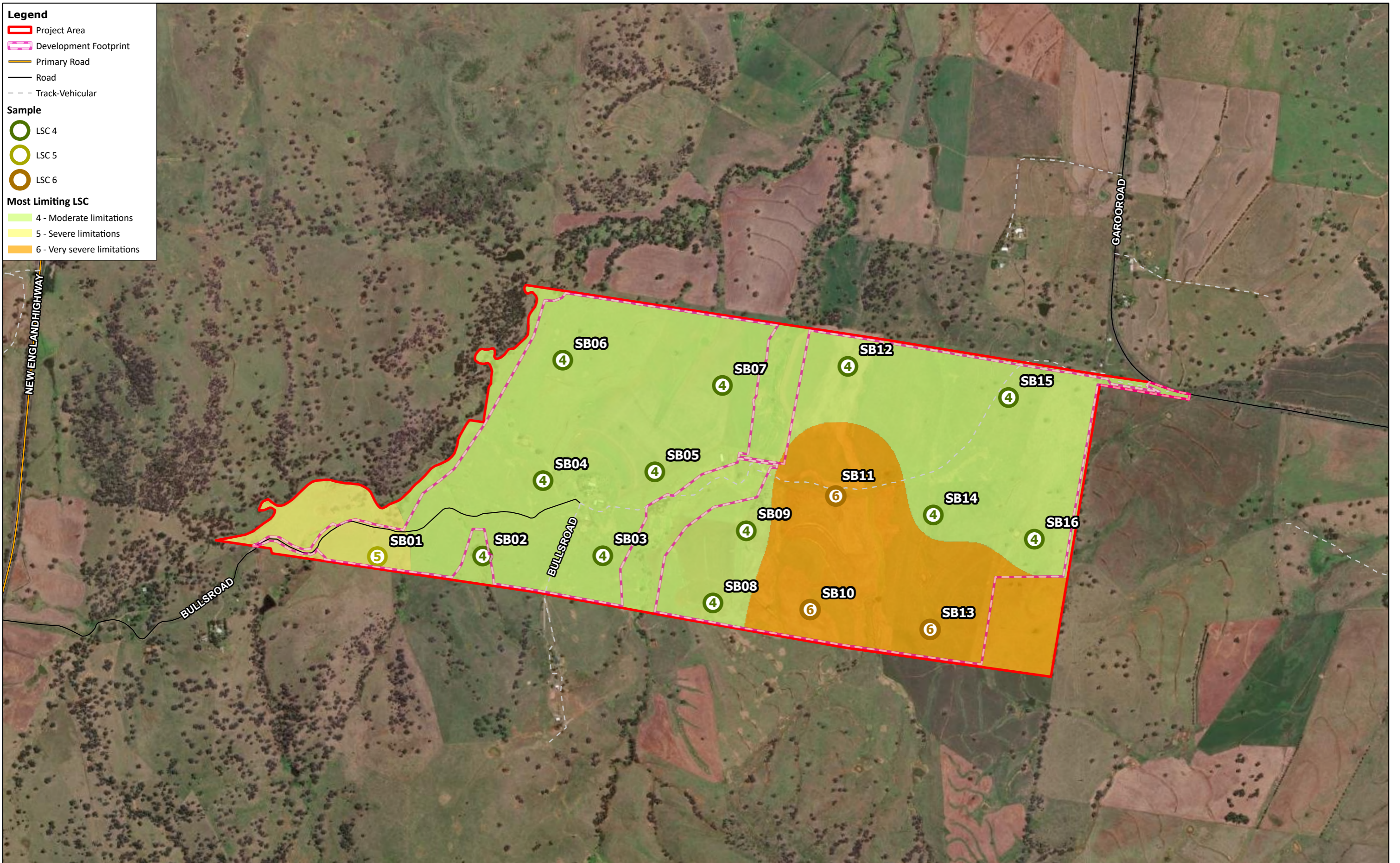
- Project Area
- Development Footprint
- Primary Road
- Road
- Track-Vehicular

**Sample**

- LSC 4
- LSC 5
- LSC 6

**Most Limiting LSC**

- 4 - Moderate limitations
- 5 - Severe limitations
- 6 - Very severe limitations



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCD/DTDB  
 Imagery: ESRI World Imagery


Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: IY/NB  
 Drawing Size: A3

0 400m

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**F6-12 Australian Soil Classification – Field Verified Mapping**

**Garoo Solar Farm and BESS Environmental Impact Assessment**



## 6.8.2 IMPACT ASSESSMENT

### 6.8.2.1 AGRICULTURAL LAND USE AND PRODUCTIVITY

Project infrastructure such as the BESS, switchyard, substation and associated facilities will not be suitable for agricultural use during Project operation and therefore will result in the temporary loss of agricultural land for the life of the Project. However, agrisolar<sup>13</sup> practices will limit the loss of agricultural land within the Project Area.

It is anticipated that the Project would have no material impact on the agricultural activity that immediately surrounds the Project, or local providers operating in the agricultural sector. Additionally, due to the scale of the Project, it is anticipated that the impact on local, regional and state agricultural productivity will be negligible.

### 6.8.2.2 SOILS

Construction activities and land clearing could potentially result in temporary soil disturbance, impacting soil structure and nutrient availability across the Project Area. However, soil displacement is anticipated to be minimal, with native vegetation maintained (where practicable) and progressive rehabilitation implemented throughout the construction phase.

Overall, the impacts to the soils are estimated to be minimal and limited to the construction phase. Following operations, it is anticipated that the soils can be returned to their current state.

### 6.8.2.3 WATER RESOURCES

Surface water resources within the Project Area have predominantly been excluded from the Development Footprint. Sedimentation and/or pollution from run-off is a potential risk during construction. Given erosion and sediment control measures are to be implemented, any impact to surface water resources are anticipated to be minor and negligible.

The Project is not anticipated to have a significant impact on groundwater resources.

Any potential impacts to water resources and associated mitigation measures are addressed further in **Section 6.9** and **Appendix O**.

### 6.8.2.4 EROSION AND SEDIMENTATION

Dispersion risk across the Project Area is low, with no significant erosion and sedimentation issues identified. However, the removal of ground cover may lead to higher levels of erosion hazard, which will be addressed through erosion and sediment control measures.

Further details regarding erosion and sedimentation, including mitigation measures, are provided in **Section 6.9** and **Appendix O**.

### 6.8.2.5 BIOSECURITY, PESTS AND WEEDS

Construction activities, intensified vehicle movements and imported materials within the Project Area will increase the risk of pest species (fauna and weeds) being introduced to the Project Area and surrounding region. If introduced, they could have detrimental impacts on local and regional agricultural industries, and impact efficacy of site rehabilitation.

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<sup>13</sup> Agrisolar refers to the co-development of land for use as both a solar facility and agriculture

Appropriate measures outlined in **Section 6.8.3** will be implemented to protect the economy, environment and community from pests, diseases and weeds. Therefore, the Project will not have any potential impact on the biosecurity of agricultural resources and enterprises within the region.

#### 6.8.2.6 AIR QUALITY AND DUST

Air quality impacts arising from the Project are likely to comprise vehicle and dust emissions. The impacts on agricultural land and resources are considered minor.

Air quality impacts and associated mitigation measures are addressed further in **Section 6.15**.

#### 6.8.2.7 NOISE

Livestock may be disturbed by noise associated with the Project. The NIA (refer **Appendix J**) assessed potential noise impacts and determined that noise is anticipated to be relatively low and limited to the construction phase. It is unlikely this will result in livestock being continuously exposed to adverse noise and as such noise impacts on agricultural resources are considered to be minor.

Noise impacts and associated mitigation measures are addressed further in **Section 6.5** and **Appendix J**.

#### 6.8.2.8 TRAFFIC

Agricultural enterprises may be affected by increased traffic, leading to higher noise and dust levels (refer **Section 6.8.2.7** and **Section 6.8.2.6**). Additionally, the cumulative use of road transport for solar farm operations could reduce transport availability for agriculture.

The TIA (**Appendix P**) concluded that the existing road network has sufficient capacity to accommodate construction traffic, once mitigation measures have been applied. Therefore, the Project's traffic impacts are unlikely to significantly affect agricultural enterprises in the area.

#### 6.8.2.9 LAND USE CONFLICT RISK ASSESSMENT

A Land Use Conflict Risk Assessment (LUCRA) is required as part of a 'Level 2 – Reduced' Agricultural Impact Assessment. A LUCRA has been undertaken to identify and assess potential land use conflicts that may arise due to the Project.

The LUCRA follows the approach in the NSW DPI Land Use Conflict Risk Assessment Guide (NSW DPI, 2011a). Each identified potential conflict is given a risk ranking according to the probability of occurrence and consequence of the impact, which is then re-evaluated following the application of risk reduction management strategies.

A total of 22 risk items were considered as part of the LUCRA process. The LUCRA concluded that the implementation of mitigation measures outlined in this EIS, the LAIA (**Appendix M**) and associated technical assessments would result in no high-risk potential conflicts. However, the following potential conflicts remain a moderate risk:

- Visual Amenity;
- Increased Bushfire Risk;
- Decreased Biodiversity Value;
- Biosecurity; and
- Property devaluation and increased living cost.

Mitigation measures have been developed to address these potential conflict topics (refer **Section 6.8.3** and **Appendix B**), and the Applicant will continue to engage with stakeholders to identify and address concerns if they arise.

The LUCRA is appended to the LAIA (**Appendix M**), which includes detailed methodology, risk reduction strategies, performance targets and monitoring requirements.

### 6.8.3 MITIGATION AND MANAGEMENT

A CEMP and OEMP will be developed to ensure that the impacts to land and agriculture are adequately mitigated. These management plans will include relevant sub-plans, including (but not limited to):

- Noise and Vibration Management Plan;
- Soil and Water Management Plan;
- Erosion and Sediment Control Plan;
- Traffic Management Plan;
- Waste Management Plan;
- Vegetation Management Plan; and
- Biodiversity Management Plan.

**Table 6-22** summarises the mitigation and management measures to be implemented for the Project to ensure negligible impact on agricultural land, resources and enterprises.

Additional mitigation and management measures relating to noise, air quality and traffic have been addressed in their respective sections, as follows:

- Noise: **Section 6.5** and **Appendix J**;
- Air Quality: **Section 6.15**; and
- Traffic: **Section 6.11** and **Appendix P**.

**TABLE 6-21 LAND AND AGRICULTURE MITIGATION AND MANAGEMENT MEASURES**

ID	Mitigation and Management Measures	Phase
LA1	Implement sheep grazing to integrate solar infrastructure with agricultural activities (i.e. agrisolar)	Operation
LA2	The Applicant will develop an ESCP that addresses specific erosion risks, including <ul style="list-style-type: none"> <li>• Progressive rehabilitation of the Project Area;</li> <li>• Seeding of bare earth (where required); and</li> <li>• Weed management to increase native vegetation cover.</li> </ul>	All phases.
LA3	Biosecurity protocols to be implemented, including (but not limited to): <ul style="list-style-type: none"> <li>• Inspection and washdown of all vehicles and plant entering the Project Area;</li> <li>• Limited vehicle access to the established internal road network;</li> <li>• The establishment of dedicated biosecurity wash down bays (as required);</li> <li>• Monitoring of the Project Area for pests/weeds;</li> <li>• Reporting of any biosecurity incidents to the relevant authorities;</li> <li>• Weed management practices, such as spraying; and</li> <li>• Pest management practices, as required.</li> </ul>	All phases.

ID	Mitigation and Management Measures	Phase
	Biosecurity management to be in accordance with the <i>NSW Biosecurity Act 2015</i> and NSW Biosecurity and Food Safety Strategy 2022-2030.	
LA3	Landowners will be consulted regarding: <ul style="list-style-type: none"> <li>• Project works and timing, particularly where restrictions on vehicular or stock movements would be necessary;</li> <li>• Infrastructure and access arrangements;</li> <li>• Land rehabilitation;</li> <li>• Management, damage or repair of agricultural infrastructure; and</li> <li>• Biosecurity requirements and management.</li> </ul>	All phases.
LA4	The Applicant will develop a Decommissioning and Rehabilitation Strategy that returns the land to the condition that existed prior to the Project, or as agreed with the landowners. This will include: <ul style="list-style-type: none"> <li>• Removal of underground infrastructure (such as cables and footings) where practical;</li> <li>• Removal or management of any contamination or waste in consultation with the landowners and according to regulations; and</li> <li>• Control and/or removal of any biosecurity issues during the decommissioning process, as possible.</li> </ul>	Decommissioning.
LA5	The efficacy of the management measures will be monitored throughout the life of the Project.	All phases.

## 6.9 CONTAMINATED LAND

A Preliminary Site Investigation (PSI) has been prepared to assess the potential sources for contamination and assess potential human health and environmental health risks associated with the Project Area and proposed development. The PSI also recommends mitigation and risk management measures to address identified potential impacts. The PSI is provided in **Appendix N**.

The PSI addresses the relevant requirements set out by the SEARs (refer **Appendix A**), and prepared in accordance with following:

- Resilience and Hazards SEPP;
- National Environmental Protection (Assessment of Site Contamination) Measure (NEPC, 1999); and
- Consultants reporting on contaminated land, Contaminated Land Guidelines (EPA, 2020).

The PSI included a desktop review, site inspection and interview with the landowner. This enabled the preliminary Conceptual Site Model (CSM) to be developed, which identifies potential Source-Pathway-Receptor (SPR) linkages, and identification of data gaps that may warrant further investigation.

### 6.9.1 EXISTING ENVIRONMENT

The existing environmental setting of the Project Area and surrounding land has been detailed in and **Section 2.5** and in the PSI (refer **Appendix N**). **Table 6-22** summarises details relevant to the PSI.

TABLE 6-22 ENVIRONMENTAL SETTING

Site Characteristic	Summary
Land Use	<ul style="list-style-type: none"> <li>• Historic and current land use of the Project Area and surrounding land is primarily agricultural;</li> <li>• Predominantly grassed paddocks and accompanying access tracks;</li> <li>• Dwelling and other built infrastructure typical of agricultural land (i.e. storage sheds, stock feed areas etc);</li> <li>• Future land use is the proposed solar farm and BESS; and</li> <li>• No sensitive land use within 500 m (excluding agricultural residences).</li> </ul>
Topography	<ul style="list-style-type: none"> <li>• Generally slopes from south to north; and</li> <li>• Elevation ranges from approximately 600 – 744 m AHD.</li> </ul>
Hydrology	<ul style="list-style-type: none"> <li>• Surface water receptors, including Tamarang Creek, Sugarloaf Creek and farm dams;</li> <li>• 14 registered groundwater bores within or near (500 m radius) the Project Area; and</li> <li>• Small areas of potential GDEs.</li> </ul>
Geology and soils	<ul style="list-style-type: none"> <li>• Regionally mapped as Chromosol soil;</li> <li>• Tangaratta formation of Tournaisian age with a dominate siliciclastic sedimentary rock lithology; and</li> <li>• Extremely low probability of occurrence of Acid Sulfate soils</li> </ul>

#### 6.9.1.1 NOMINATED ENVIRONMENTAL VALUES

Nominated environmental values for land and water resources have been determined based on environmental setting, current zoning (RU1) and future land use. The nominated environmental values associated with the Project Area include:

- Agricultural / residential (Land);
- Commercial / industrial (Land);
- Local ecosystems (Water resources);
- Recreation and aesthetics (Water resources); and
- Household and non-potable groundwater users (Water resources).

#### 6.9.1.2 SITE HISTORY

Investigations undertaken for the PSI determined that the Project Area has definitively been used as a rural agricultural property since 1965, but this land use likely extends back approximately 100 years.

Detailed overview of historical imagery, regulatory records, and public register reviews are detailed in the PSI (refer **Appendix N**).

#### 6.9.1.3 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

A site inspection was conducted on 26 June 2025 to ground truth desktop data, assess existing conditions and features, and to inform the potential need for future sampling. The assessment team from ERM was accompanied by the former landowner, who provided detailed information on the Project Area and its history.

Five areas of potential environmental concern were identified, which are detailed below and presented in **Figure 6-13**:

- A former dip site;
- Current and former residence and surrounding infrastructure;
- An underground cattle feed storage and processing area;
- A feed shed area; and
- A former sheep shearing shed and associated shearer's quarters.

#### 6.9.1.4 DANGEROUS GOODS

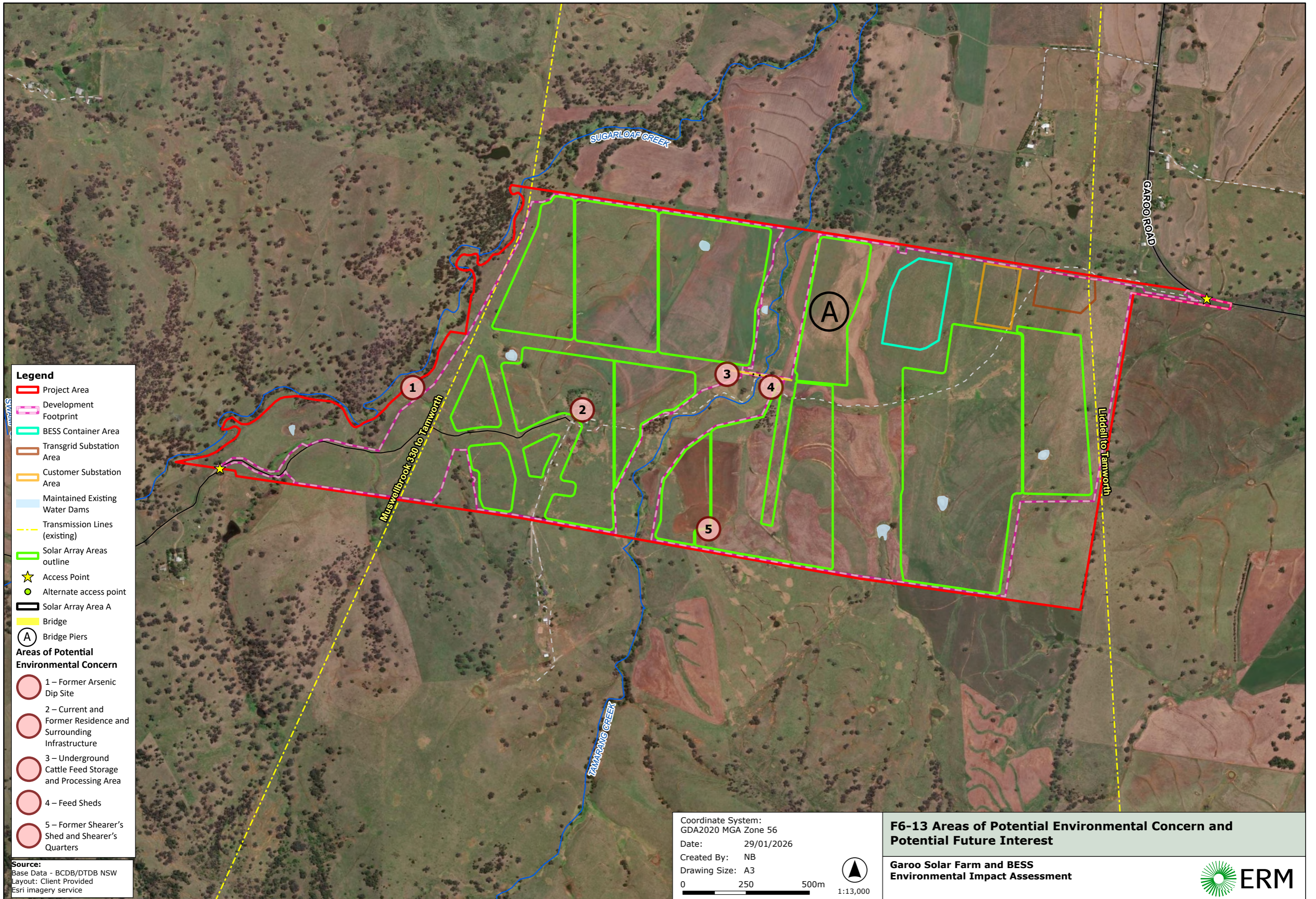
The former landowner has not kept a dangerous goods record or manifest, and therefore no historical dangerous goods records search was performed as part of the PSI. However, it was identified that dangerous goods known to be used are pesticides, herbicides and arsenic containing compounds used at the former dip site. These have been detailed in the PSI (refer **Appendix N**).

#### 6.9.1.5 AREAS OF POTENTIAL FUTURE INTEREST

Five areas of potential future interest have been identified:

- Proposed Transgrid Substation;
- Proposed Customer Substation;
- Proposed BESS;
- Solar Array Mounting Structure A (refer **Figure 6-13**); and
- Garoo Road connection.

These were targeted for observation during the site inspection.



- Legend**
- ▬ Project Area
  - ▬ Development Footprint
  - ▬ BESS Container Area
  - ▬ Transgrid Substation Area
  - ▬ Customer Substation Area
  - ▬ Maintained Existing Water Dams
  - ▬ Transmission Lines (existing)
  - ▬ Solar Array Areas outline
  - ★ Access Point
  - Alternate access point
  - A Solar Array Area A
  - ▬ Bridge
  - A Bridge Piers
- Areas of Potential Environmental Concern**
- 1 1 – Former Arsenic Dip Site
  - 2 2 – Current and Former Residence and Surrounding Infrastructure
  - 3 3 – Underground Cattle Feed Storage and Processing Area
  - 4 4 – Feed Sheds
  - 5 5 – Former Shearer’s Shed and Shearer’s Quarters

**Source:**  
 Base Data - BCDB/DTDB NSW  
 Layout: Client Provided  
 Esri imagery service

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3

0 250 500m 1:13,000

**F6-13 Areas of Potential Environmental Concern and Potential Future Interest**

**Garoo Solar Farm and BESS Environmental Impact Assessment**



## 6.9.2 IMPACT ASSESSMENT

### 6.9.2.1 PRELIMINARY CONCEPTUAL SITE MODEL

An understanding of potential exposure scenarios is necessary to evaluate the suitability of the Project Area for commercial / industrial land-use. A preliminary CSM has been developed to determine potential SPR linkages, considering sources of contamination and Constituents of Potential Concern, exposure and migration pathways, and receptor and exposure pathways.

Condensed findings of the preliminary CSM are provided in **Table 6-23**, with the detailed preliminary CSM presented in the PSI (refer **Appendix N**). The potential pathways and receptors for all sources include:

- Pathways:
  - Migration - surface water and transport of contaminants to underlying groundwater; and
  - Exposure – direct contact, ingestion, inhalation and bioaccumulation.
- Receptors:
  - Current residents;
  - Current and future workers;
  - Current and future users of groundwater and / or surface water; and
  - Ecological receptors (terrestrial and aquatic).

TABLE 6-23 CONDENSED PRELIMINARY CONCEPTUAL SITE MODEL

Potential Source	Constituents of Potential Concern	PSI findings	Potential SPR Linkages
General agricultural land use practices.	<ul style="list-style-type: none"> <li>• Heavy metals;</li> <li>• Organochlorine Pesticide;</li> <li>• Organophosphate Pesticide;</li> <li>• Phenoxyacetic acid herbicides;</li> <li>• Carboxylic acid herbicides;</li> <li>• Organic esters; and</li> <li>• Phenolic compounds.</li> </ul>	History of agricultural practice, including use of pesticide and herbicide.	Unlikely.
Former dip site.	<ul style="list-style-type: none"> <li>• Organochlorine Pesticide; and</li> <li>• Heavy metals.</li> </ul>	High potential for arsenic impacted soils, and migration to surface water and groundwater.	Yes - unlikely to be influenced by or impact the Project, however further investigation required.
Former power station	<ul style="list-style-type: none"> <li>• Petroleum hydrocarbons;</li> <li>• Polycyclic Aromatic Hydrocarbons;</li> <li>• Heavy metals;</li> <li>• Polychlorinated Biphenyls; and</li> <li>• Asbestos.</li> </ul>	Potential contamination from historic operation of the power station, degradation of building materials and/or demolition of the former structures.	Yes - further investigation required.
Former blacksmiths workshop	<ul style="list-style-type: none"> <li>• Petroleum hydrocarbons;</li> <li>• Polycyclic Aromatic Hydrocarbons;</li> <li>• Heavy metals;</li> <li>• Solvents and degreasers; and</li> <li>• Asbestos.</li> </ul>	Contaminated soils due to absence of bunding or seals at former blacksmiths workshop.	Yes - further investigation required.
Former residence, sheep shearing station, and associated quarters.	<ul style="list-style-type: none"> <li>• Lead; and</li> <li>• Asbestos.</li> </ul>	Contamination resulting from degradation and/or demolition of former structures, which were buried.	Unlikely.
Fuel drums and storage tanks.	<ul style="list-style-type: none"> <li>• Petroleum hydrocarbons; and</li> <li>• Heavy metals.</li> </ul>	Potential for historical spills and leakage from this infrastructure.	Yes - further investigation required.
Domestic septic tank	<ul style="list-style-type: none"> <li>• Pathogens; and</li> <li>• Nutrients</li> </ul>	The septic system is understood to be fully operational and not located in a highly sensitive area.	Unlikely - validation of the septic tank removal shall be completed as part of the Project development.

### 6.9.2.2 QUALITATIVE RISK EVALUATION

The risk evaluation process adopted for the Project applies a risk rating to each potential contamination source based on the likelihood of an event happening and the consequence (i.e. maximum credible outcome of an event affecting an asset, value or use) based on extent, severity and duration of impact. The approach is consistent with AS/NZS ISO 31000:2018 Risk Management – Guidelines, with the full methodology detailed in in the PSI (refer **Appendix N**)

Noting the locations of the potential sources of contamination, only the proposed solar array areas are subject to the risk evaluation. No potential risk items have been identified in relation to the proposed customer substation, Transgrid substation and BESS based on findings of the PSI.

A summary of the risk evaluation is provided in **Table 6-24**.

**TABLE 6-24 RISK EVALUATION – CONTAMINATION**

Source	Likelihood	Consequence	Risk Rating
Agricultural land use	Has occurred	Minor	Medium
Former dip site	Has occurred	Severe	Very high
Former power station	Has occurred	Moderate	High
Former blacksmiths	Has occurred	Moderate	High
Former residence, sheep shearing station and quarters	Has occurred	Minor	Low
Fuel drums and storage tanks	Possible	Moderate	High
Domestic storage tanks	Has occurred	Minor	Medium

### 6.9.2.3 DATA GAPS

Data gaps remain in relation to the nature and extent of potential contamination related to the following potential sources:

- The dip site;
- The former power station;
- The former blacksmiths workshop; and
- The underground storage tank.

However, subject to mitigation and management measures described in the following section, these potential sources and the associated data gaps are not considered to limit the suitability of the Site for development of the Project.

### 6.9.3 MITIGATION AND MANAGEMENT

Management and mitigation measures to manage identified potential contamination impacts are outlined in **Table 6-25**.

TABLE 6-25 CONTAMINATION MITIGATION AND MANAGEMENT MEASURES

ID	Mitigation Measures	Phase
CM1	<p>A Detailed Site Investigation be completed in accordance with a Sampling and Analysis Quality Plan accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) and other relevant guidelines.</p> <p>If remediation / management of contaminated land is required, a Remediation Action Plan and / or Site Management Plan will be developed and implemented in accordance with relevant guidelines. If required, remediation will be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land.</p>	Pre-construction
CM2	<p>Measures to minimise and manage contamination risks will be detailed in a Soil, Sediment and Contamination Management Sub-plan (or equivalent) as part of the CEMP. This should include:</p> <ul style="list-style-type: none"> <li>• Establishing a risk-based contamination baseline for areas likely to be disturbed during construction (including fill, soil, surface water, sediment and groundwater as relevant), taking into account the outcomes of the DSI as outlined above;</li> <li>• Measures to manage, handle, treat and/ or store contaminated materials;</li> <li>• Pre-construction and pre-disturbance investigations to identify and confirm the presence/ absence of contaminated materials and areas of fill;</li> <li>• Materials testing to confirm reuse requirements and/ or requirements for offsite treatment/ disposal; and</li> <li>• Removal and validation requirements for the underground storage tank and the septic tank in accordance with the applicable State and National guidance.</li> </ul>	Construction
CM3	<p>An unexpected finds protocol should be developed prior to construction of the project. The unexpected finds protocol shall be implemented in the event that unusual physical (e.g. staining, fill material, suspected ACM) or sensory (visual or olfactory) characteristics of the soil are encountered. The unexpected finds protocol should include requirements for cessation of works within the affected area until after appropriate assessment and management of the unexpected find is completed in accordance with applicable statutory guidelines.</p>	Construction

## 6.10 WATER RESOURCES

A Water Resources Impact Assessment (WRIA) has been prepared to assess the potential impacts of the Project to surface water and groundwater (Engeny, 2025a). The WRIA also details initiatives to avoid and minimise surface water impacts, and proposes additional mitigation and management measures to address potential residual impacts. The WRIA is presented in **Appendix O**.

The WRIA was conducted to satisfy the relevant requirements set out by the SEARs (refer **Appendix A**), and in consideration of the following policies, guidelines and legislation:

- NSW Aquifer Interference Policy;
- *Water Management Act 2000*;
- *Water Management (General) Regulation 2018*;
- Water Sharing Plans;
- Waterfront Land e-tool (NRAR, 2020);

- NSW Water Quality and River Flow Objectives;;
- Australian and New Zealand fresh and marine water quality guidelines (ANZG, 2018);
- Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004b), Volume 2A, 2C and 2D (DECC, 2008);
- Renewable Energy Planning Framework and Solar Guidelines (NSW DPFI, 2022a);
- Controlled Activities – Guidelines for Instream Works on Waterfront Land (NSW DPE, 2022b); and
- Why Do Fish Need to Cross the Roads? Fish Passage Requirements for Waterway Crossings (Witheridge & Fairfull, 2003).
- Policy and Guidelines for Fish Habitat Conservation and Management (NSW DPI, 2013a).

### 6.10.1 EXISTING ENVIRONMENT

The baseline conditions of the water resources within the Project Area and surrounding region are summarised in **Table 6-26**. Watercourses within the Project Area are presented in **Figure 2-3**. Further detail is provided in the WRIA (refer **Appendix O**).

Flooding is addressed separately in **Section 6.10.1.3**.

**TABLE 6-26 SUMMARY OF EXISTING ENVIRONMENT (WATER RESOURCES)**

Characteristic	Summary
Catchment	<ul style="list-style-type: none"> <li>• The Project is located in the Peel Valley of the Namoi Catchment;</li> <li>• Part of the broader Murray Darling Basin Catchment; and</li> <li>• Connectivity between the Namoi River and Project Area via the Peel River catchment.</li> </ul>
Climate	<ul style="list-style-type: none"> <li>• The Namoi Catchment is characterised by dry summers and cool winters;</li> <li>• Local area is generally dry, with limited water pooling around farm dams and waterways during the wet periods; and</li> <li>• Average monthly rainfall is generally exceeded by evaporation.</li> </ul>
Surface Water	<ul style="list-style-type: none"> <li>• Two key creeks, Tamarang Creek and Sugarloaf Creek, and their tributaries drain the Project Area;</li> <li>• Project Area includes two non-minor (i.e. Strahler order of three or greater) watercourses, with all remaining watercourses identified to be 'minor streams' (i.e. Strahler order of two or less) (refer <b>Figure 6-3</b>);</li> <li>• A total of 34 hydroline segments are mapped within the Project Area, the majority of which flow into or comprise the Sugarloaf Creek or Tamarang Creek; and</li> <li>• All mapped hydrolines are ephemeral.</li> </ul>
Waterfront Land <sup>14</sup>	<ul style="list-style-type: none"> <li>• 16 hydrolines assessed as having waterfront land.</li> </ul>
Groundwater	<ul style="list-style-type: none"> <li>• The Project Area contains six groundwater bores, primarily for water supply and stock and domestic use;</li> <li>• Groundwater flow expected to be north-westerly;</li> <li>• Project Area located in Peel Fractured Rock Groundwater Source, which is not considered highly connected to surface waters;</li> <li>• The Peel Alluvium Water Source and Goonoo Goonoo Creek Alluvium Management Zone are located near to the Project, with the latter showing high connectivity to surface waters; and</li> <li>• There are no existing groundwater licenses available within the Project Area.</li> </ul>

<sup>14</sup> Any river, lake or estuary, and the land within 40 m of the river, lake shore or estuary mean high-water mark. Waterfront land exists for any watercourse with a defined bed and bank and for any third order or above mapped hydroline.

Characteristic	Summary
Surface-Groundwater Interactions	<ul style="list-style-type: none"> <li>• Soils generally have low water infiltration potential and high-water retention; and</li> <li>• Potential interaction through waterways and waterbodies.</li> </ul>
Water Quality & Flow Regimes	<ul style="list-style-type: none"> <li>• A range of objectives, strategies and guidelines apply to the Namoi Catchment and associated surface watercourses, as detailed in the WRIA (refer <b>Appendix O</b>);</li> <li>• Typically natural, uncontrolled (i.e. not controlled by a dam), and ephemeral flow pattern;</li> <li>• Project Area and downstream watercourses are assumed to be 'slightly to moderately disturbed systems' due to the agricultural activities;</li> <li>• 'Moderate' (63/100) Water Quality Index at the closest monitoring site;</li> <li>• Peel River and Goonoo Goonoo Creek both exceed guideline values for phosphorus and turbidity;</li> <li>• Aquatic biota monitoring indicates 'poor' to 'moderate' conditions;</li> <li>• Tamarang Creek has a 'moderate' geomorphic condition, high recovery potential and is high priority for rehabilitation; and</li> <li>• The Namoi catchment and sub-catchment covering the project Area are classified as 'moderate'.</li> </ul>
Soils	<ul style="list-style-type: none"> <li>• Project Area mapped (ASC) as chromosol and dermosol, which generally have slow water infiltration and high water retention potential; and</li> <li>• Soils are discussed further in <b>Section 6.8</b>.</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>• The Project Area demonstrates zones of high potential terrestrial groundwater dependent ecosystems (GDEs) and low potential terrestrial GDEs.</li> </ul>

### 6.10.1.1 WATER RESOURCES AND SHARING PLANS

The Water Resource and Water Sharing Plans applicable to the Project area are summarised in **Table 6-27**.

**TABLE 6-27 APPLICABLE PLAN AREAS**

Area / Zone	Plan
<i>Water Resource Plans</i>	
Surface Water Resource Plan Area	Namoi (withdrawn May 2023)
Surface Water Sustainable Diversion Limit Area	Namoi
Groundwater Resource Plan Area	Murray-Darling Basin Fractured Rock (GW11)
Groundwater Sustainable Diversion Limit Area	New England Fold Belt MDB (GS37)
Water Quality Zone	Upland (B2) and Montane (C2)
<i>Water Sharing Plans</i>	
Surface Water Sharing Plan	Namoi and Peel Unregulated River Water Sources 2012
Surface Water Source	Goonoo Goonoo Creek Water Source
Groundwater Sharing Plan	Murray-Darling Basin Fractured Rock Groundwater Sources 2020
Groundwater source	Peel Fractured Rock groundwater Source

There are no current water access licences (WALs) associated with the Project Area. However, harvestable rights dams exist within the Project Area and support the existing land use activities (maximum capacity 29.52 ML).

There are five water supply works and use approvals applicable to the Project Area. These are all Basic Rights Approvals for extraction works groundwater bores.

#### 6.10.1.2 PROPOSED WATER BALANCE, DEMAND AND SUPPLY

Water demand will vary across the various stage of the Project construction and operational periods. A majority of the demand will be during construction, with post-construction demand anticipated to be negligible. Primarily consisting of occasional cleaning and potable demand.

The water demand during construction has been estimated based on workforce breakdown (refer **Section 3.5.2**), with detailed breakdowns appended to the WRIA. These estimates will be refined during detailed design:

- Maximum daily non-potable construction demand: 66.3 kL/day;
- Maximum daily potable construction demand (including Workforce Accommodation Camp): 62.5 kL/day; and
- Maximum operational demand: 0.5 kL/day (potable water for employees only)

The water demand during construction is summarised in **Table 6-28**.

**TABLE 6-28 ESTIMATED WATER REQUIREMENTS (CONSTRUCTION)**

Activity	Total Demand (ML)
Consumption (potable) – day work	5.8
Consumption (potable) – Workforce Accommodation Camp	19.5
Dust Suppression	6.6
Vehicle and Equipment Washdown	4.6
Road Construction / Compaction	14.3
Compound Hardstands	5.3
<b>Total Construction Demand</b>	<b>56.1</b>

#### Project Water Supply

The Applicant proposes to source water externally, purchasing water tanks that will imported to support the minimal construction demands. The water tanks may capture rainwater for site amenities, and rainfall will be the primary water source for cleaning of the solar panels. Recycling and reuse of water will be implemented where possible. Discussions with nearby Councils indicate the that maximum water demand (approximately 130 kL/day) can be met by existing council facilities:

- Tamworth Regional Council can provide 50 kL/day, sourced through registered water carters at one of Council's Bulk Water Filling Stations; and
- Liverpool Plains Shire Council can provide up to 80 kL/day through available supplies from the Quirindi Water Supply via the existing Bulk Fill facility.

The use of existing water sources within the Project Area is not anticipated, and the project does not propose to extract groundwater to support construction or operation activities.

The WRIA outlines additional water sources that could be used to fulfill demands, should additional requirements be identified during detailed design.

### **Wastewater Management**

During construction, wastewater from the site office and temporary construction facilities will be collected and managed through an on-site treatment system. This will be treated and re-purposed for non-potable demands. Waste solids will be handled by a licensed contractor and disposed at an appropriately licensed facility.

Specifics of the wastewater management system will be determined during detailed design, considering best practice guidelines and standards, and will be removed once construction is completed.

#### **6.10.1.3 FLOODING**

A flood model was developed to model flood behaviour in and around the Project Area. The methodology, key assumptions and development parameters are detailed in the WRIA (refer **Appendix O**).

#### **Existing Flood Behaviour**

An existing flood model was developed to assess the baseline flooding behaviour (i.e. with the Project Area undeveloped) for the 5% Annual Exceedance Probability (AEP), 1% AEP, 1% AEP Climate Change Sensitivity, 0.2% AEP, and Probable Maximum Flood (PMF) events. This indicated that flooding through the Project Area is typically confined to the local creek systems and drainage channels, including Tamarang Creek and Sugarloaf Creek, with broader flow paths flowing through the western portion of the Project Area. Flood hazard categories across the Project Area is mainly low (H1) to moderate (H3), with higher hazards in defined watercourses and overland flow paths.

A climate change assessment was conducted, which modelled two scenarios. Generally, little difference in flood extent across the Project Area was observed.

Specific detail and mapping regarding flood depths, flow velocities hazard classifications, flood planning area, and hydraulic categorisation are detailed in the WRIA (refer **Appendix O**).

#### **Developed Flood Behaviour**

A developed-case (i.e., with the Project area developed) flood model was prepared to assess how, if at all, the 5%, 1% AEP and PMF events may change due to the Project. The developed-case flood modelling indicates that Project infrastructure may impede flows, change flow routes and modify runoff rates may result in increased flood depths, both within and outside the Project Area. Typically, velocities remain below 1 m/s and negligible changes in flood hazards are reported across the Project Area, with no observable external impacts.

Increased flooding is expected around the eastern abutment of the proposed bridge, particularly during PMF events, indicating these areas would be unsafe for people and vehicles in the PMF event. However, it is noted that much of this area is already classified as a high (H6) category under baseline conditions. Negligible changes in flood hazards are reported through the Project Area.

Further detail and mapping of the developed-case flood modelling is provided in the WRIA (refer **Appendix O**).

## 6.10.2 IMPACT ASSESSMENT

### 6.10.2.1 FLOW REGIMES

Construction and operation of Project infrastructure may result in minor disturbance to overland and out-of-bank flow paths. To mitigate these impacts, erosion and sediment controls will be implemented to minimise scouring. The Project has been designed to avoid significant modification or realignment of natural watercourses, with channel geometry and natural drainage patterns maintained where practicable, and new watercourse crossings limited.

The proposed bridge over Tamarang Creek will be designed to minimise disturbance and preserve natural flow conveyance. Additionally, existing farm dams will be retained, ensuring no induced changes to local flow behaviour.

Consequently, the Project is not expected to impact stream ordering or broader flow path regimes.

### 6.10.2.2 WATERFRONT LAND

Infrastructure located in waterfront land is typically associated with access tracks. Where access tracks are required to cross watercourses with defined waterfront land, they will be designed, constructed and maintained to maintain flows and ensure negligible impacts the full bank flow.

Flood modelling indicates that if the bridge crossing at Tamarang Creek is designed with minimal in-channel infrastructure, impacts to flows through Tamarang Creek will be negligible in the 5% AEP and 1% AEP events. Design optimisation is recommended to minimise impacts during the PMF.

Some solar arrays are located within waterfront land associated with man-made farm dams, however no impact to bank full water level is anticipated.

### 6.10.2.3 FLOODING

The Project layout has been developed to minimise interaction with the baseline 5% AEP and 1% AEP flood extents, with greater impacts associated with the PMF.

A summary of impacts key infrastructure may have on flooding is provided in **Table 6-29**.

**TABLE 6-29 IMPACTS OF KEY INFRASTRUCTURE ON FLOODING**

Project Infrastructure	Summary
Solar Arrays	<ul style="list-style-type: none"> <li>Negligible impact.</li> </ul>
BESS	<ul style="list-style-type: none"> <li>Minor increases in inundation (&lt;0.1m).</li> </ul>
Customer Substation	<ul style="list-style-type: none"> <li>Diverts flows, resulting in increased flood and ponding around the substation; and</li> <li>Increased flood velocities, both within and outside the Project Area.</li> </ul>
Transgrid Substation	<ul style="list-style-type: none"> <li>Minor downstream impacts to flood depth only.</li> </ul>
Parking and Laydown	<ul style="list-style-type: none"> <li>No/negligible impact.</li> </ul>

Project Infrastructure	Summary
Access Roads	<ul style="list-style-type: none"> <li>Negligible impact to flood depth; and</li> <li>Minor increase to flood velocity.</li> </ul>
Workers Accommodation Camp	<ul style="list-style-type: none"> <li>Mostly outside 5% AEP and 1% AEP flood extents, with minimal flood depths; and</li> <li>As the camp is a temporary feature, it was not assessed as part of the developed case modelling.</li> </ul>

Impacts to flood depths and velocities within Tamarang Creek are minor in the 5% AEP and 1% AEP developed scenarios, with no significant changes to flood extent observed. However, more significant impacts were observed during PMF events, due to the bridge crossing causing localised blockages of flows. This results in prolonged ponding and increased flood depths both upstream and downstream of the bridge. These impacts are expected to be mitigated during detailed design to ensure the floodplain is not obstructed and flow behaviour is maintained. Flows in Tamarang Creek downstream of the Project Area are not anticipated to change significantly.

Detailed modelling outputs are provided in the WRIA (refer **Appendix O**).

#### 6.10.2.4 WATER QUALITY

Several activities associated with the Project introduce key potential risks to the water quality of surrounding surface water, including:

- Ground disturbance;
- Earthworks;
- Vegetation clearance;
- Concrete works;
- Soil stockpiling;
- Vehicle movements; and
- Wastewater from site amenities.

The key potential risks associated with these activities are summarised in **Table 6-30**. These potential risks will be highest during construction and decommissioning, due to the greater amounts of ground disturbance, earthworks, vegetation management, vehicle movement, concrete works, and stockpiling. During operation, most risks are associated with vehicle movement, scouring and poor site stabilisation.

**TABLE 6-30 SURFACE WATER QUALITY IMPACTS**

Risk / Impact	Phase
Soil erosion and sedimentation of downstream watercourses and crops	All phases
Spill of hydrocarbons and other pollutants	All phases
Release of stockpiled materials or concrete byproducts into downstream watercourses	Construction
Discharge/spill of wastewater (treated or untreated) into downstream watercourses and crops	Construction and Operation
Release of tannins to downstream watercourses and crops (considered a low risk in context of the vegetation types).	Decommissioning

If unmanaged, these overall effects could cause detrimental impacts on the ecological balance of watercourses. However, the limited connectivity of the Project to adjacent watercourses, adoption of best practice approach, and implementation of mitigation (refer **Section 6.8.6**) would result in negligible impacts.

#### 6.10.2.5 EROSION AND SEDIMENTATION

Construction activities involving ground disturbance, earthworks and transporting and stockpiling soil introduce pathways for soils erosion and, in turn, potential movement of sedimentation into downstream water systems.

Impacts associated with the mobilisation of soil include:

- Degradation of the quality of downstream domestic and stock drinking water;
- Increased turbidity and reduced visual clarity of downstream watercourses, impacting aquatic ecosystem health;
- Increased sediment in downstream watercourses and waterbodies, impacting geomorphology and natural flow regimes; and
- Increased levels of dissolved metals and nutrients becoming mobilised and entering watercourses and waterbodies, which can impact aquatic life or water users if high concentrations of undesirable metals and nutrients reach water supplies.

Poor site stabilisation following construction may impact mobilisation of soil, resulting in continued impacts during operation and decommissioning.

These impacts can be managed effectively through specific ESCPs.

#### 6.10.2.6 GROUNDWATER

Potential impacts to groundwater quality may result from spill of wastewater, hydrocarbons or other pollutants used to support transportation and site activities. However, the risk of spills impacting groundwater quality is considered low due to the depth between the surface and groundwater table, and standard management practices to be implemented by the Applicant.

The Project is not anticipated to impact groundwater levels, flow direction, GDEs, or existing groundwater users. Although unlikely, if use of existing groundwater bores is deemed necessary to support construction, the Applicant will obtain applicable WALs, work approval and water use approvals prior to extraction.

#### 6.10.3 MITIGATION AND MANAGEMENT

Mitigation measures that will be implemented to minimise impacts to water resources are summarised in **Table 6-28**.

**TABLE 6-31 WATER RESOURCES MANAGEMENT AND MITIGATION**

ID	Mitigation Measures	Phase
WR1	<p>Consider the following mitigation measures in the Project detailed design:</p> <ul style="list-style-type: none"> <li>• Limit water crossing to existing access tracks where possible;</li> <li>• Arrange solar panel arrays such that stream disturbance and modifications (filling / diversions) are limited to minor watercourses; and</li> <li>• Where watercourse crossings are required, these will be designed, constructed and maintained to consider NSW DPE Guidelines for instream works on waterfront land and Guidelines for Riparian Corridors on Waterfront Land.</li> </ul>	Detailed design

ID	Mitigation Measures	Phase
WR2	<p>Consider the following mitigation measures in the Project detailed design stage to minimise impacts to flooding:</p> <ul style="list-style-type: none"> <li>• Minimise filling of BESS, substations sites and O&amp;M facilities;</li> <li>• Minimise extent of Project infrastructure within the 1% AEP flood extent;</li> <li>• Design to manage flood impacts and flow conveyance at watercourse crossings (if any); and</li> <li>• Underground transmission lines to minimise obstructions of flow paths.</li> </ul>	Detailed design
WR3	<p>Optimisation of the Project design during detailed design to ensure:</p> <ul style="list-style-type: none"> <li>• A minimum of 300 mm freeboard is maintained between the 1% AEP flood level and proposed solar arrays; and</li> <li>• Permanent ancillary infrastructure (substations / BESS) raised above the 1% AEP flood level.</li> </ul>	Detailed design
WR4	<p>Floodplain management planning to determine site management protocols during flood events that could impact construction or access areas, including:</p> <ul style="list-style-type: none"> <li>• Suitable early warning and communication protocols;</li> <li>• Triggers for closure, evacuation and recovery; and</li> <li>• Emergency response and support.</li> </ul>	Pre-construction
WR5	<p>Increased stormwater runoff during operations (due to clearing of vegetation and filling for infrastructure) will be managed through development of ESCP. The ESCP will consider:</p> <ul style="list-style-type: none"> <li>• Location of site infrastructure away from existing watercourses or areas subject to high levels of overland flow;</li> <li>• Diversion of upstream flows around site infrastructure as required, to minimise scouring and erosion; and</li> <li>• Inspection and monitoring regimes to maintain stormwater and erosion and sediment control structures.</li> </ul>	Construction
WR6	<p>Development of ESCP through all Project phases, in accordance with:</p> <ul style="list-style-type: none"> <li>• Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004b), 2A, 2C and 2D (DECC, 2008); and</li> <li>• Best Practice Erosion and Sediment Control (IECA, 2008).</li> </ul> <p>The ESCP will detail:</p> <ul style="list-style-type: none"> <li>• Specific erosion and sediment control measures to be implemented and maintained during construction; and</li> <li>• Ongoing monitoring and maintenance through operation and decommissioning of additional controls if identified as required.</li> </ul>	Construction
WR7	<p>The total area of disturbance at any time should be minimised where possible and ongoing rehabilitation and stabilisation strategies implemented throughout construction.</p>	Construction
WR8	<p>During construction, the following management measures will be considered to minimise the potential for mobilisation of sediment or dust from topsoil stockpile:</p> <ul style="list-style-type: none"> <li>• Locate stockpiles away from drainage lines, or areas subject to high levels of overland sheet flow and minimise stockpile size;</li> <li>• Develop and implement area specific erosion and sediment control measures including bunding and diversion drains as required; and</li> <li>• Use stockpile stabilisation techniques such as covering or dust suppression.</li> </ul>	Construction

ID	Mitigation Measures	Phase
WR9	<p>A CEMP will be developed to identify site specific controls and procedures to minimise the potential for hydrocarbons and other contaminants being discharged into the environment. This CEMP should consider:</p> <ul style="list-style-type: none"> <li>• Storage of hydrocarbons and other liquid chemicals with above ground, bunded area away from watercourses or area subject to high levels of overland sheet flow;</li> <li>• Re-fuelling of construction vehicles and equipment to be limited to designated areas, with adequate spill management controls;</li> <li>• Maintain an emergency spill kit and relevant emergency spill response procedures; and</li> <li>• Transport and dispose of any hydrocarbons captured during Project construction and operation of the substations and switchyards at a suitable off-site licenced facility.</li> </ul>	Construction Operation
WR10	<p>The CEMP will consider the following management measures to minimise the potential impacts to surface water and groundwater quality within and surrounding the Project area:</p> <ul style="list-style-type: none"> <li>• Develop and implement a suitable monitoring regime at sensitive downstream receivers, including visual inspections and routine monitoring of relevant physicochemical parameters; and</li> <li>• Develop and implement a suitable monitoring regime of all stormwater and erosion and sediment control structures, particularly following large flow events.</li> </ul>	Construction Decommissioning
WR11	<p>All required water licensing and approvals will be coordinated with associated landholders and/or regulators (e.g. Council, others) if that source is needed to support water supply arrangements for construction and operation.</p>	Post approval
WR12	<p>Design and implement a wastewater treatment system that:</p> <ul style="list-style-type: none"> <li>• Is appropriately sized for the Project infrastructure and operations;</li> <li>• Collects and treats wastewater from site offices and temporary accommodation facilities for re-use on site to fulfill non-potable construction and operation demands; and</li> <li>• Be designed and operated in accordance with best practices.</li> </ul>	Detailed design

## 6.11 TRANSPORT AND TRAFFIC

The TIA has been prepared to assess potential impacts of the Project on traffic and transportation and to identify mitigation and risk management measures during construction and operation (Amber, 2025). The TIA is provided in **Appendix P**.

The TIA addresses the requirements of the SEARs (refer **Appendix A**). It was undertaken in consultation with Transport for NSW (TfNSW) and Australian Track Road Corporation (ARTC), and with consideration of stakeholder engagement (refer **Section 5**).

The TIA was prepared in accordance with the following documents:

- Guide to Transport Impact Assessment (TfNSW, 2024);
- Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis (Austroads, 2020);
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads, 2021); and
- Austroads Guide to Traffic Management Part 6: Intersections, Interchanges, and Crossings (Austroads, 2020).

## 6.11.1 EXISTING ENVIRONMENT

### 6.11.1.1 EXISTING ROAD NETWORK

The Project is well connected within the surrounding State Roads Network, with access provided to the New England highway via Garoo Road. The New England Highway provides access to nearby urban centres and localities, including Tamworth, Quirindi and Scone. A summary of the surrounding road network is provided in **Table 6-32**.

**TABLE 6-32 SUMMARY OF ROAD NETWORK**

Road	Surface	Typical width	Speed Limit	Alignment
<i>State Roads</i>				
New England Highway	Sealed	13 m width, with one lane of traffic in each direction and 3 m sealed shoulders	100 km/h	General north-south alignment between Muswellbrook and Yarraman.
<i>Local Roads</i>				
Garoo Road	Sealed	7 m width with one lane of traffic in each direction and grassed shoulders	100 km/h	General northwest-southeast alignment between New England Highway and Lindsays Gap Road.
Lindsay Gap Road	Sealed	7 m width with one lane of traffic in each direction and grassed shoulders	100 km/h	General northeast-southwest alignment between New England Highway and Nundle Road.
<i>Municipal Road</i>				
Bulls Road	Unsealed	5.5 m width, single lane with grassed shoulders	-	General northeast-southwest alignment providing access to private lots.

### 6.11.1.2 TRAFFIC VOLUMES

#### Intersections

A turning movement count survey was undertaken on 4 December 2025 from 6:00am-10:00am and 2:00pm-6:00pm. Three key intersections were surveyed as follows:

- New England Highway / Garoo Road intersection;
- New England Highway / Lindsays Gap Road intersection; and
- Lindsays Gap Road / Garoo Road intersection.

The survey results indicated that the intersections experience very low to low levels of traffic, with the majority of heavy vehicles observed to remain on the New England Highway and Lindsays Gap Road.

#### Local Road Network

Tube counts were also conducted on Garoo Road and Lindsays Gap Road from 03 December 2025 to 10 December 2025.

Overall, the results indicate that Lindsays Gap Road and Garoo Road currently accommodate a relatively low level of traffic for its road classification and is able to accommodate an increase in vehicle traffic.

A summary of the traffic volumes is provided in **Table 6-33**.

**TABLE 6-33 TRAFFIC VOLUMES – GAROO ROAD AND LINDSAYS GAP ROAD**

Survey Location	Weekday Traffic (vpd)	AM 6:00 (vph)	PM 17:00 (vph)	85 <sup>th</sup> Percentile	Heavy Vehicle Percentage
<i>Garoo Road</i>					
Eastbound	61	5	6	100.0	16.5%
Westbound	52	5	4	91.1	
Both directions	113	10	10	95.6	
<i>Lindsays gap road</i>					
Eastbound	107	7	9	99.7	27.3%
Westbound	102	11	8	92.8	
Both directions	209	19	17	96.2	

Vpd: Vehicles per day

Vph: Vehicles per hour

### 6.11.1.3 ACCESS AND TRANSPORT SERVICES

The available restricted vehicle access and transport services within the vicinity of the Project Area include:

- **Public Transport:** No public transport services are provided within the vicinity of the Project Area;
- **School Buses:** Two school bus services, S202 and S218, operate in the vicinity of the Project Area. The S202 service travels on Garoo Road, and the S218 service uses the Garoo Road bus stop at the intersection of New England Highway;
- **Restricted Vehicle Access:** The Project Area has access to the B-Double approved road network via Garoo Road, Lindsays Gap Road and New England Highway under the provision that the above travel conditions are implemented within the Travel Management Plan (TMP);
- **Class 1 OSOM Vehicles:** The Project Area has access to the Class 1 OSOM approved road network via New England Highway. Garoo Road and a section of Lindsays Gap Road within Liverpool Plains Shire Council are unrated for Class 1 OSOM vehicles; and
- **Special Purpose Vehicles (SPVs):** The approved National Heavy Vehicle Regulator (NHVR) SPV routes and conditions include:
  - New England Highway: Approved for all SPVs, considering adherence with travel conditions (all SPVs) and infrastructure restrictions (SPV Level 3 and above);

- Lindsays Gap Road: Approved for SPV Level 1 and Level 3 within the Tamworth Regional Council area only. Therefore, permit approval would be required for SPVs to travel through Liverpool Plains Shire Council. No infrastructure restrictions were identified; and
- Garoo Road: Approved for SPV Level 1 only, with no infrastructure restrictions identified.

#### 6.11.1.4 CRASH HISTORY

A review of the TfNSW Centre for Road Safety Crash and Casualty Statistics database between 2019 and 2023 was undertaken for the following roads:

- New England Highway;
- Garoo Road;
- Lindsays Gap Road; and
- All associated intersections.

No discernible crash trends were identified, and the road network was determined to currently operate in a relatively safe manner.

#### 6.11.2 IMPACT ASSESSMENT

##### 6.11.2.1 CONSTRUCTION

##### **Traffic Generation and Distribution**

The Proponent intends to, where practicable, source the construction workforce, materials and equipment from the local surrounding area. Additional Project components, including larger plant, will be delivered from the Port of Newcastle. Indicative construction plant is summarised in **Table 3-6**.

Project related traffic will approach the Project Area from both directions on Garoo Road. Traffic approaching the Project Area from the north, which utilises the New England Highway / Garoo Road intersection, is limited to light vehicles. All other vehicles would approach the Project via Garoo Road from the east, utilising the New England Highway / Lindsays Gap Road intersection. Despite the on-site workforce accommodation camp proposing to house all project construction personnel during the peak construction period, the traffic assessment has been undertaken conservatively assuming all workers would approach/depart the site within the peak hours. It has been assumed that the personnel would be travelling from the nearby towns of Tamworth, Quirindi and Scone

Many heavy vehicles would not create daily trips to/from the Project Area, with influxes of arrivals and departures determined by construction requirements. High-risk OSOM vehicles will contribute the smallest percentage of vehicles accessing the Project Area during the construction phase and are not representative of the typical traffic impacts of the Project. Generally, heavy vehicles would be distributed throughout the day, and the number of inbound and outbound vehicles would be split evenly. All heavy vehicles would operate on the approved NSW SPV Network.

The predicted distribution of vehicles accessing the Project Area during construction is summarised in **Table 6-34**.

TABLE 6-34 VEHICLE TYPE AND ESTIMATED TRAFFIC DISTRIBUTION

Vehicle type	Vehicle description / use(s)	Estimated Traffic Distribution
<i>Light Vehicles</i>		
Cars	Transport construction workforce to and from the Project Area. A conservative vehicle occupancy of 1.5 people per car has been adopted to calculate the light vehicle traffic generation, noting a carpooling program may be established.	<ul style="list-style-type: none"> <li>80% travelling to/from Tamworth (north of the Project); and</li> <li>20% to/from Quirindi or Scone (south of the Project);</li> </ul>
<i>Heavy Vehicles</i>		
Shuttle buses	Transport construction workforce to and from the Project Area.	All shuttle buses would be to/from Tamworth along New England Highway.
Rigid trucks	Transport of smaller Project elements and raw materials, such as concrete and fencing supplies. Typical length between 8 and 13 m.	<ul style="list-style-type: none"> <li>90% travelling to/from the north; and</li> <li>10% travelling to/from the south.</li> </ul>
Truck and Dog vehicles	Transport quarry material to and from the Project Area. Truck and Dog vehicles consist of a rigid truck towing either a dog trailer or a pig trailer and are not more than 19 m in length. A dog trailer is a trailer with axles at either end of the trailer, a pig trailer has the axles centred on the trailer. These vehicles will be utilised to transport the majority of quarry materials to/from the site.	<ul style="list-style-type: none"> <li>90% travelling to/from the north; and</li> <li>5% traveling to/from the south.</li> </ul>
Semitrailers	Transport larger equipment and materials. These vehicles consist of a truck and a single trailer with a total length of 19 metres.	All vehicles will travel from the Port of Newcastle. They will utilise the New England Highway / Lindsays Gap Road intersection, accessing the Project Area from the east via Garoo Road.
B-Doubles	Transport of large Project components. B-Doubles consist of a truck with two trailers and have a maximum length of 26 m.	
Low Risk OSOM	Delivery of large plant and equipment.	
High Risk OSOM	Delivery of large plant and equipment. Vehicles may be 'built for a purpose' for carrying plant such as mobile cranes, which are defined as Special Purpose Vehicles (SPVs) and can also operate on the relevant approved networks subject to travel conditions.	High Risk OSOM will also travel from the Port of Newcastle and approach the Project Area from the east via Garoo Road. However, the access route varies from non-high risk heavy vehicle types (refer <b>Section 6.9.3</b> ).

Peak construction traffic movements will occur in the morning (6:00 am and 7:00 am) and evening (5:00 pm – 7:00 pm) when light vehicles and shuttle buses transporting the workforce arrives/departs. During the morning peak all vehicles would travel toward the Project Area, and in the evening peak all vehicles would travel away from the Project Area.

It is anticipated that during peak construction the Project would generate up to 108 light vehicles and 156 heavy vehicle trips per day (vpd). This accounts for up to 82 vehicle trips per hour (vph) in the peak morning and evening hours, which would reduce to 35 vph during the average construction period. The predicted traffic generation during the construction period is provided in **Table 6-35**.

TABLE 6-35 TRAFFIC GENERATION DURING CONSTRUCTION PERIODS

Vehicle type	Average Vehicle Movement		Peak Vehicle Movement	
	Daily	Peak Hour	Daily	Peak Hour
Cars	58	24	108	54
Shuttle buses	20	5	28	7
<i>Heavy Vehicles</i>				
Rigid trucks	6	1	56	6
Truck and Dog	28	2	62	8
Semitrailer	4	1	26	5
B-Doubles	0	0	10	2
SPV	0	1	0	0
Non-High Risk OSOM	0	1	2	0
<b>Total</b>	<b>116</b>	<b>35</b>	<b>292</b>	<b>82</b>

### Temporary Workforce Accommodation Camp

It is estimated that up to 20 vehicles per day (two-way total) would access the site during the camp establishment phase, generally consisting of light vehicles and rigid trucks. The small workforce associated with the establishment of the camp is expected to travel from the nearby towns.

Whilst the camp is occupied, vehicle movements associated with the workforce accessing the camp would generally be spread over multiple hours outside of peak times, including the weekend. Personnel may also travel between nearby towns on weekends or incidentally as required.

The vehicle movements associated with the accommodation camp are not expected to have any material impact on the operation of the road network as they would generally occur outside of peak times and would result in a lower level of traffic than the peak construction period volumes. The camp has sufficient parking to accommodate, with no parking to occur on the nearby road network

### SIDRA Intersection Analysis

A traffic modelling exercise has been undertaken for the intersections of New England Highway / Garoo Road and New England Highway / Lindsays Gap Road using the SIDRA intersection modelling software. This provides a Level of Service, which is a qualitative measure used to describe the operating conditions of a section of road or an intersection.

The SIDRA analysis for the morning peak hour (6:00-7:00am) and evening peak hour (6:00-7:00pm) during peak construction indicates both intersections are expected to continue to operate with a good level of service with minimal queuing and delays expected.

Detailed methodology and results are provided in the TIA (**Appendix P**).

## Midblock Analysis

An assessment of the mid-block operation has been conducted for Garoo Road and Lindsays Gap Road. This also provides a Level of Service, which is indicative of the ability of the road network to accommodate the traffic expected to be generated during the peak construction period.

The midblock analysis for the morning peak hour (6:00-7:00am) and evening peak hour (6:00-7:00pm) during peak construction indicates that both Garoo Road and Lindsays Gap road are able to readily accommodate the traffic generated.

Detailed methodology and results are provided in the TIA (**Appendix P**).

## Impact on School Bus Operation

The impact on the two school bus services operating in the vicinity of the Project is anticipated to be minimal. However, suitable measures will be included in future TMP, including scheduling of heavy vehicles outside school peak periods.

### 6.11.2.2 OPERATION

Vehicle movements during operation of the Project would primarily be associated with maintenance and operational services. The Project operational workforce will be between five to ten maintenance personnel and occasional deliveries, resulting in a traffic generation of up to 20 vehicle movements per day. There would also be occasional heavy vehicles delivering parts to the site, but only as required for maintenance.

Vehicle movements during Project operation are expected to have a negligible impact to the local traffic environment.

### 6.11.2.3 DECOMMISSIONING

Traffic generation during decommissioning would be similar to traffic generation during the average construction period. A comprehensive TMP would be prepared prior to the decommissioning phase in conjunction with the relevant road authorities. This would ensure adequate road safety and road network operations are maintained. Therefore, vehicle movements are expected to have a negligible impact on the local traffic environment.

### 6.11.2.4 HEAVY VEHICLE ROUTE ASSESSMENT

#### Non-High Risk Vehicles

All the solar farm plant is anticipated to be delivered from the Port of Newcastle. The proposed access routes for heavy vehicles (excluding high risk OSOM) is outlined in **Figure 6-13**, with a summary of relevant roads summarised in **Table 6-36**. The access route is approximately 251 km and utilises roads that are designated for B-Double vehicles as outlined within the NHVR Restricted Access Vehicle Map.

Implementation of a TMP that outlines traffic management measures would result in a minimal impact to the surrounding road network. Therefore, the road network is considered suitable to accommodate vehicle traffic volumes generated by the Project.

TABLE 6-36 PROPOSED ROUTE – HEAVY VEHICLES (NON HIGH RISK)

Road	Jurisdiction	B-Double Approved
Selwyn Street, George Street	City of Newcastle	Approved
Industrial Drive	TfNSW	
Pacific highway		
New England highway		
John Renshaw Drive		
Hunter Expressway		
New England Highway		
Lindsays Gap Road	Liverpool Plains Shire Council	Approved with conditions
	Tamworth Regional Council	Approved
Garoo Road	Tamworth Regional Council	

### High Risk OSOM Vehicles

The Project is expected to generate five High Risk OSOM vehicle movements during construction. These vehicles will travel outside of the peak periods and will be unloaded and kept to their smallest practicable dimensions when departing the Project Area, in order to avoid classification as OSOM where possible.

OSOM components will be imported to the Port of Newcastle, but the proposed route varies from the B-double access route (refer **Figure 6-14**) due to vertical clearance heights in Muswellbrook. The proposed OSOM access route is presented in **Figure 6-14**.

The access route assessment identified that the largest OSOM vehicle can access the Project Area without any road upgrades. A single lane bridge crossing (3.6 m width) located on Lindsays Gap road was identified as a potential constraint, however the Special Permits Unit of TfNSW advised no further bridge assessment was required as the proposed route remained on the TfNSW High Load Platform network

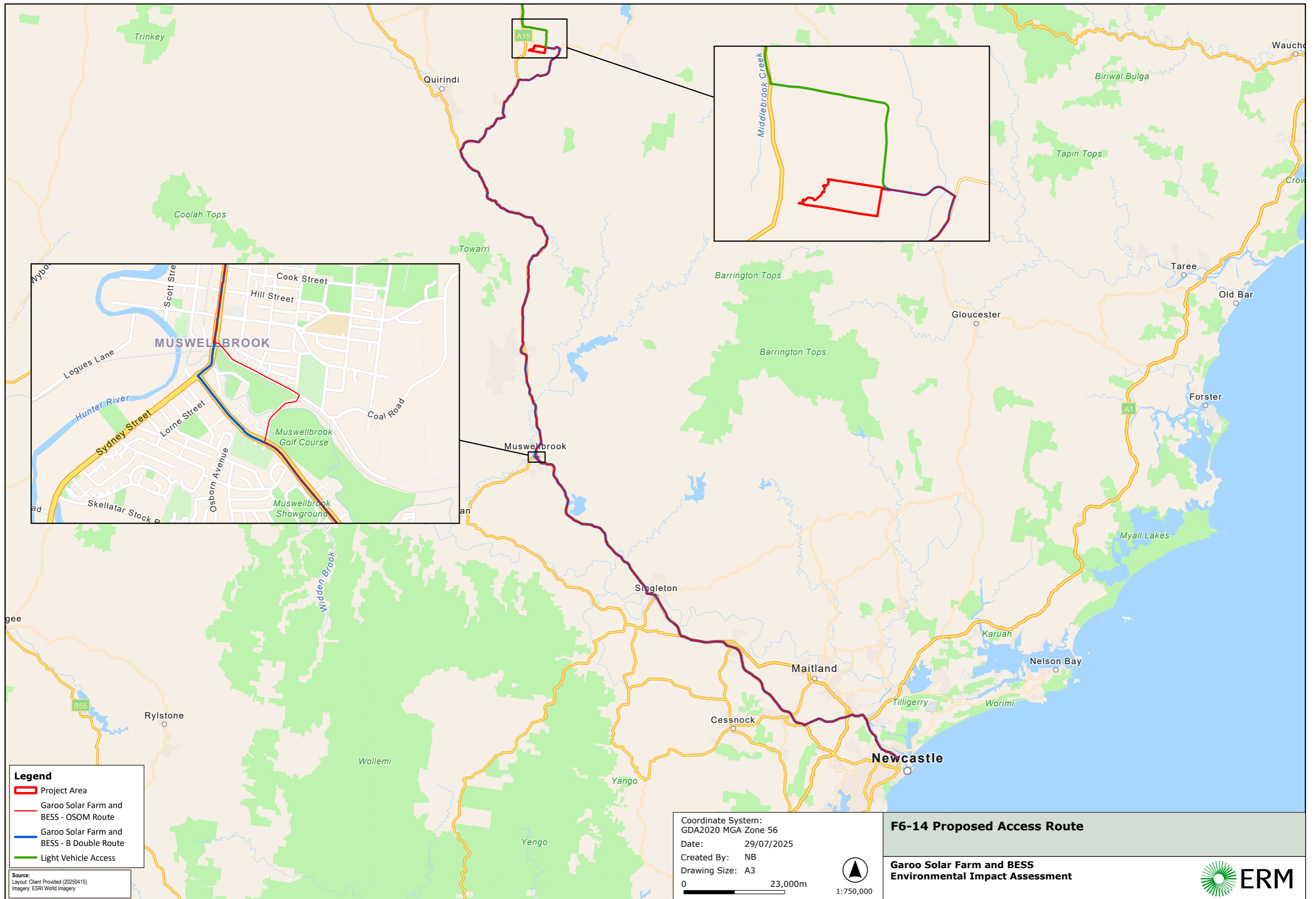
The following potential constraints were identified:

- Single lane bridge crossing (3.6 m width) located on Lindsays Gap road. However, the Special Permits Unit of TfNSW advised no further bridge assessment was required as the proposed route remained on the TfNSW High Load Platform network; and
- Railway crossing on Selwyn Street: the timing of the level crossing may need to be assessed to ensure that it is adequate for the length of the load. The crossing may not require management, but formal approval will be sought from the rail authority for the level crossing as part of the finalisation of the TMP.

#### 6.11.2.5 STATE ROAD PROJECTS

The proposed access route overlaps with two State Road Projects, the Hexham Straight Widening and the Port to REZ project. Both projects are anticipated to be complete before planned commencement of Project construction and are expected to facilitate access for heavy vehicles, including High-Risk OSOM movements.

However, publicly available information on the State Road Projects is limited, and therefore the route assessment may need to be updated as part of a later NHVR permit, should roads become unavailable for use.



**Legend**

- ▭ Project Area
- Garoo Solar Farm and BESS - OSOM Route
- Garoo Solar Farm and BESS - B Double Route
- Light Vehicle Access


Source:  
Layout: Client Provided (20250415)  
Imagery: ESRI World Imagery

Coordinate System:  
GDA2020 MGA Zone 56  
Date: 29/07/2025  
Created By: NB  
Drawing Size: A3

0 23,000m 1:750,000

**F6-14 Proposed Access Route**

**Garoo Solar Farm and BESS  
Environmental Impact Assessment**



### 6.11.2.6 INTERSECTION ASSESSMENT

Intersection assessments were undertaken to identify the required turning treatments and the sight distance to ensure vehicles are able to safely leave the road network. Four key intersections have been assessed:

- New England Highway / Garoo Road intersection;
- New England Highway / Lindsays Gap Road intersection;
- Lindsays Gap Road / Garoo Road intersection; and
- Garoo Road / site access.

Detailed methodology and results are provided in the TIA (**Appendix P**).

#### Turning Treatments

*Austrroads Guide to Traffic Management Part 6: Intersections, Interchanges, and Crossings* specifies the turning treatments required at intersections. The requirement to provide turning treatments at the intersections is primarily generated during the morning peak hour when the workforce access the site, which occurs from 6:00 am to 7:00 am.

Based on the expected traffic volumes, the assessment determined that the Garoo Road / Site Access intersection would require a Basic Right Turn (BAR) and a Basic Left Turn (BAL) treatment. The other three intersections were assessed to have existing capacity to provide a safe road environment for the proposed increase in traffic.

A swept path assessment for the site access location demonstrates that B-Double vehicles can suitably turn to/from Garoo Road towards the east with the inclusion of the proposed BAR and BAL treatments.

Upon request from the TfNSW Renewables Team, further checks of heavy vehicles (specifically 26 m B-Doubles) at the intersection of the New England Highway and Lindsays Gap Road were undertaken. Swept path analysis confirmed that the intersection can suitably accommodate these vehicles.

#### Sight Distance

*Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* specifies the Safe Intersection Sight Distance (SISD) as the minimum sight distance which should be provided along a major road at any intersection.

An assessment of the SISD indicates that vehicles can safely enter the road network from the Project Area and can safely enter the State Road Network at New England Highway from both Garoo Road and Lindsays Gap Road intersections.

After feedback from the TfNSW Development Renewables team, sight distance checks have also been prepared in plan view at the intersections. These confirmed the above findings.

### 6.11.2.7 EMERGENCY ACCESS

In the unlikely event of an emergency, the existing access on Bulls Road in the south-western corner of the Project Area would be used for access to or from the site. No use of Bulls Road is proposed for construction or operational vehicle access.

Review of existing access confirms there is suitable sight distance, and swept path checks confirm there is also available space for emergency vehicles (up to 12.5 m long HV) to safely access the site. No upgrades are required for Bulls Road.

### 6.11.3 MITIGATION AND MANAGEMENT

Mitigation measures that will be implemented to minimise traffic impacts are summarised in **Table 6-37**.

**TABLE 6-37 TRAFFIC AND TRANSPORT MANAGEMENT AND MITIGATION**

ID	Mitigation Measures	Phase
TT1	Neighbouring landowners are to be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.	Construction.
TT2	Heavy vehicles should avoid travel during peak bus operating times to limit the interaction of larger vehicles and vulnerable road users.	Construction.
TT3	OSOM vehicle movements are timed so they do not coincide with other OSOM vehicles within the surrounding area. This will limit the impact to the road network and can be undertaken as part of the permit application.	Construction.
TT4	Road upgrades will be undertaken prior to commencement of construction. This includes: <ul style="list-style-type: none"> <li>• Temporary lifting of overhead electrical cables along the access route, as required;</li> <li>• Management of the level crossing at the Selwyn Street railway crossing, if required;</li> <li>• Widening of the single lane bridge on Lindsays Gap Road, if required; and</li> <li>• BAR &amp; BAL treatments at the Garoo Road / Site Access intersection.</li> </ul>	Detailed design and Construction.
TT5	A TMP will be prepared prior to commencement of the Project construction period. The TMP will include (but not limited to): <ul style="list-style-type: none"> <li>• Information and communication protocols;</li> <li>• Required signage;</li> <li>• Local road management measures, including road condition, vegetation management, and traffic controls;</li> <li>• Car pooling program;</li> <li>• On-site mitigation measures; and</li> <li>• Driver protocols.</li> </ul> <p>The TMP will be prepared in accordance with Australian Standard 1742.3 and the <i>Work Health and Safety Regulation 2017</i>.</p>	Detailed design and Construction.

### 6.12 PRELIMINARY HAZARD ANALYSIS

The Preliminary Hazard Analysis (PHA) has been prepared to assess the hazards and risks associated with the Project, including potentially harmful effects of electromagnetic fields (EMF) (Engeny, 2025b).

The PHA addresses the requirements of the SEARs (refer **Appendix A**), and PHA related requirements from Agency (Tamworth Regional Council and Fire and Rescue NSW (FRNSW)). It considers hazards and risks posed to off-site receivers and dwellings associated with the transport, storage and use of hazardous materials for the Project.

The PHA has been prepared in general accordance with and/or with reference to:

- Resilience and Hazards SEPP;
- Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (NSW DoP, 2011a);
- Multi-Level Risk Assessment (NSW DPI, 2011b);
- Hazardous Industry Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning (HIPAP 4) (NSW DoP, 2011b);
- Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (HIPAP 6) (NSW DoP, 2011c);
- D22/107002 Large-scale external lithium-ion battery energy storage systems - Fire safety study considerations (FRNSW, 2023); and
- Guidelines For Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz to 100 kHz) (ICNIRP, 2010).

The PHA is presented in **Appendix Q**. Potential hazards and risks associated with bushfires are addressed separately as part of the Bushfire Risk Assessment (refer **Appendix Q**).

### 6.12.1 PRELIMINARY ANALYSIS

#### 6.12.1.1 PRELIMINARY RISK SCREENING

A preliminary risk screening determined that further assessment of the hazards and risk associated with the storage of LIBs and electrical transformers is required. However, no further assessment of transport risks is required.

The Workforce Accommodation Camp will store hazardous materials, including up to 210 kg of liquefied petroleum gas in cylinders. However, these are at quantities significantly less than the Applying SEPP 33 thresholds.

#### 6.12.1.2 LEVEL OF ASSESSMENT

The Multi-Level Risk Assessment (MLRA) technique is not directly applicable to LIBs. Therefore, the level of assessment considers the proximity of dwellings to the BESS, rather than the distance to the Project boundary. Using the approach for Tallawang Solar Farm project as a guide<sup>15</sup>, a Level 1 assessment (qualitative) is considered appropriate for the Project. This would be sufficient to demonstrate that the Project can comply with relevant criteria in HIPAP 4.

A Level 1 Qualitative Risk Assessment uses risk scoring criteria from *Australian Standard AS 4360:2004 – Risk Management*. A detailed methodology is detailed in **Appendix Q**.

### 6.12.2 HAZARD IDENTIFICATION

The following potential hazards and risks were identified during the PHA:

- LIBs, and associated risk of ignition, flammable and toxic gas dispersion, and thermal runaway<sup>16</sup>;

<sup>15</sup> Conservative approach that included a hazard study and hazard identification workshop, which was accepted by the DPHI

<sup>16</sup> Thermal runaway occurs when the battery temperature reaches a critical point where self-propagating reactions generate heat and gas, leading to potentially hazardous consequences.

- BESS design standards and recent BESS hazardous events (e.g Victorian Big Battery Fire);
- LIB fire response;
- Battery and energy density of the BESS;
- Electrical transformer oil leakage, and associated risk of leakage, environmental toxicity, ignition and explosion; and
- Electromagnetic field (EMF) and associated health impacts.

### 6.12.3 IMPACT ASSESSMENT

#### 6.12.3.1 HAZARD STUDY

A hazard identification workshop was undertaken with key Project stakeholders, which identified the following hazard scenarios:

- A LIB fire;
- A LIB vapour cloud explosion that involves:
  - The generation of gas from sufficient number of cells to form a significant mass of flammable gas due to thermal runaway within the BESS container; and
  - Ignition of the vapour cloud.
- A release of toxic gases associated with a thermal runaway event in a LIB; and
- A transformer fire or explosion.

The potential impacts of the hazardous events listed above is detailed in the PHA (**Appendix Q**), with the main consequences (thermal radiation, explosion overpressure and toxic gas concentrations) expected to be near field (i.e., less than 90 m).

Modelling of the thermal radiation indicates the distance to injurious impacts would be a maximum of 19 m. This is based on conservative assumptions, and as such distances to injurious impacts due to thermal radiation are likely to be much less than 19 m. The BESS will be located at least 35 m from the Project boundary and any associated dwellings.

Potential injurious or fatal impacts associated with a BESS explosion or toxic gas release could extend beyond the site boundary, however, the impacts are not considered likely to extend to the nearest off-site dwelling or associated dwelling. Based on the low likelihood of impacts to nearby dwellings and DPE advice (refer **Appendix Q**), quantitative analysis of the explosion or toxic release scenarios is not required.

It is noted the workshop was undertaken prior to the inclusion of the Workforce Accommodation Camp. While the camp is located closer to the BESS than the associated and non-associated dwellings, the camp is approximately 360 m away, which is over 250 m beyond the likely injurious impact distance associated with a BESS hazardous event. Further, the camp is temporary only and will be removed prior to BESS commissioning.

It is considered that substation design, installation, commissioning, operation and maintenance of the transformers in accordance with relevant Australian Standards will be adequate to ensure off-site risks from transformer fire and explosion are acceptable.

### 6.12.3.2 EMF

EMFs are generated by electrical equipment that has the potential for human health impacts. Project infrastructure will generate EMFs.

However, the distance between major EMF generating infrastructure (e.g. substation) and dwellings is significant, and consequently EMF strengths experienced at the dwellings will be negligible.

Overhead power lines are also at a sufficient height (approximately 8 m) to ensure that EMF experienced by off-site receivers is significantly below the below International Commission on Non-Ionizing Radiation Protection reference levels.

### 6.12.3.3 RISK ASSESSMENT

An evaluation of the identified Project risks found the Project to be compliant with respect to HIPAP 4 qualitative risk criteria. A detailed evaluation of the Project risks is presented in the PHA (**Appendix Q**).

### 6.12.4 MITIGATION AND MANAGEMENT

Mitigation measures that will be implemented to minimise traffic impacts are summarised in **Table 6-38**. An overview of the Emergency Plan is detailed in the PHA (**Appendix Q**).

**TABLE 6-38 HAZARD MITIGATION AND MANAGEMENT**

ID	Mitigation Measures	Phase
PHA1	The Project BESS will be separated from off-site dwellings and associated dwellings by at least 90 m which exceeds the maximum predicted fatality, injury and property damage/accident propagation consequence distances.	Detailed Design
PHA2	BESS units will: <ul style="list-style-type: none"> <li>• Meet requirements of UL 9540 Standard for Safety of Energy Storage Systems and Equipment and tested in accordance with UL 9540A;</li> <li>• Be designed to account for the anticipated local climatic conditions with respect to fire propagation;</li> <li>• Have appropriate interlocks and telemetry to detect and mitigate unsafe conditions during commissioning;</li> <li>• Incorporate adequate instrumentation, interlocks and alarms to minimise the risk of the LIB incubation period being approached by shutting down modules/racks and alarming unsafe temperatures or other unsafe conditions;</li> <li>• Have been subject to rigorous factory acceptance testing prior to dispatch from the supplier; and</li> <li>• Have an effective fire suppression system that will function for the full duration of fire event should the fire safety strategy involve suppression.</li> </ul>	All phases
PHA3	Design will ensure separation distances between BESS containers set to reduce the risk of accident propagation in accordance with manufacturer's instructions, appropriate standards/guidelines.	Detailed design
PHA4	BESS will have an appropriate freeboard above the 1% Annual Exceedance Probability flood level.	All phases
PHA5	Install lightning protection.	Construction and operation
PHA6	Install visible and audible alarms external to BESS units and at the remote monitoring centre, initiated should the BMS detect an unsafe BESS condition and/or thermal runaway event.	Operation

ID	Mitigation Measures	Phase
PHA6	Provisioning the Project site with adequate fire safety systems.	Construction and operation
PHA7	Ensure emergency services have clear access and egress to all areas of the site (including alternate access and egress routes) that may require an emergency response.	All phases
PHA8	Substation and transformers will be designed, installed, operated and maintained in accordance with the technical control measures detailed relevant Australian Standards (relevant standards detailed in <b>Appendix O</b> ).	All phases
PHA9	Control of off-site EMF exposure by: <ul style="list-style-type: none"> <li>Ensuring electrical equipment complies with relevant international and Australian standards; and</li> <li>Maintaining separation between EMF generating equipment and off-site receivers to keep EMF strength below ICNIRP reference levels for public exposure.</li> </ul>	All phases
PHA10	Final hazard analysis completed when the Project design has achieved an adequate level of detail.	Detailed design
PHA11	Suitably accredited freight company using dangerous goods licensed vehicles and drivers will transport the LIBs to site.	Construction
PHA12	An Emergency Plan consistent with Hazardous Industry Planning and Advisory Paper No. 1 – Emergency Planning (HIPAP 1) and Planning for Bushfire Protection will be prepared for the Project in consultation with relevant emergency services organisations and the Local Emergency Management Committee.	All phases
PHA13	Post construction inductions will be made available to first responders to make them aware of Project hazards and appropriate responses to Project hazard events.	Operation
PHA14	Adjacent landholders and associated dwellings will be consulted with to ensure they are aware of the hazards associated with the BESS and understand the emergency systems and protocols.	Operation
PHA15	Security measures will include perimeter fencing and CCTV monitoring of the BESS and electrical substations.	Construction and Operation
PHA16	Implementation of an Asset Protection Zone as per bushfire guidelines (refer BF1, <b>Section 6.13.3</b> ), and combustible material zone of 20 m maintained around substation and BESS components.	Operation
PHA17	Vehicle speed and traffic flow management considers on-site hazards and location of BESS facilities and substations.	Construction and Operation
PHA18	Appropriate training will be provided for all personnel responsible for operations, maintenance and emergency response.	Operation
PHA19	Hot work/safe work procedures will be prepared for any maintenance works Project equipment.	Operation
PHA20	Maintenance regimes to include: <ul style="list-style-type: none"> <li>Routine preventative maintenance;</li> <li>Interlock training; and</li> <li>Condition monitoring of BESS components and transformers.</li> </ul>	Operation
PHA21	Waste batteries segregated and disposed of at an appropriate facility by a suitably licensed waste contractor.	Operation

## 6.13 BUSHFIRE

A Bushfire Risk Assessment has been prepared to identify potential hazards and risks associated with the Project and its proximity to bushfire prone land. The Bushfire Risk Assessment also recommends mitigation and risk management measures to reduce the likelihood of a bushfire impacting the Project Area or spreading from the Project Area to surrounding properties.

The requirements for a Bushfire Risk Assessment was identified within the SEARs (**Appendix A**), and the *Rural Fires Act 1997* imposes obligations on land occupiers to take all practicable steps to prevent the occurrence and spread of wildfire to adjoining lands from lands under their care and management. The Bushfire Risk Assessment was prepared in accordance with the following guidelines:

- 'Planning for Bush Fire Protection 2019' (PBP 2019) (NSW RFS, 2019a) and the Addendum to PBP 2022 (NSW RFS, 2022); and
- Design Guidelines and Model Requirements for Renewable Energy Facilities v4 2023<sup>17</sup>.

The Bushfire Risk Assessment is provided in **Appendix R**, and contains a separate bushfire risk addendum created for the temporary Workers Accommodation Camp. Electrical hazards including battery fires and transformer fires are addressed separately as part of the Preliminary Hazard Assessment (**Appendix Q**).

### 6.13.1 EXISTING ENVIRONMENT

#### 6.13.1.1 BUSHFIRE PRONE LAND

The NSW Rural Fire Service (NSW RFS) bushfire prone land mapping dataset indicates that the Project Area predominantly comprises Vegetation Category 3, as described by the NSW RFS Guide for Bush Fire Prone Land Mapping (Version 5b, November 2015). There is also a small area on the western boundary of the Project Area classified as Vegetation Category 1 (refer **Figure 6-15**).

Vegetation Category 3 is considered medium bush fire risk, whilst Vegetation Category 1 is considered high risk.

#### 6.13.1.2 TOPOGRAPHY

Topography can influence rate of fire spread, intensity of fire and level of radiant heat flux. For every 10° uphill slope, the fire will double its speed, and conversely every 10° of downhill slope, the fire will halve its speed (CFA, 2023). In accordance with the requirements of PBP 2019, the effective slope of the Project Area has been categorised as:

- >0 degrees downslope to the west, north and north east; and
- >5 to 10 degrees upslope to the south, south east.

The effective slope over 100 m from the proposed accommodation camp is relatively flat, ranging from 0-5 degrees.

Tamarang Mountain (2 km south) and Sugarloaf Mountain (1.5 km west) are steep vegetated ranges located uphill of the Project Area, which will slow down the spread of any fires from the south or west.

<sup>17</sup> Developed in Victorian context, but represents current leading practice for large-scale renewable energy facilities.

### 6.13.1.3 VEGETATION AND INDICATIVE FIRE BEHAVIOUR

Descriptions of the vegetation types are included in the BDAR (refer **Appendix G**). The dominate vegetation type having the potential to affect the proposed infrastructure is cleared exotic grassland (grazed). Fragmented patches of woody grassland are also present around the central riparian corridor and BESS location. Potential fire runs of more than 20 km extend in all directions, predominantly relating to the connectivity of grassland and grassy woodland communities within the region.

Most of the Project area and surrounding agricultural lands have some level of management by cropping, grazing and/or slashing. Fuel load is dependent on several factors, including rainfall, vegetation growth and stock loading, which will vary across seasons/years. The Applicant intends to utilise livestock grazing to maintain a low fuel state around Project infrastructure.

Based on the dominance of grassland, the Project Area was determined to have a Fire Behaviour Index (FBI) of 14, which is considered a moderate Fire Danger Rating (FDR). Although not the dominant fuel within the Project Area, grassy woodlands can also affect fire behaviour through fire propagation, increased fuel load, and wind shielding. This vegetation type is assigned an FBI of 18 within the Project Area and considered a moderate FDR.

A 140 m buffer has been applied to the workforce accommodation camp; vegetation within this buffer is classified as cleared exotic pasture (grazed grassland), with an FBI of 14 and moderate FDR.

### 6.13.1.4 CLIMATE AND FIRE WEATHER

The Project is located in the Tamworth Bushfire Management Committees (BFMC) area. The prevailing water conditions associated with bushfire season in the Tamworth BFMC area includes north-westerly winds, high daytime temperatures and low relative humidity, which all contribute to fire hazard. There are also frequent dry lightning storms during the bushfire season. Bureau of Meteorology (BoM) data confirm that both low humidity and high temperature occur within the bushfire season and would contribute to the fire hazard within this region.

Human -induced climate change is influencing the frequency and severity of dangerous bushfire conditions in Australia, influencing temperature, environmental moisture, weather patterns and fuel condition. While this may necessarily not cause ignition, it is increasing the chance for fires to become catastrophic. There is also indication that climate change could increase risk of ignition from dry lightning.

### 6.13.1.5 FIRE HISTORY

The Tamworth Bush Fire Risk Management Plan (NSW RFS, 2020) reported an average of 270 bushfires per year, 18 of which are considered major fires. The main sources of ignition include:

- Lightning strikes;
- Agricultural burns and practices;
- Malicious fires;
- Escaped pile burns;
- Machinery and vehicle fires; and
- Welding, grinding and associated construction activities.

A review of recent Fire Extent and Severity Mapping and NSW National Parks and Wildlife Service (NPWS) Fire History Mapping identified no fire events within proximity to the Project Area. The closest fire event was over 5km northwest of the Project Area, and was restricted to the local mountain range.

### 6.13.2 IMPACT ASSESSMENT

Project operation is considered a low intensity, with only 5-10 FTEs. However, there could be up to 180 - 250 FTEs present within the Project Area during construction, which is expected to extend over 18 months. Therefore, provision of adequate defensible space and access / egress is to be considered as the first stage of construction.



Earth moving equipment, power tools (e.g., welders, grinders), mowers and slashers are well known for starting bushfires under certain conditions. Therefore, these will be a potential source of ignition during construction and operational maintenance activities.

It is intended that a low fuel state will be maintained across the Project Area through livestock grazing, with mechanical or manual clearing methods used where necessary. It is the intent of the Applicant that the majority of the Project area will remain available for grazing during operation (refer **Section 6.8** and **Appendix M**).




The Project does not have a history of bushfire and has a moderate bushfire danger rating. The risk that the Project will cause a fire is considered low provided that appropriate protection measures are applied.

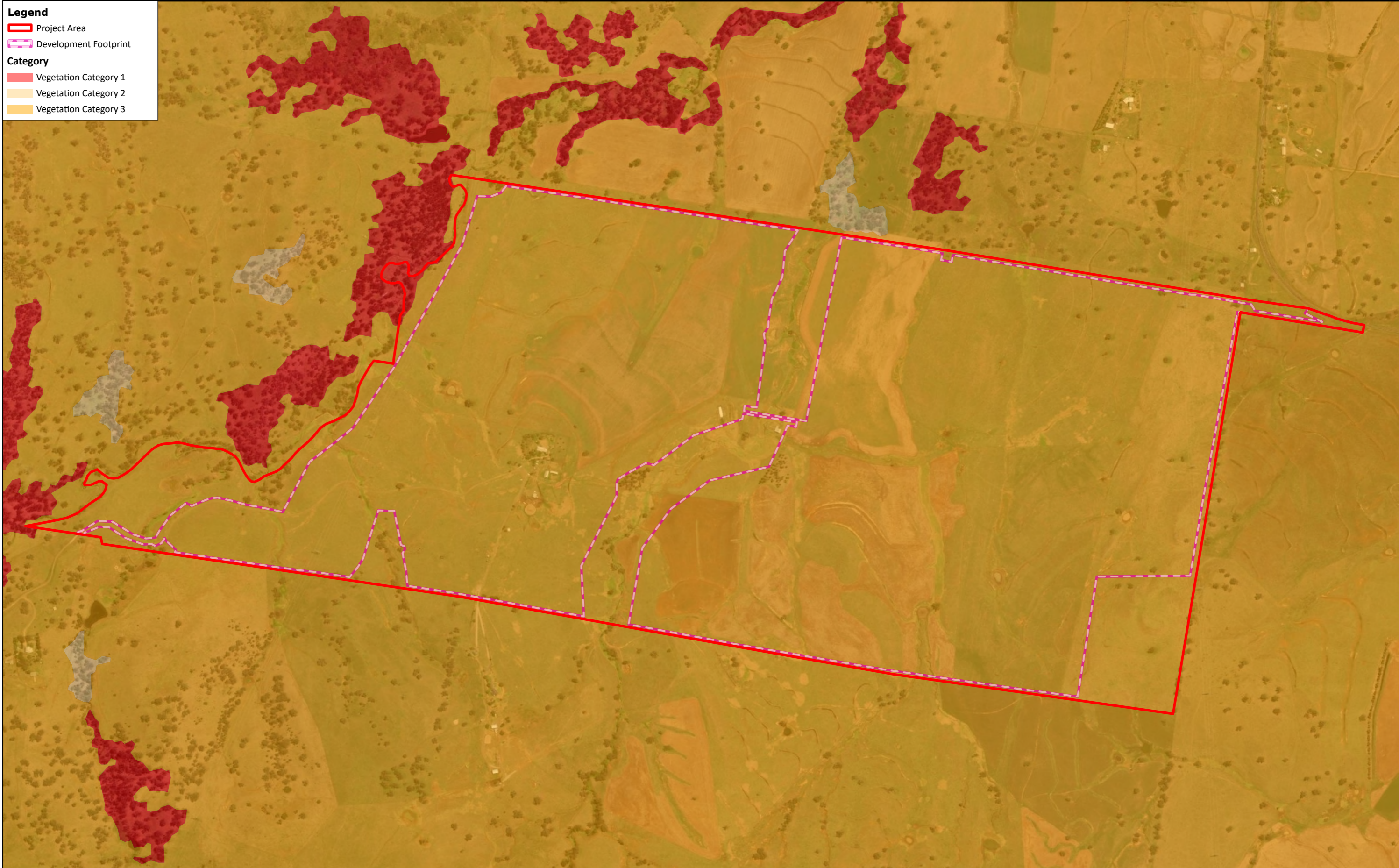
If a fire does breach any containment lines and threatens the Project assets, it is possible that the infrastructure will sustain direct flame contact and that firefighting will require external support. It is important that key assets have adequate defensible space on all sides.

**Legend**

-  Project Area
-  Development Footprint

**Category**


-  Vegetation Category 1
-  Vegetation Category 2
-  Vegetation Category 3



Source:  
 Boundary: Client Provided (20250415)  
 Base Data: NSW DCDB/DTDB  
 Imagery: ESRI World Imagery

Coordinate System:  
 GDA2020 MGA Zone 56  
 Date: 29/01/2026  
 Created By: NB  
 Drawing Size: A3

0 200 400m

 1:11,000

**F6-15 Bushfire Prone Land**

**Garoo Solar Farm and BESS  
 Environmental Impact Assessment**



### 6.13.3 MITIGATION AND MANAGEMENT

Mitigation will be a combination of complementary strategies, all of which are required to provide the best possible protection outcome for the solar farm and the community. Measures have been developed to meet the provisions detailed in Section 8.3.5 of PBP 2019 and ensure that the solar farm development does not present any increased risk of widespread fire across the landscape. In terms of design principles to minimise risk, the solar farm layout will be designed to:

- Provide a defensible space around infrastructure; and
- Ensure that appropriate access, egress and manoeuvrability within the solar farm is provided for first responders.

The identified mitigation measures will be applied for the life of the Project and are summarised in **Table 6-36**, with detailed mitigation strategies outlined in **Appendix R**.

**TABLE 6-39 BUSHFIRE MITIGATION AND MANAGEMENT**

ID	Mitigation Measures	Phase
BF1	<p>APZ:</p> <ul style="list-style-type: none"> <li>• A minimum 10 m APZ established around the perimeter of the Development Footprint, including solar array and BESS, and on all sides of the substations, switching station, and O&amp;M Buildings;</li> <li>• Essential equipment should be designed and maintained so that it will not serve as a bush fire risk to surrounding property;</li> <li>• All APZ are to be managed as an inner protection zone, as per Appendix 4 of PBP 2019, and NSW RFS 'Standards for Asset Protection Zones' (NSW RFS, ); and</li> <li>• APZ will not extend beyond the property boundary or rely on actions being undertaken by adjacent landowners.</li> </ul>	Operation
BF2	<p>Access Roads and Road Network:</p> <ul style="list-style-type: none"> <li>• Access to the Project area during construction and operations is expected via the regional council road network, with a single access point off Tarana Road to the south;</li> <li>• An additional emergency access gate is recommended to be installed from Bulls Road to provide emergency access to the south western portion of the site; and</li> <li>• All roads will be maintained to the standards as outlined within the NSW RFS Fire Trail Standards (NSW RFS, 2023). All access roads must be maintained and kept free of parked vehicles or other obstructions.</li> </ul>	Construction and Operation
BF3	<p>Water storage:</p> <ul style="list-style-type: none"> <li>• A dedicated water supply with appropriate access is required at the site to assist in the event of a fire; and</li> <li>• The final list of fire suppression equipment and water storage requirements will be confirmed in consultation with NSW RFS and FRNSW following project approval and detailed design. The most appropriate locations and number of tanks required will need to be identified in response to the final design.</li> </ul>	All phases
BF4	<p>Transmission lines:</p> <ul style="list-style-type: none"> <li>• Certain activities will be restricted within the easement such as planting and growing trees, construction of buildings, or erection of antennae or masts. While it has not been confirmed how the easement will be formally registered, for the purposes of this bushfire risk assessment, key responsibilities and management measures will be applied and are the responsibility of the asset owner (Transgrid).</li> </ul>	Construction and Operation

ID	Mitigation Measures	Phase
BF5	<p>Solar Farm and BESS Construction:</p> <ul style="list-style-type: none"> <li>• The APZ and access roads will be constructed prior to the installation of any solar panels or related infrastructure;</li> <li>• Fire detection and suppression systems should be installed at the earliest stage of construction for BESS infrastructure.</li> <li>• Ensure appropriate bunding in areas where there is potential for flammable fuels and oils to leak and create bushfires or other environmental risks;</li> <li>• Install appropriate signs to assist emergency response crews determine the location of infrastructure;</li> <li>• Ensure that appropriate permits have been issued for work during the Fire Danger Period, and that any conditions on permits are adhered to;</li> <li>• Adhere to restrictions on Total Fire Ban or days of high fire danger;</li> <li>• Carry emergency communications equipment;</li> <li>• Restrict smoking to prescribed areas, and provide suitable ash and butt disposal facilities;</li> <li>• All plant, vehicles and earth moving machinery are cleaned of any accumulated flammable material (e.g., vegetation); and</li> <li>• On days of Extreme or Catastrophic fire danger, access to the site should be limited to essential works only.</li> </ul>	Construction
BF6	<p>Solar Farm and BESS Operation:</p> <ul style="list-style-type: none"> <li>• Vegetation fuels throughout the solar farm are to be maintained in a minimal condition by grazing, or with additional slashing or mowing if required; and</li> <li>• A Bushfire Emergency Management and Operations Plan will be prepared with consideration of Australian Standard/ISO 31000 Risk management principles and guidelines and Australian Standard 3745: Planning for emergencies in facilities.</li> </ul>	Operation
BF7	<p>The Workforce Accommodation Camp will meet varied performance criteria, in accordance with requirements for a Special Fire Protection Purpose, as detailed in the PBP 2019. This will include:</p> <ul style="list-style-type: none"> <li>• Minimum APZ of 36-40 m;</li> <li>• Maintenance of vegetation surrounding and within the camp;</li> <li>• Accommodation designed to meet BAL 12.5 under AS 3959; and</li> <li>• All access roads and utilities infrastructure compliant with aims and objectives detailed in the PBP 2019</li> </ul>	

## 6.14 ECONOMICS

An Economic Impact Assessment (EIA) was undertaken to assess the potential economic impacts of the construction and operation of the Project on the regional and NSW economy. The EIA also presents management and mitigation measures to address identified economic impacts. The EIA is presented in **Appendix S**.

The EIA addresses the relevant requirements of the SEARs (**Appendix A**) and considers all relevant stakeholder engagement, as described in **Section 5**.

### 6.14.1 METHODOLOGY

#### 6.14.1.1 STUDY AREA

The Study Area (also referred to as the 'regional economy') assessed in the Economic Impact Assessment is the Tamworth Regional LGA, as it represents the primary geographical area where the economic effects from the construction and operation of the Project are most likely to be concentrated.

Neighbouring LGAs of Liverpool Plains Shire, Upper Hunter Shire and Walcha may experience some economic impact, with provisions made for income leakage beyond the Tamworth Regional LGA. Impacts to the broader statewide economy are also assessed.

#### 6.14.1.2 INPUT-OUTPUT ANALYSIS

An Input-Output (IO) model was applied to evaluate the direct and indirect impacts of the construction and operation of the Project on the regional and NSW economy. The model is based on ABS data, using key economic indicators such as gross output, gross value added, gross household income and employment. The economic impacts are calculated across one-digit Australian and New Zealand Standard Industrial Classification (ANZSIC) industry sectors. A detailed methodology for this assessment is included in **Appendix S**.

Other potential economic considerations are addressed qualitatively to determine the broader economic influence of the Project

#### 6.14.2 EXISTING ENVIRONMENT

An overview of the existing environment within the Regional Economy is provided in **Table 6-40**. This has been assessed through relevant economic indicators, based on data sourced from the ABS. Further detail is provided in **Appendix S**.

**TABLE 6-40 SUMMARY OF THE REGIONAL ECONOMY (TAMWORTH REGIONAL LGA)**

Demographics	Summary
Population	<ul style="list-style-type: none"> <li>Total population: 63,670.</li> </ul>
Population growth	<ul style="list-style-type: none"> <li>Steady population growth, but at a slower pace than NSW; and</li> <li>Projected growth 2021-2041 of +0.5%.</li> </ul>
Housing	<ul style="list-style-type: none"> <li>Homeowners, fully own: 7,934;</li> <li>Homeowners with mortgage: 7,382 (median monthly mortgage of \$1,517);</li> <li>Renters: 7,336 (median weekly rent of \$300); and</li> <li>Vacancy rate of 1.3% in 2024.</li> </ul>
Employment	<ul style="list-style-type: none"> <li>Total labour force: 29,980 (35.6% of total population);</li> <li>Total unemployed: 1,341 (1.6% of total population); and</li> <li>Primary occupation is professionals (17.6%).</li> </ul>
Industry Sectors (Employment)	<ul style="list-style-type: none"> <li>Significant industries for employment include hospitals, secondary education, meat processing, social assistance and supermarkets/grocery stores.</li> </ul>
Industry Sectors (Economic Structure)	<ul style="list-style-type: none"> <li>Five key industries represent 45.3% (\$2,187 million) of the total economic output. These include manufacturing, health care and social assistance, construction, education, and agriculture, fishing and forestry.</li> <li>Health care and social assistance is the largest contributor in terms of value added, being the most significant driver of economic activity.</li> </ul>

#### 6.14.3 IMPACT ASSESSMENT

##### 6.14.3.1 ECONOMIC

The Project will drive economic activity, benefiting both the local, regional and broader NSW economy during the construction and operation phases.

During construction, direct impacts to the regional and NSW economy will primarily flow through to the construction industry, with a range of construction, transport, management, support and professional related industries benefiting indirectly. During operation, direct impacts predominantly focus on electricity supply, transmission, distribution, and electricity market operations sectors. Like the construction phase, multiple industries will indirectly benefit from operations, including utility, financial, construction, manufacturing and professional services.

The direct and indirect economic impacts to the regional and NSW economy are summarised in **Table 6-41**.

**TABLE 6-41 ANNUAL ECONOMIC IMPACTS OF THE PROJECT**

Impacts	Phase	Total Effect					
		Regional			NSW		
		Direct	Indirect	Total	Direct	Indirect	Total
Output (\$M)	Construction	119	309	<b>428</b>	136	353	<b>489</b>
	Operation	61	102	<b>163</b>	61	124	<b>185</b>
Value-added (\$M)	Construction	41	97	<b>139</b>	49	119	<b>168</b>
	Operation	21	14	<b>35</b>	21	21	<b>42</b>
Household income (\$M)	Construction	26	9	<b>35</b>	26	14	<b>40</b>
	Operation	2	1	<b>3</b>	2	1	<b>3</b>
Jobs (FTEs)	Construction	180	67	<b>247</b>	180	99	<b>279</b>
	Operation	10	4	<b>14</b>	10	6	<b>16</b>

Note: Total impact may differ from the sum of the direct and indirect impact due to rounding in the tables

### 6.14.3.2 AGRICULTURE

The Project Area comprises cleared agricultural land that is predominantly used for livestock grazing, with small-scale cropping also present. The construction period, which is expected to last 18 months, is anticipated to disrupt grazing and access across the entire Project Area and therefore impact agriculture production. The direct and indirect economic impacts of foregone agriculture to the regional and NSW economy during construction is summarised in

**Table 6-42**.

**TABLE 6-42 ANNUAL ECONOMIC IMPACTS OF FOREGONE AGRICULTURE**

Impacts	Study Area			NSW		
	Direct	Indirect	Total	Direct	Indirect	Total
Output (\$M)	0.075	0.25	<b>0.325</b>	0.085	0.298	<b>0.382</b>
Value added (\$M)	0.035	0.117	<b>0.152</b>	0.04	0.14	<b>0.18</b>
Household income (\$M)	0.014	0.028	<b>0.041</b>	0.056	0.112	<b>0.168</b>
Jobs (FTEs)	0.3	0.5	<b>0.8</b>	1.26	2.64	<b>3.9</b>

Note: Total impact may differ from the sum of the direct and indirect impact due to rounding in the tables

The Applicant intends to establish an agrisolar grazing system. This will enable the Project to accommodate livestock grazing during operation, minimising the impact to landowners and farmers. Solar grazing can have potential economic benefits, including (but not limited to) increased wool production, carrying capacity and wool quality. Economic quantification of these impacts has not been completed due to limited research on the subject; however, the Project is anticipated to result in minimal agricultural losses during the operation phase.

#### 6.14.3.3 HOUSING

The Workforce Accommodation Camp (refer **Section 3.4.12**) will be sufficient to cover the average construction and peak period workforce during construction. This should alleviate all potential housing impacts associated with the construction of the Project

Operation of the Project is not anticipated to have any adverse impacts on housing due to the small number of employees.

#### 6.14.3.4 CONTRIBUTIONS AND AGREEMENTS

The Applicant has entered into a range of contributions and agreements. These are detailed in **Section 2.7**, and addressed below as required.

##### **Landowner Agreements**

The Applicant has entered into agreements with the host landowner and five neighbouring landowners, providing economic benefits to those stakeholders. These agreements are detailed further within **Section 2.7**.

##### **Benefit Sharing Scheme**

The Applicant has proposed a model of community benefit sharing in accordance with the Benefit-Sharing Guideline (NSW DPHI, 2024e). The benefit scheme has been developed in cooperation with a range of stakeholders including Tamworth Regional Council, relevant agencies, community groups and local residents and focuses on neighbourhood and local community benefits.

As per the Benefit-Sharing Guideline, the maximum total financial value threshold for solar developments is \$850/MW per annum, which equates to \$133,696 per annum for the Project. The proposed benefit sharing scheme will have an estimated total financial value of \$58,696 per annum during construction and \$93,696 per annum during operation and is therefore compliant with the Benefit-Sharing Guideline.

The estimated total for construction is less than half the permitted value and could be increased to align with values observed in similar projects.

#### 6.14.4 MITIGATION AND MANAGEMENT

The Applicant will work in partnership with the local councils and community to help maximise the projected economic regional benefits whilst minimising any impacts. **Table 6-43** details the proposed mitigation and management measures.

TABLE 6-43 ECONOMIC MITIGATION MEASURES AND MANAGEMENT

ID	Mitigation Measures	Phase
EC1	Establish a local opportunity framework that prioritises employment of regional residents (subject to availability and market competitiveness). Framework to include: <ul style="list-style-type: none"> <li>• Expression of interest process;</li> <li>• Application link on the Project website; and</li> <li>• Delivery of all local applicant and contractor details to the EPC contractor prior to the start of construction.</li> </ul>	All phases.
EC2	Non-labour inputs to production will be locally sourced (where practicable).	Construction and Operation
EC3	Establish benefit sharing schemes with the intention to support the local neighbours, community rehabilitation and social projects (refer <b>Section 2.7</b> and <b>Section 6.12.4</b> ). This will include: <ul style="list-style-type: none"> <li>• Cultural Fund;</li> <li>• Community Health Fund;</li> <li>• Scholarships; and</li> <li>• Annual energy rebates.</li> </ul>	All phases.
EC4	Establish agreements with host landholders and relevant neighbouring landholders to provide an alternative income.	All phases.
EC5	Cooperation with neighbours to minimise agricultural disruption.	Construction and Operation
EC6	Continued agricultural activities during the operation phase of the Project and reinstatement of agricultural production following project decommissioning.	Operation
EC7	Establish commutable routes/programs that enable the Project to be accessed from wider regions, alleviating housing pressures. This may include carpooling programs or road upgrades (refer <b>Section 6.9.5</b> ).	All phases.

## 6.15 AIR QUALITY

This air quality assessment has been prepared to describe the air quality of the region and evaluate impacts to air quality that may occur during construction, operation and decommissioning of the Project. It also summarises the mitigation measures proposed to manage impacts to air quality predominantly associated with the construction stage of the Project. Due to the lack of significant point and fugitive sources of air pollutants from the Project, a quantitative assessment is not necessary.

This air quality assessment addresses the relevant requirements of the SEARs (**Appendix A**) and considers all stakeholder engagement as described in **Section 5**.

The following methodology was undertaken to assess the impact of the Project to air quality:

- Description of local climate, including rainfall, wind speed and direction;
- Description of existing air quality based on background monitoring data;
- Identification of sensitive receivers relevant to air quality;
- Qualitative assessment of Project emissions; and
- Development of mitigation and management measures to control potential impacts.

### 6.15.1 EXISTING ENVIRONMENT

#### 6.15.1.1 LOCALITY CONSIDERATION

The Project Area is situated in the locality of Garoo, in which land is predominantly utilised for agricultural production. Agricultural operations are unlikely to have a significant influence on local and regional air quality.

There is one associated dwelling located within the Project Area; however, this property will be removed as part of the proposed development. Therefore, the closest residential receiver to the Project is the non-associated dwelling R2 located approximately 0.3 km south of the Project. The nearby towns and population centres in the vicinity of the Project Area (by road):

- Wallabadah – 12.9 km southwest (population 216);
- Nundle – 25.3 km east (population 314);
- Quirindi – 29 km southwest (population 2,602);
- Werris Creek – 49 km northwest (population 1,349); and
- Tamworth – 40.5 km north (population 35,415).

#### 6.15.1.2 LOCAL CLIMATE

The Project is located within the Nandewar IBRA Bioregion and the Peel IBRA subregion (NAN4). The climate across the bioregion is mostly warm and dry, however temperature varies with elevation (NSW NPWS, 2003). Mean annual temperatures range from 10-18 °C, with central areas of high elevation, such as the Liverpool Ranges and Nandewar Ranges, experiencing cooler temperatures and warmer temperatures corresponding to lowlands around main river catchments (NSW NPWS, 2003). Rainfall in the bioregion is characterised by frequent high intensity rains that follow a summer dominant pattern, with areas of higher altitude receiving more rainfall (NSW NPWS, 2003).

An understanding of the existing climatic context of the Project Area was developed through available data from the Australian Government's Bureau of Meteorology (BoM).

The closest BoM weather station is Gowrie (Lallybroch) (055195), located approximately 760m southwest of the Project Area at an elevation of 638 m Australian Height Datum (AHD) (BOM, 2024a). This station has rainfall data from September 1958 to January 2023, which is presented in **Table 6-44**.

Across Australia, wind speed and wind direction measurements are made at various times of the day. Wind roses summarise the occurrence of winds at a location, showing their strength, direction and frequency, noting that:

- The percentage of calm conditions is represented by the size of the centre circle – the bigger the circle, the higher the frequency of calm conditions;
- Each branch of the rose represents wind coming from that direction, with the top of the diagram representing winds blowing from the north (e.g., northerly winds); and
- The length of the bar represents the frequency of occurrence of winds from that direction, and the colour and width of the bar sections correspond to wind speed categories.

The closest BoM station with wind data is Quirindi Post Office (055049), located approximately 21.9 km southwest of the Project Area at 390 m AHD. The 9am and 3pm wind speed (km/h) are presented in **Table 6-45**, with 73% of the wind measured at 9am considered 'calm' (refer **Figure 6-16**). A wind rose was not available for 3 pm observations. Wind data from Tamworth Airport (055325), located 38 km north of the Project Area at 404 m AHD, is also provided in **Table 6-45** and **Figure 6-17**. Here, 43% of the wind measured at 9am and 25% of wind measured at 3 pm, is considered 'calm'. **Figure 6-16** includes a guide to interpreting the wind rose.

### 6.15.1.3 LOCAL AIR QUALITY

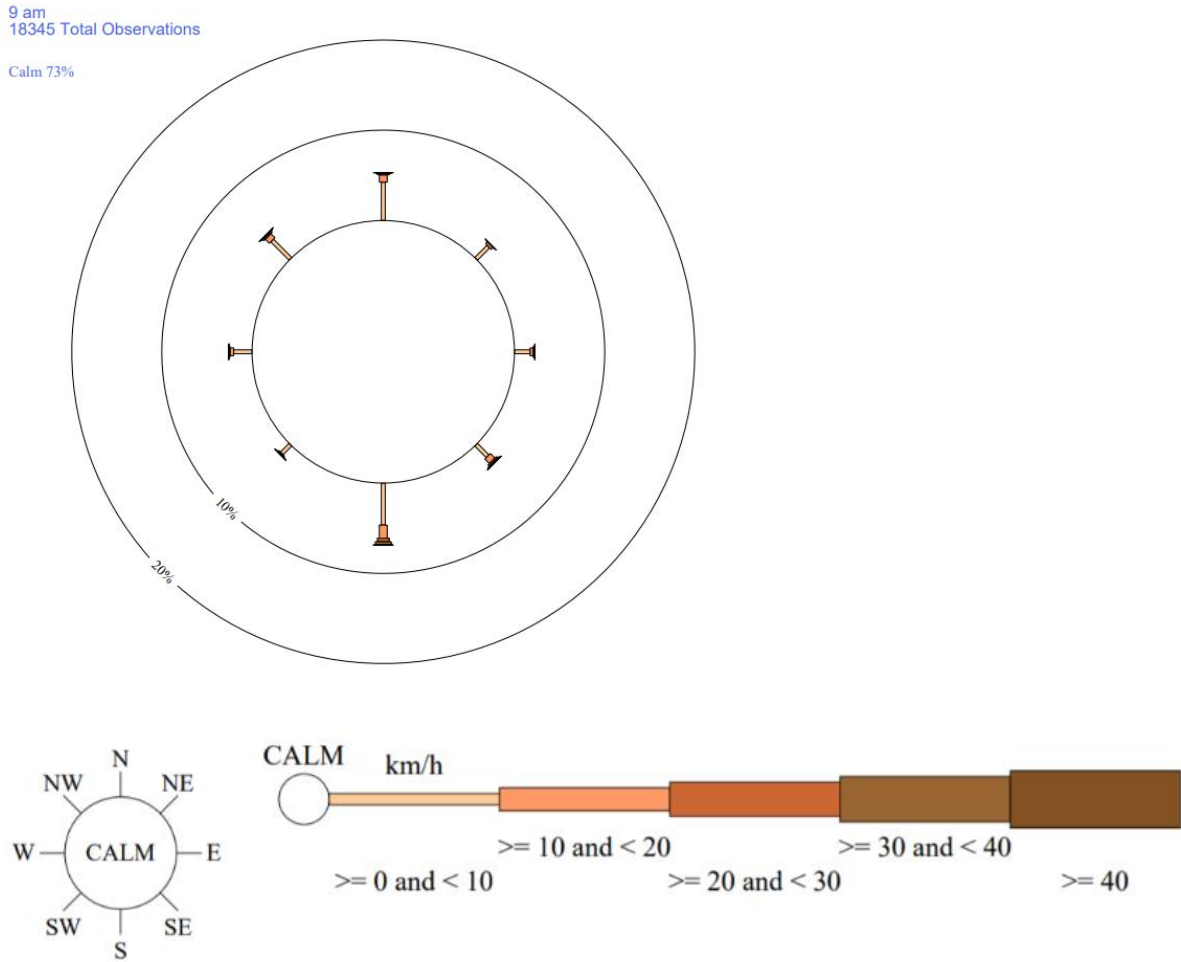
Air quality of the Project locality is influenced by land use. Land use in and around the Project Area is predominantly agricultural. Existing sources of air pollution in the vicinity of the Project include:

- Particulate matter e.g. wood smoke, bushfires, dust (unsealed roads and dust storms), inclusive of:
  - Particulate matter less than 10 microns in aerodynamic diameter (PM<sub>10</sub>); and
  - Particulate matter less than 2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>).
- Agricultural farming activities and earthworks creating dust and odours; and
- GHG emissions (industry, plant and equipment, petrol /diesel engine motor vehicle use).

The daily air quality index (AQI) rating is typically sustained as "Good" across the North West Slopes region (NSW DPE, 2024), meeting the *National Environment Protection (Ambient Air Quality) Measure* (AAQ NEPM) benchmarks for daily particle levels (PM<sub>10</sub> and PM<sub>2.5</sub>) for at least 96% of days in winter, spring and autumn 2023 (NSW DCCEEW, 2024a) (NSW DCCEEW, 2024b) (NSW DCCEEW, 2024c). A slight decrease in air quality was observed within the region over summer 2023-24, with national benchmarks met 93% of the time (NSW DCCEEW, 2024d). The closest air quality monitoring station is located 35 km north of the Project Area in Tamworth, which was compliant with the daily and annual AAQ NEPM goals for PM<sub>10</sub> and PM<sub>2.5</sub> (excluding exceptional events) (NSW DPE, 2023a).

It is important to note that there is annual variability in air quality, driven largely by climatic events, such as bushfires, dust storms and climatological events like El Niño and La Niña. For example, the decrease in air quality observed in the North West Slopes region over summer 2023-24 was influenced by the Duck Creek Pillage Forest bushfire in December 2023 (NSW DCCEEW, 2024d). Similarly, increased drought / low rainfall can impact in groundcover, which may increase dust levels and exacerbate local and regional dust. Other events that lead to elevated concentrations of air pollutants include agricultural burning and hazard reduction burns (NSW DPE, 2023a).

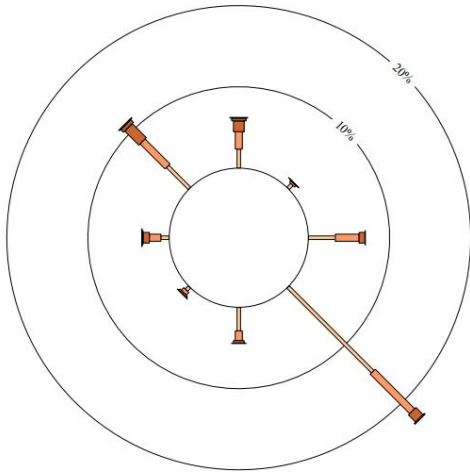
**FIGURE 6-16 ANNUAL WIND OBSERVATIONS, QUIRINDI POST OFFICE, 1965 - 2024**



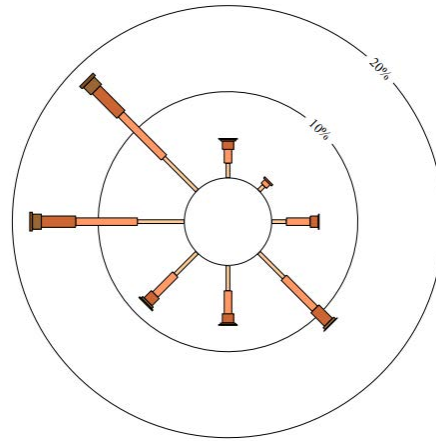
Source: Bureau of Meteorology (BoM, 2024b)

FIGURE 6-17 ANNUAL WIND OBSERVATIONS, TAMWORTH AIRPORT 1957 - 1992

9 am  
12794 Total Observations  
Calm 43%



3 pm  
12200 Total Observations  
Calm 25%



Source: Bureau of Meteorology (BoM, 2024b)

TABLE 6-44 MONTHLY RAINFALL DATA (MM), GOWRIE (LALLYBROCH) WEATHER STATION (BOM 055195)

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
<b>Mean</b>	93.7	66.5	60.7	36.9	50.1	55.3	46.9	47.2	57.4	68.2	77.2	89.1	752.7
<b>Lowest</b>	3.6	0.0	0.0	0.0	0.0	6.6	1.8	0.0	1.6	7.0	0.6	5.6	320.5
<b>Median</b>	75.5	52.9	50.3	29.2	45.4	43.4	40.9	47.0	45.0	68.4	63.4	84.8	720.4
<b>Highest</b>	267.8	202.6	228.2	127.9	172.0	202.0	175.9	122.3	171.1	169.9	235.9	226.5	1265.9

Source: Bureau of Meteorology (BoM, 2024b)

TABLE 6-45 MONTHLY WIND SPEED DATA (KM/H), QUIRINDI POST OFFICE AND TAMWORTH AIRPORT

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
<b>Quirindi Station (BoM 055049)</b>													
<b>Mean 9 am wind speed</b>	3.9	3.9	3.7	3.0	2.3	2.4	2.3	2.9	3.3	4.7	4.6	4.7	3.5
<b>Mean 3 pm wind speed</b>	8.0	8.3	8.1	8.4	8.0	8.8	8.4	8.4	7.9	7.3	10.0	8.8	8.4
<b>Tamworth Airport AWS (BoM 055325)</b>													
<b>Mean 9 am wind speed</b>	12.9	12.2	11.6	9.9	9.5	9.1	9.3	10.2	11.5	12.8	13.1	12.5	11.2
<b>Mean 3 pm wind speed</b>	16.8	16.3	15.8	15.1	14.3	14.2	14.8	16.9	17.3	17.5	17.9	16.7	16.1

Source: Bureau of Meteorology (BoM, 2024b)

Quirindi Station: Mean 9am wind speed is based on observations from 1965 – 2010. Mean 3 pm wind speeds from 1967-1981.

Tamworth Airport AWS: Mean values based on observations from 1992-2010.

## 6.15.2 IMPACT ASSESSMENT

### 6.15.2.1 AIR QUALITY

Emissions to the atmosphere from the Project would predominantly be associated with construction activities, which will be temporary and limited to:

- Localised dust emissions generated by land disturbance; and
- Exhaust emissions of civil construction and vehicle, plant and machinery.

The construction timeframe for the Project is approximately 18 months. During construction of the temporary workforce accommodation camp and the project infrastructure, dust particles and other air quality emissions could potentially be released from activities including:

- Earthworks including clearing, erosion and sediment control, site levelling, access tracks, site drainage works, fencing and foundations;
- Vegetation clearing and creation of exposed areas;
- Vehicular movements along unsealed internal tracks and local access roads, including the transport of material and equipment, haulage activities, and worker movements;
- Use of construction equipment;
- Processing and handling of material;
- Transfer points; and
- Loading and unloading of material.

The implementation of the recommended mitigation measures in **Section 6.15.3** will ensure that the Project can be constructed without any significant impact to local and regional air quality.

The operational life of the temporary workforce accommodation camp will be for 15 months, from commencement of Project construction until approximately 3 months prior to construction completion. Air quality impacts from the use of the Workers Accommodation Camp while in operation are expected to be minor.

### 6.15.2.2 GREENHOUSE GAS EMISSIONS

The Project will displace GHG emissions that would otherwise be generated through the burning of fossil fuels used to generate electricity from traditional coal-fired power stations. The Project would thus abate the production of approximately 270,000 tonnes of carbon dioxide equivalent (CO<sub>2</sub>-e pa).

The Project is not expected to include any point or fugitive sources of offensive odour and hence will not cause or permit the emission of any offensive odour pursuant to section 129 of the POEO Act.

Some GHG emissions will be generated from the Project construction and operations, largely related to the combustion of fuels. The use of heavy machinery, equipment and heavy vehicles during construction of the Project will be limited to the construction phase and emissions will be localised and therefore considered negligible. There will also be embodied emissions in materials to be used to construct the solar farm, including processing of materials and transportation to site, as well as the clearing of vegetation, however, this will be minor.

During operations, the Project infrastructure will generate electricity without directly emitting air pollutants that are known to affect the climate and human health. However, ongoing maintenance of infrastructure and land will result in minor, localised vehicle and machinery emissions.

### 6.15.2.3 DECOMMISSIONING

Potential impacts to air quality during the decommissioning of the Project would be like those during construction, with the exception of vegetation clearing, which is only required for site preparation.

Additionally, at the time of decommissioning the Applicant will consider best available technologies to avoid and minimise air quality impacts, which may include the potential for decommissioning to be undertaken using technologies such as electric vehicles.

Therefore, air quality impacts during decommissioning would be less than expected for construction.

### 6.15.3 MITIGATION AND MANAGEMENT

Mitigation measures that will be implemented to minimise air quality impacts are summarised in **Table 6-46**. These measures will be included in the air quality section of the EMS, where appropriate.

As part of the detailed design, the Applicant will continue to investigate options to further avoid and minimise air quality impacts, including but not limited the use of a light vehicle fleet and potentially some heavy construction electric vehicles.

**TABLE 6-46 AIR QUALITY MANAGEMENT AND MITIGATION**

ID	Mitigation Measures	Phase
AQ1	Dust suppression measures (watering roadways) or preparing roadways with coarse gravel or other road coverings will be implemented where required to minimise wheel-generated offsite dust emissions.	All phases
AQ2	Material loads, which may generate dust, such as aggregates, will be covered and/or stabilised during transport into and within the construction site where practicable.	Construction
AQ3	Soil stockpiles will be managed through stabilisation, light watering or the use of covers.	Construction
AQ4	Where practicable, vegetation clearance will be minimised, undertaken in stages and cleared areas will be stabilised.	Construction
AQ5	Vehicle speed will be managed when travelling on unsealed roads.	All phases
AQ6	Speed of dumping from tip trucks will be controlled.	Construction
AQ7	Vehicle movements will be minimised, where practicable.	All phases
AQ8	Vehicles, plant and equipment will be cleaned and washed.	All phases
AQ9	Disturbance areas no longer required for construction will be progressively revegetated and stabilised.	Construction
AQ10	All vehicles, plant and equipment will be regularly inspected and maintained to ensure operational efficiency.	All phases
AQ11	Environmental conditions that may result in dust generation, such as wind, will be regularly monitored during construction. Control measures will be implemented, as specified above.	Construction
AQ12	Meteorological forecasts will be reviewed prior to commencement of activities that have the potential to generate dust, considering the presence of high winds and/or hot and dry conditions. Where relevant, appropriate controls will be identified that address these factors.	Construction

## 6.16 WASTE MANAGEMENT

This waste assessment addresses the requirements of the SEARs (refer **Appendix A**) and has been prepared to characterise the waste streams likely to be generated from the construction, operation and decommissioning of the Project. It also details measures to manage these waste streams.

The requirements of the following legislation, guidelines and strategies will be considered during construction and operation of the Project, to ensure the effective management of wastes on-site:

- POEO Act;
- Protection of the Environment Operations (Waste) Regulation 2014;
- *Waste Avoidance and Resource Recovery Act 2001* (NSW) (WARR Act);
- 'NSW EPA Waste Classification Guidelines – Part 1: classifying waste' (NSW Waste Classification Guidelines) (NSW EPA, 2014a) and Addendum (NSW EPA, 2016a);
- 'NSW Waste and Sustainable Materials Strategy 2041' (WSM Strategy) (NSW DPIE, 2021) and
- 'NSW EPA Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012' (NSW EPA, 2012).

Best practice for waste management was also considered in this assessment, applying the following waste hierarchy in accordance with the WARR Act and the ESD (i.e. avoidance of unnecessary resource consumption, resource recovery and disposal).

### 6.16.1 EXISTING ENVIRONMENT

The Project Area is currently utilised for agricultural purposes, characterised by the grazing of modified pastures and cropping. The current landowner is responsible for the management of waste generated by these activities.

The existing suitable waste management facilities within a 100 km (by road) vicinity of the Project are listed in **Table 6-47**.

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TABLE 6-47 EXISTING WASTE MANAGEMENT FACILITIES

Waste Management Facility	Location	Accepted Waste Streams (of relevance)	Distance to Project
<i>Tamworth Regional LGA</i>			
<i>Tamworth (Forest Road) Waste Management Facility (EPL 5921; EPL 12673)</i>	123a Forest Road, Tamworth, 2340	<ul style="list-style-type: none"> <li>• General Solid waste (putrescible);</li> <li>• General Solid Waste (non-putrescible);</li> <li>• Asbestos waste;</li> <li>• Waste tyres;</li> <li>• Liquid waste, as per Landfill Environmental Management Plan: <ul style="list-style-type: none"> <li>◦ Septic tank pump-out waste;</li> <li>◦ Grease trap pump-out waste;</li> <li>◦ garbage bin wash-out waste; and</li> <li>◦ other chemically similar liquid wastes.</li> </ul> </li> <li>• Composting of certain organics: <ul style="list-style-type: none"> <li>◦ Garden waste;</li> <li>◦ Paunch material generated by livestock processing activities.</li> </ul> </li> <li>• Any waste below licensing thresholds in Schedule 1 of the POEO Act;</li> <li>• Garden waste;</li> <li>• General or Specific exempted waste; and</li> <li>• Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act</li> </ul>	48 km
<i>Challenge Tamworth Recycling</i>	123b Forest Road, Tamworth, 2340	<ul style="list-style-type: none"> <li>• Recyclable General Solid Waste, including glass, plastics, containers, steel, paper and cardboard.</li> </ul>	48 km
<i>Liverpool Plains Shire LGA</i>			
<i>Quirindi Landfill</i>	Merriwa Road (off Werris Rd), Willow Tree, 2338	<ul style="list-style-type: none"> <li>• General Solid waste (putrescible);</li> <li>• General Solid Waste (non-putrescible), <b>including</b> building and construction materials;</li> <li>• Liquid waste (oil);</li> <li>• Special Waste (Asbestos, tyres); and</li> <li>• Hazardous waste (batteries).</li> </ul>	42 km

<i>Waste Management Facility</i>	<i>Location</i>	<i>Accepted Waste Streams (of relevance)</i>	<i>Distance to Project</i>
<i>Willow Tree Landfill</i>	250/256 Merriwa Rd, Willow Tree NSW 2339	<ul style="list-style-type: none"> <li>• General Solid waste (putrescible);</li> <li>• General Solid Waste (non-putrescible), <b>including</b> building and construction materials;</li> <li>• Liquid waste (oil);</li> <li>• Special Waste (tyres); and</li> <li>• Hazardous waste (batteries).</li> </ul>	46 km
<i>Werris Creek Landfill</i>	46 Werris Creek Tip Road, 2341		60 km
<i>Pine Ridge Transfer Station</i>	Pine Ridge, Bundella Road New South Wales, 2343	<ul style="list-style-type: none"> <li>• General Solid waste (putrescible);</li> <li>• General Solid Waste (non-putrescible), <b>excluding</b> building and construction materials;</li> <li>• Liquid waste (oil);</li> <li>• Special Waste (tyres); and</li> <li>• Hazardous waste (batteries).</li> </ul>	65 km
<i>Caroona Transfer Station</i>	4D Road, Caroona, 2343		70 km
<i>Spring Ridge Transfer Station</i>	Silo Road (Railway Ave), Spring Ridge, 2343		87 km

Distance to Project represents distance via publicly accessible roads

## 6.16.2 IMPACT ASSESSMENT

### 6.16.2.1 WASTE STREAMS

Waste generated during the construction phase will include green waste and soil from site establishment and earthworks, packaging materials (e.g., cardboard, plastics, wooden pallets) and excess construction materials, such as electrical cabling and metals. Some types of waste, such as hazardous chemicals, cannot be safely recycled and direct treatment or disposal is the most appropriate management option.

During operation, the waste streams will be limited to minor quantities of putrescible waste, associated with site maintenance activities and domestic and sewerage waste from the O&M facility. Materials such as fuels and lubricants, redundant equipment and metals may require replacement over the operational life of the Project. No waste streams would be associated with the generation of electricity.

When the Project reaches decommissioning, most materials are likely to be recycled or reused in accordance with waste hierarchy principles. Items that cannot be reused or recycled, would be classified and disposed of at suitable facilities following applicable regulations. Batteries would be disposed in accordance with the hazardous waste policies active at the time of decommissioning.

### 6.16.2.2 WASTE MANAGEMENT

The Applicant has consulted Tamworth Regional Council regarding waste management (refer **Table 5-4**). Tamworth Regional Council advised that Tamworth (Forest Road) Waste Management Facility is the only suitable waste management facility, and general advice to renewable energy proponents is to pursue private recycling and disposal arrangements wherever practicable. However, the Council is committed to working proactively with Applicant to identify practical and compliant waste management solutions. Liverpool Plains Shire Council has also been consulted, and would consider accepting Project waste within reasonable waste type limits, in context of the lessening of disposal space.

The Applicant will continue to work closely with both Councils to develop waste management options and will also engage private options. This will be progressed further once detailed waste quantities can be determined.

### 6.16.3 MITIGATION AND MANAGEMENT

A Waste Management Plan (WMP) will be required and is to be prepared in accordance with the Solar Guidelines and in consultation with the relevant authorities. A copy of the plan would be provided to Council's Waste Operations unit to prepare for incoming waste volumes, types and disposal methods outlined in the plan.

**Table 6-47** summarises specific measures to be included in the WMP of the Project for each phase.

**TABLE 6-48 WASTE MANAGEMENT MITIGATION MEASURES**

ID	Measures	Phase
WM1	Adopt protocols to identify opportunities to follow the waste hierarchy, to encourage the most efficient use of resources, as well as reduce costs and environmental harm in accordance with the principles of ESD.	Construction
WM2	Adopt purchasing protocols in the selection of all components of the Project, in order to reduce the likelihood of equipment failure and minimise the potential for waste.	Construction
WM3	Select solar panel manufacturers, as recommended by the Clean Energy Council, that will meet a range of higher standards in addition to relevant Australian and International Standards.	Construction
WM4	Engage with Tamworth Regional Council to discuss the options for disposal and reuse of the identified waste streams likely to be generated, in order to ensure that any use of local waste management facilities does not exhaust available capacity, nor disadvantage the local community.	Construction
WM5	Classify wastes in accordance with the NSW EPA Waste Classification Guidelines – Part 1: classifying waste (NSW EPA, 2014a) and Addendum (NSW EPA, 2014a).	Construction
WM6	Provide waste storage locations within the assigned area, with sufficient space for the separation and storage of different waste.	Construction and Operation
WM7	Store and dispose of waste lawfully at a licensed waste facility, including fuels, oils and hazardous substances used onsite.	Construction and Operation
WM8	Separate recyclable and non-recyclable materials on-site prior to being transported to waste facility.	Construction and Operation
WM9	Investigate opportunities for recycling of wastes prior to sending to landfill.	Construction and Operation
WM10	Waste receptacles will be collected on a regular basis by licensed contractors or Council collection service and transported for offsite disposal at an appropriately licensed landfill or recycling facility.	Operation
WM11	Provide toilet facilities for onsite workers and how sullage would be disposed of (e.g., pump out to local sewage treatment plant).	Construction
WM12	Provisions protocol for the packaging, transportation of spent lithium-ion batteries to collection and recycling facilities.	Decommissioning

Decommission and rehabilitation of the Project will be undertaken in accordance with Project approval requirements. Indicative management strategies that will be adopted for each waste type are detailed in **Table 6-49**.

**TABLE 6-49 INDICATIVE WASTE GENERATION AND MANAGEMENT STRATEGIES**

ID	Waste Type	Management Strategies
WM13	Green waste	Onsite reuse where possible or reused offsite in accordance with the 'Mulch Resource Recovery Order and Exemption' (NSW EPA, 2016b).
WM14	Spoil	Onsite reuse; or reused offsite as Virgin Excavated Natural Material or the Excavated Natural Material Resource Recovery Order and Exemption' (NSW EPA, 2014b) (as applicable).

<i>ID</i>	<i>Waste Type</i>	<i>Management Strategies</i>
WM15	<i>Concrete</i>	Separated and stored in separate receptacles/ storage areas. Reused onsite where feasible; reused offsite in accordance with the 'Recovered Aggregate Resource Recovery Order and Exemption' (NSW EPA, 2014b); or transported off site for recycling.
WM16	<i>Timber</i>	<p>Where practicable, procurement of surplus pallets will be avoided. Delivery of material on pallets will be limited where practicable; however, if materials have to be delivered on pallets, these will be returned to the supplier at time of delivery (where practicable). Pallets will be reused where possible, through product stewardship arrangements sought by the Applicant prior to construction. Damaged pallets will be sold for wood chip where practicable (e.g., if untreated and uncontaminated).</p> <p>Wood pallets not suitable for reuse or recycling would be stored in designated waste storage areas for collection by an authorised contractor for offsite drop-off.</p>
WM17	<i>Plastic packaging</i>	Source separated and stored in separate receptacles/ storage areas. Offsite transport for recycling.
WM18	<i>PET</i>	Source separated and stored in separate receptacles/ storage areas. Offsite transport for recycling.
WM19	<i>Cardboard packaging/ paper waste</i>	Source separated and stored in separate receptacles/ storage areas. Offsite transport for recycling.
WM20	<i>Glass</i>	Source separated and stored in separate receptacles/ storage areas. Offsite transport for recycling.
WM21	<i>Empty chemical drums</i>	Reused onsite, recycled via contractor or returned to supplier.
WM22	<i>Paint</i>	Transported from site and disposed of in accordance with the 'Waste Classification Guidelines' (NSW EPA, 2014a).
WM23	<i>Oil spill clean-up material</i>	Collected oily rags and spill clean-up material will be collected in regulated waste bins and transported by a licensed regulated waste contractor to a licenced regulated waste receiver for disposal.
WM24	<i>Waste oils, lubricants and liquids</i>	Stored separately and transported by a licensed regulated waste contractor to a licensed regulated waste receiver for disposal.
WM25	<i>Metals (ferrous and non-ferrous)</i>	Scrap metal will be stored for periodic transportation offsite to applicable recycling facilities.
WM26	<i>Solar panels</i>	<p>Damaged and end-of-life solar panels and associated infrastructure will be transported by a licensed regulated waste contractor to a licenced regulated waste receiver for disposal.</p> <p>As far as technology allows, waste management providers that specialise in recycling of solar panels will be investigated.</p>
WM27	<i>Electronics and electrical infrastructure</i>	Stored in dedicated areas prior to offsite transport. As far as possible, all materials and components will be reused, sold as scrap, recycled or re-purposed to the maximum amount economically practicable. Where not practicable, materials will be transported from site and disposed of in accordance with the 'Waste Classification Guidelines' (NSW EPA, 2014a).

ID	Waste Type	Management Strategies
WM28	Recyclable domestic waste	Stored in dedicated recyclable bins for periodic transportation offsite to applicable recycling facilities.
WM29	Septic tank waste	Collected waste will be transported by a licenced regulated waste contractor to a licenced regulated waste receiver for disposal.
WM30	Domestic wastes	Transported from site and disposed of in accordance with the Waste Classification Guidelines (NSW EPA, 2014a).

## 6.17 SOCIAL

A Social Impact Assessment (SIA) has been prepared to provide the DPHI with an understanding of the Project's potential social impacts, and how these social impacts are identified, assessed, managed, and monitored. The SIA is provided in **Appendix T**.

The SIA addresses the relevant SEARs (refer **Appendix A**), considers stakeholder engagement (refer **Section 5**), and has been undertaken in accordance with the following guidelines, ensuring consistency with the legislative and regulatory context:

- Social Impact Assessment Guideline for State Significant Projects (NSW DPE, 2023b); and
- Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (NSW DPE, 2023c).

**Figure 6-18** outlines the steps taken to complete the SIA.

FIGURE 6-18 SIA PROCESS



### 6.17.1 EXISTING ENVIRONMENT

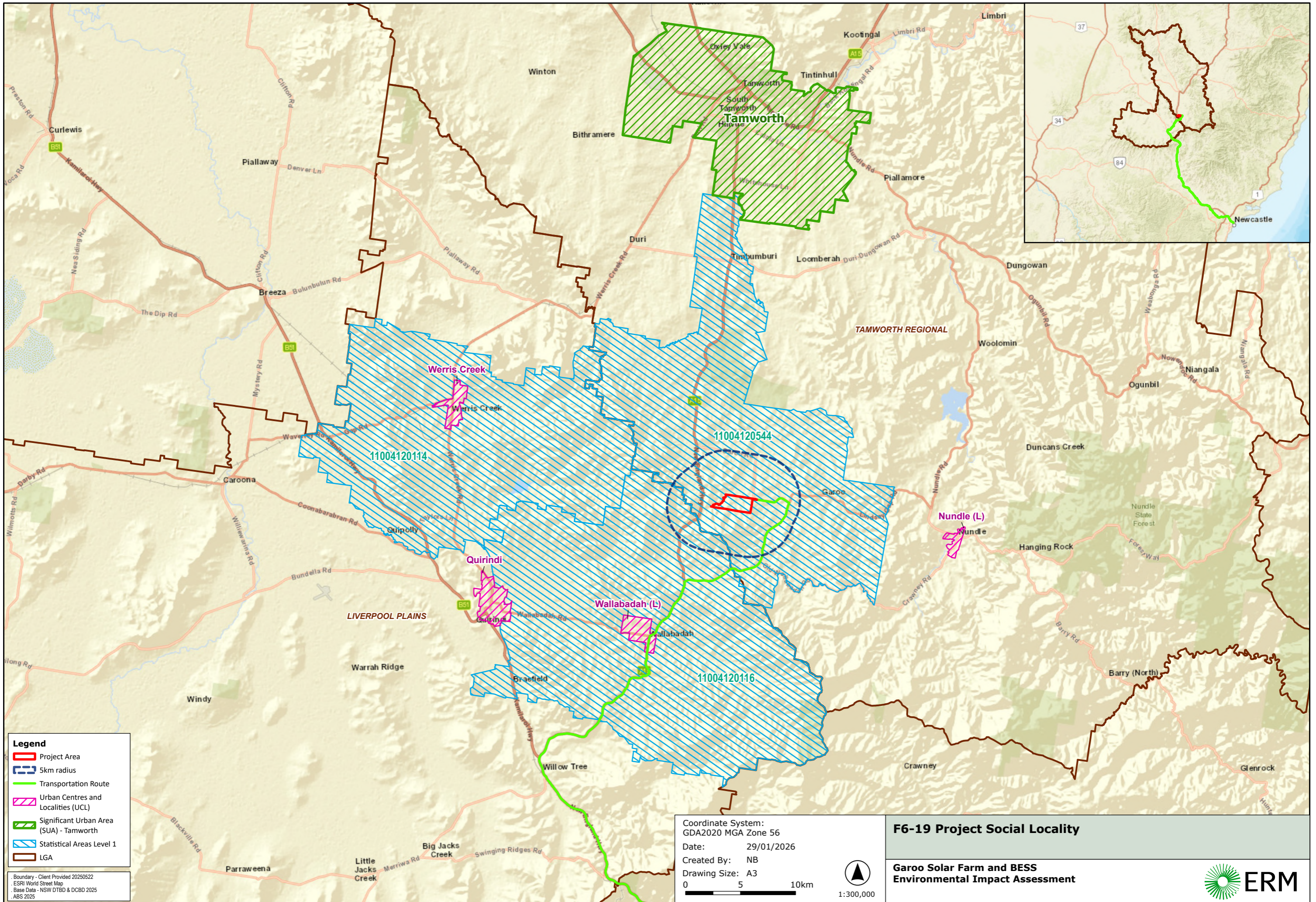
#### 6.17.1.1 SOCIAL LOCALITY

The Project's Social Locality is displayed in **Figure 6-18**. This comprises three components, which are summarised in **Table 6-50**. The primary ABS datasets, which provide key demographic data across the Project's Social Locality, are summarised in **Appendix T**. Where available, 2016 and 2021 Census data was used to enable the comparative trend analyses:

TABLE 6-50 COMPONENTS OF THE PROJECT'S SOCIAL LOCALITY

Component	Description
Project Area and immediate surrounding areas	Refers to the following ABS Statistical Area Level 1 (SA1) Numbers: <ul style="list-style-type: none"> <li>• SA1 11004120544 (containing the Project);</li> <li>• SA1 11004120116 (adjacent to Project Area to the South); and</li> <li>• SA1 11004120114 (adjacent to Project Area to the West).</li> </ul>

Component	Description
Transportation and haulage routes	The proposed transport access routes associated with the Project, are detailed in <b>Section 3.5.6.</b>
Surrounding towns and regional centres	Surrounding towns/regional centres that may provide goods and services to support construction are as follows: <ul style="list-style-type: none"> <li>• Tamworth Significant Urban Area (SUA);</li> <li>• Werris Creek Urban Centres and Localities (UCL);</li> <li>• Wallabadah UCL;</li> <li>• Nundle UCL; and</li> <li>• Quirindi UCL.</li> </ul>



### 6.17.1.2 STAKEHOLDER ENGAGEMENT

**Section 5** and **Appendix D** provide an overview of the engagement activities carried out before and during the preparation of the EIS. They also identify indicative community engagement planned in the future, including tools and practices, should the Project be approved.

### 6.17.1.3 SOCIAL BASELINE

Social baseline has been established through a detailed analysis of demographic profiles, economic activities, housing conditions and community well-being, within the Social Locality. Mapping these baseline conditions enable potential vulnerabilities and opportunities to be identified, ensuring that Project decision making is well-targeted and that any mitigation strategies are effectively tailored to the specific needs of the community.

The full social baseline is provided in **Appendix T**, with a summary provided in **Table 6-51**.

**TABLE 6-51 SOCIAL BASELINE SUMMARY**

Themes	Key Findings
Land use context	The site setting and surrounds have been detailed in <b>Table 2-3</b> .
Population demographics	<p>Contrasting population trends were displayed across the Social Locality, with some areas experiencing moderate growth whilst others display population stagnation or steady decline.</p> <p>The median age across the Social Locality (excluding Tamworth SUA) remains consistently higher than the NSW average, indicating an older demographic.</p>
Economic profile	The Social Locality has a mixed economic composition with strong employment in public and social Services, and negligible industrial and construction activities. This suggests economic vulnerability and a need for economic diversification.
Vulnerable groups	<ul style="list-style-type: none"> <li>Cultural and linguistical diversity (CALD) in Tamworth Regional LGA and Liverpool Plains LGA is significantly lower than the NSW and national average;</li> <li>A greater proportion of the population in the Social Locality are categorised as elderly (&gt;65 years old) or youth (&lt;14 years old), compared to NSW averages;</li> <li>The Social Locality's proportion of First Nations people is generally higher than that of NSW. The median age of First Nations people within the Social Locality tends to be lower than that of the general population; and</li> <li>Overall, the Socio-Economic Indexes for Areas (SEIFA) scores for the Social Locality indicate declining socio-economic conditions and increased disadvantages over time.</li> </ul>
Housing and accommodation	<ul style="list-style-type: none"> <li>Household income is increasing across the Social Locality, however it is consistently below the NSW average (excluding SA1 11004120114 and SA1 11004120116);</li> <li>Housing stress has significantly increased over time at all locations apart from the three SA1s;</li> <li>Unemployment rate in the Social Locality tends to be higher than the NSW average;</li> <li>The percentage of houses owned outright is significantly higher than NSW at all locations except Tamworth SUA;</li> <li>Median property prices are significantly lower than NSW median prices;</li> </ul>

Themes	Key Findings
	<ul style="list-style-type: none"> <li>Housing vacancy in major UCLs and towns ranges from 0.3% - 1.7%, with Tamworth having a rate of 1.4%;</li> <li>Long term housing availability is approximately 154 properties (470 rooms); and</li> <li>There are approximately 36 short term accommodation options in the Social Locality, with Tamworth offering 88% of the rooms.</li> </ul>
Social Infrastructure and Community Wellbeing	Tamworth is likely to provide social infrastructure for the Project due to its size, proximity and connectivity via the New England Highway. This location provides the widest range of community, public health and education services.
Access and Connectivity	<ul style="list-style-type: none"> <li>The Project is to be accessed via Garoo Road;</li> <li>Heavy vehicles are restricted from accessing the site from the north, but light vehicles may still use this route (refer <b>Section 6.9.1.3</b>); and</li> <li>The Project Area is not serviced by public transport, but two privately operated school buses services run in the area.</li> </ul>
Aboriginal Cultural Heritage	<ul style="list-style-type: none"> <li>The traditional custodians of the land, the Kamilaroi people, have a strong cultural legacy within the region; and</li> <li>A total of 13 Aboriginal Sites were identified within the Project Area, which have all been avoided through project design.</li> </ul>
Community Values	<ul style="list-style-type: none"> <li>The Social Locality hosts a diverse range of events and activities, including agricultural shows, music festivals, gardening events, food festivals, car exhibitions and cultural celebrations; and</li> <li>The annual Tamworth Country Music Festival attracts up to 300,000 visitors over a 10-day period.</li> </ul>

### 6.17.2 IMPACT ASSESSMENT

The key drivers of social change resulting from the Project, that may affect communities in the Social Locality include:

- Procurement opportunities for local/regional Businesses and employment opportunities for the local workforce;
- Disruptions due to construction related activities (noise, dust, transportation of materials and workers, etc.); and
- Amenity (noise, visual) and other land use and landscape changes due to altered landscapes.

In assessing the potential impacts, the following has been considered:

- Characteristics of the Project, including the timing, duration and intensity of activities (where known);
- Issues raised by stakeholders during the engagement process; and
- Outcomes from technical studies undertaken by the Project (noise, visual, cultural heritage etc.).

The impacts have been assessed based on the likelihood of the impact occurring, the magnitude of the impact (degree of change caused by the impact) if it occurs and the vulnerability of the impacted receptors. A summary of impact issues is included in **Table 6-52**.

TABLE 6-52 SOCIAL IMPACT ISSUES

Impact Issue	Directly Affected Stakeholders	Project Phase	Impact (pre-mitigation/enhancement)		
			Magnitude	Likelihood	Significance
<b>Stakeholders and Community</b>					
Insufficient or ineffective stakeholder engagement	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Local community;</li> <li>Wider community;</li> <li>Local businesses; and</li> <li>Aboriginal Communities.</li> </ul>	Construction	Major	Possible	High
		Operation	Moderate	Unlikely	Medium
<b>Employment and Procurement</b>					
Increased direct and indirect employment opportunities	<ul style="list-style-type: none"> <li>Local community; and</li> <li>Local businesses.</li> </ul>	Construction	Moderate	Likely	Medium
		Operation	Minor	Possible	Low
Increased local procurement opportunities	<ul style="list-style-type: none"> <li>Local community; and</li> <li>Local businesses.</li> </ul>	Construction	Moderate	Possible	Medium
		Operation	Minor	Possible	Low
Potential to create skills shortages	<ul style="list-style-type: none"> <li>Local community; and</li> <li>Local businesses.</li> </ul>	Construction	Moderate	Possible	Medium
<b>Local Disruptions</b>					
Changes in social amenity	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Moderate	Likely	High
		Operation	Moderate	Possible	Medium
Traffic congestion, community safety and deterioration of road surface conditions	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Local community;</li> <li>Wider community; and</li> <li>Visitors.</li> </ul>	Construction	Major	Possible	High

Impact Issue	Directly Affected Stakeholders	Project Phase	Impact (pre-mitigation/enhancement)		
			Magnitude	Likelihood	Significance
Perceived health impacts	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Aboriginal Communities;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Moderate	Possible	Medium
		Operation	Moderate	Unlikely	Medium
Impacts on the environment and biodiversity	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Moderate	Likely	High
		Operation	Minor	Possible	Medium
Disruption to farming practices	<ul style="list-style-type: none"> <li>Host landowner.</li> </ul>	Construction	Moderate	Likely	High
Potential for reduced community cohesion	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Aboriginal Communities;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Major	Possible	High
		Operation	Moderate	Unlikely	Medium
<b>Accommodation and Worker Influx</b>					
Increased demand for short- and long-term accommodation	<ul style="list-style-type: none"> <li>Local/Regional Businesses;</li> <li>Visitors;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Likely	Major	High
Increased demand for services and recreational facilities	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Aboriginal Communities;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Major	Possible	High
<b>Land Use and Landscape</b>					
Perceived impacts on land values	<ul style="list-style-type: none"> <li>Project neighbours;</li> <li>Local community; and</li> <li>Wider community.</li> </ul>	Construction	Moderate	Possible	Medium
		Operation	Minor	Possible	Medium
		Construction	Moderate	Possible	Medium

Impact Issue	Directly Affected Stakeholders	Project Phase	Impact (pre-mitigation/enhancement)		
			Magnitude	Likelihood	Significance
Altered rural character (visual amenity)	<ul style="list-style-type: none"> <li>• Project neighbours;</li> <li>• Aboriginal Communities;</li> <li>• Local community; and</li> <li>• Wider community.</li> </ul>	Operation	Minor	Possible	<b>Medium</b>
Potential impact on tangible and intangible Aboriginal cultural heritage	<ul style="list-style-type: none"> <li>• Aboriginal Communities.</li> </ul>	Construction	Major	Possible	<b>High</b>
		Operation	Moderate	Unlikely	<b>Medium</b>

### 6.17.3 MITIGATION AND MANAGEMENT

A range of social management and mitigation measures to be adopted for the Project are summarised in **Table 6-53**. Many social issues will be mitigated by measures implemented for other impact areas, such as traffic, visual, noise, economics, biodiversity and heritage.

**TABLE 6-53 SOCIAL MITIGATION AND MANAGEMENT MEASURES**

ID	Mitigation and Management Measures	Phase
SO1	Implement Benefit Sharing Scheme / Community Benefit Fund	Detailed Design
SO2	Establish and implement the following plans: <ul style="list-style-type: none"> <li>Stakeholder Engagement Plan;</li> <li>Workforce Accommodation Management Plan;</li> <li>Local Employment Plan;</li> <li>Cultural Heritage Management Plan;</li> <li>Decommissioning Rehabilitation Plan;</li> <li>TMP;</li> <li>CEMP; and</li> <li>OEMP.</li> </ul>	All phases
SO3	Continued engagement with the stakeholders to address any relevant matters, including: <ul style="list-style-type: none"> <li>Tamworth Regional Council;</li> <li>Health and emergency services;</li> <li>Surrounding SSD proponents;</li> <li>Aboriginal groups; and</li> <li>Local community.</li> </ul>	All phases
SO4	Establish a grievance mechanism for stakeholder complaints.	All phases
SO5	Implement proposed monitoring activities in the Environmental Management System (EMS) including: <ul style="list-style-type: none"> <li>Record queries and complaints received from stakeholders;</li> <li>Record measures to maximise local employment;</li> <li>Record measures to maximise local procurement;</li> <li>Record queries and complaints received from businesses;</li> <li>Record measures to maximise local employment and minimise potential impacts on accommodation availability, community and emergency services, and community wellbeing;</li> <li>Monitor short-term accommodation rates annually;</li> <li>Record measures to quantify perceived impacts to land values;</li> <li>Record measures to minimise impacts to visual amenity and rural character;</li> <li>Record measures to define impact on tangible and intangible Aboriginal Cultural Heritage;</li> <li>Record measures to consider intergenerational equity and waste management;</li> <li>Record measures to assess impacts on short-term increase in employment and procurement opportunities;</li> <li>Monitor the number of retrenched workers;</li> <li>Record measures that report traffic congestion, community safety concerns, and deterioration of road surface conditions; and</li> <li>Record measures to assess cumulative impacts.</li> </ul>	Construction and Operation
SO6	Construct Workforce Accommodation Camp within the Project Area to reduce housing pressures during construction phase.	

## 6.18 CUMULATIVE IMPACTS

The CIA Guidelines require the consideration of impacts from the Project in combination with other past, present and reasonably foreseeable future SSDs (NSW DPIE, 2022b).

The CIA Guidelines state that the assessment should focus on the key matters that are within the immediate geographical area of influence of the Project (e.g., within proximity to the Project area) and within the relevant strategic context. As such, the Project has only considered the types of development specified in Section 3.4 of the CIA Guidelines.

This section draws on the relevant aspect-specific assessments undertaken as part of the preparation of this EIS, which have identified and addressed potential cumulative impacts related to that aspect.

The CIA Guidelines state that the CIA is to focus on the key matters that could be materially affected by the cumulative impacts of the Project and other relevant future developments. As such, an assessment of the potential cumulative impacts to aspects including biodiversity, historic heritage, water, bushfire, air quality and waste has not been undertaken as it is considered that these potential impacts are primarily confined to the Project Area and are negligible in the broader context.

Relevant proposed, approved, under construction and operational SSDs known at the time of finalisation of this EIS, and within the vicinity of Project, are detailed in **Table 2-4** and **Figure 2-5**. The cumulative impacts are summarised in **Section 6.18.1**.

### 6.18.1 CUMULATIVE IMPACT SUMMARY

Potential cumulative impacts associated with the Project have been addressed in relevant technical assessments and the relevant findings summarised in this EIS. No cumulative impacts are anticipated for the following:

- Aquatic ecology;
- Aboriginal and historical heritage;
- Landscape and visual (including glint and glare);
- Air quality; and
- Waste management.

#### 6.18.1.1 BIODIVERSITY

A large portion of surrounding developments are in the planning phase, and as such the level of direct impacts to native vegetation, TECs, and threatened and migratory listed species is unknown. However, it is considered likely that cumulative impacts will increase the loss of similar native vegetation and threatened species habitat in the region.

The two currently approved renewable energy projects will impact approximately 421.70 ha of similar native vegetation and habitats, and will impact foraging habitat of predicted species that are also predicted to occur on the Subject Land. Given this, the loss of 1.68 ha of native vegetation associated with this development is considered minor in relation to the clearing extents of similar approved projects.

The potential cumulative impacts include:

- Disturbance and / or clearing of native vegetation, hollow bearing trees, key habitats, and TECs;
- Impacts to threatened species, including birds, bats and aboreal populations
- Noise;
- Reduced habitat connectivity; and
- Spread of weeds, non-natives and pathogens.

#### 6.18.1.2 NOISE

The NIA (**Appendix J**) identified that the nearest noise generating developments with the potential to have a cumulative impact with the project on sensitive receivers includes:

- Middlebrook Solare Farm and BESS; and
- Lambruk Solar Farm.

Noise impacts assessments for these developments are under preparation (at time of writing, June 2025). It is expected these Projects will be assessed in accordance with the NPI, and are expected to achieve the NPI project amenity noise levels to address cumulative noise impacts. Therefore, contribution to cumulative noise is assumed to be insignificant at the closest noise sensitive receivers to this Project.

The assessment is recommended to be reviewed when the predicted operational noise levels for the nearest developments are available.

#### 6.18.1.3 LAND AND AGRICULTURE

The LAIA (refer **Appendix M**) determined that potential cumulative impacts are predominantly associated with the loss of agricultural land and the loss of agricultural productivity.

The relative loss of agricultural productivity against the total regional agricultural productivity, as well as land used for agricultural purpose, is negligible. Impacts of the remaining renewable developments are also considered likely to be low, given the small footprint of the proposed developments within the context of the wider regional area. The applicability of agrisolar also reduces the cumulative impacts.

Therefore, given the nature and scale of the agricultural industries within the region, there are not considered to be any significant cumulative impacts arising from the Project.

#### 6.18.1.4 WATER RESOURCES, HYDROLOGY AND FLOODING

The key common surface water receptor considered in the WRIA (refer **Appendix O**) is the Peel River due to its connection to the Project via the Goonoo Goonoo Creek, which is fed by Tamarang Creek and Sugarloaf Creek.

No direct interactions with the Peel River and the Project are expected and adopting appropriate mitigation and management will prevent indirect impacts. Therefore, cumulative impacts to surface water quality, flooding and flow are considered negligible.

Water supply will be imported to the site, and any additional supply will be in accordance with NSW licensing requirements and landholder rights. Therefore, cumulative impacts to surface water and groundwater supply are also considered negligible.

### 6.18.1.5 TRANSPORT AND TRAFFIC

The TIA (**Appendix P**) identifies a total of six SSD projects may generate cumulative impacts, due to additional vehicle movements at the four key intersections during Project construction:

- Hills of Gold Wind Farm;
- Middlebrook Solar Farm;
- Willow Tree Gravel Expansion;
- Lambruk Solar Farm; and
- Calala BESS.

The construction periods of these projects could overlap with the construction of this Project. This may result in vehicle conflicts, due to shared transport and commuter routes. However, these are anticipated to have a minimal cumulative impact on the operation of the road network.

### 6.18.1.6 BUSHFIRE

The proximity of multiple construction and / or operational projects provides an opportunity for potential cumulative impacts. The cumulative impacts related to bushfire mitigation are as follows:

- Volunteer fire-fighter workload – Response call outs should not significantly increase because the ignition risk will be very low. There will, however, be an ongoing requirement for briefing on the Emergency Management and Operations Plan;
- Construction stage transport and road use – The bushfire mitigation will add a small percentage to the total construction traffic and road use; and
- Ongoing operations – there would not be any cumulative operational impacts although it is noted that the proximity of multiple construction and/or operational projects may exceed the current capacity of local firefighting resources. This will need to be addressed in consultation with NSW RFS.

The proximity of multiple projects actively managing fire risk could assist in management responses and may create a positive cumulative impact, in comparison with existing conditions.

### 6.18.1.7 ECONOMIC

The economic cumulative impact assessment approach involves considering the impacts of the Project together with the impacts of other relevant future projects on economic activity. The identified impacts are limited to the construction phase and include:

- Insufficient labour force to meet demand for construction workers. This may negatively impact the labour landscape but could also trigger wage increases. Developers may adopt a combination of localised labour hiring, training and drive-out /fly-in fly-out approaches, which may alleviate some negative impacts;
- Potential to boost local and regional economic growth, due to an increased resident population and reduced unemployment levels. However, this could result in the erosion in the quality of services and increased living costs for residents;
- Potential to increase pressure on the rental market, which may result in increased rents and crowding out of lower income tenants; and

- Potential to increase demand and process for goods and services. However, price pressures may be spread across the broader region and supply will likely react to meet demand. As such, price pressures are anticipated to be temporary.

The cumulative impact of multiple projects in the region will see the magnification of impacts addressed in the EIA (refer **Appendix S**) and competition for resources.

#### 6.18.1.8 SOCIAL

Cumulative social impacts arising from the accumulation of projects in the wider New England REZ, including the Social Locality, are a possibility as the NSW Government pursues a large-scale transition to renewable energy sources. At least six developments have been identified as having relevant cumulative impacts:

- Middlebrook Solar Farm and BESS;
- Lambruk Solar Farm;
- Hills of Gold Wind Farm;
- Kingswood BESS, Calala BESS; and
- Tamworth BESS.

Together, these projects would require at least 881 construction workers during their construction periods. It should be noted that this number may increase, depending on timelines and updated workforce data.

Social cumulative impacts may include:

- Increased employment and procurement opportunities, which may drive population and economic growth in the social locality. However, the size, competition and demand of the developments may reduce ability to work on smaller-scale projects, consequently neglecting local community members;
- Increased demand on recreational, health, and educational services, and increased demand and cost of goods within the Social Locality. However, the geographical interconnectedness of the region, and supplier response to growing demands should alleviate some of these impacts, resulting in them being temporary; and
- Increased pressure on short and long-term accommodation markets in the Social Locality, and associated impacts on housing and rent prices.

## 7. PROJECT JUSTIFICATION

### 7.1 PROJECT DESIGN EVOLUTION

During the preparation of the EIS, the Project has been subject to an ongoing iterative design and siting process, with the objective of developing an efficient Project that avoids and minimises environmental and social impacts. The final Project layout for which approval is sought has considered all identified environmental risks and comments made in the comprehensive stakeholder engagement process.

A range of alternative Project designs were considered to avoid potential environmental and social impacts, as detailed in **Section 2.8**. As such, the irregular shape of the Project area and Development Footprint is a result of avoidance of identified impacts such as:

- Aboriginal sites (refer **Section 6.1.2.5**);
- Watercourses and key aquatic and riparian habitats;
- Farm dams, which are to be retained to support co-grazing;
- Areas of biodiversity significance and native vegetation, including the PCTs and TECs; and
- Removal of solar arrays to avoid glint and glare impacts to sensitive visual receptors.

Where the potential for impacts could not be avoided, design principles were sought to minimise environmental impacts and / or mitigation measures were proposed to manage the extent and severity of any residual impacts. The proposed mitigation and management measures that will be implemented for each environmental aspect assessed in this EIS are summarised in **Appendix B**.

During detailed design and prior to construction, it is expected that the placement of infrastructure and extent of construction activities will be further refined to provide additional avoidance and to ensure the minimisation of environmental impacts.

### 7.2 CONSISTENCY WITH STRATEGIC CONTEXT

**Section 2** of this EIS provides an overview of the key strategic goals and government commitments, as well as regional and local plans that are relevant to the Project.

Broadly, the Project will be consistent with the strategic aims of the documents described in **Section 2** through:

- Providing an additional source of renewable energy generation, supporting Australia's transition away from fossil fuel energy production;
- Improving the reliability of the NEM by providing energy storage and dispatching energy during peak times;
- Contributing the growth of renewable energy storage and generation in NSW;
- Generating employment opportunities and the promotion of local economic stimulus through the facilitation of 250 full time jobs and at least an additional 137 indirect jobs during construction of the Project;
- Providing ongoing benefit through the VPA that is to be implemented for the lifetime of the Project. This VPA will support the regional community through meaningful community development; and

- Mitigating and avoiding adverse environmental impacts as a result of the Project and aligning with the principles of ecologically sustainable development.

The Project's alignment with the relevant objectives of the objectives of regional and local strategies, policies and plans is summarised in **Table 7-1**.

TABLE 7-1 ALIGNMENT WITH REGIONAL AND LOCAL OBJECTIVES

Objective/Theme	Project Response
<b><i>New England North West Regional Plan 2041</i></b>	
<i>Objective 1: Coordinate land use planning for future growth, community need and regional economic development</i>	The Project will provide direct investment and align with planned economic growth, needs and opportunities within the region. It would also create construction and operational employment opportunities and develop new skilled labour within the growing renewable energy industry.
<i>Objective 2: Protect viability and integrity of rural land</i>	Agrisolar practice will enable the continued use of the Project Area for grazing, preventing fragmentation of agricultural land in the region and maintaining capacity for sustainable productive agriculture.
<i>Objective 8: Adapt to climate change and natural hazards and increase climate resilience</i>	The Project will provide a diversified stream of income for the host landowners, which can be utilised to help make agricultural land more resilient to the impacts of natural hazards (fires, droughts) and commodity price fluctuations. The Project would also increase renewable energy generation, which would assist in displacing carbon intensive or fossil fuel intensive options and contribute to the NSW emission reduction and Net Zero targets.
<i>Objective 9: Lead renewable energy technology and investment</i>	The Regional Plan aims to leverage renewable energy opportunities as a key growth opportunity in the region. The Project will provide a low emission, sustainable and cost-effective electricity generation source that will increase energy diversity and security and support the increased prosperity and resilience in the LGA and beyond.
<i>Objective 10: Support a circular economy</i>	The Project supports a circular economy by utilising renewable resources to generate clean energy, reducing reliance on finite materials, minimising waste and emissions, and enabling sustainable energy systems that can be integrated with recycling and reuse practices throughout their lifecycle.
<b><i>Tamworth Regional Blueprint 100 – Part 1</i></b>	
<i>Theme 3: Create a prosperous region</i>	The Project will provide direct investment into the region, which will help stimulate economic growth and opportunities. It would also create construction and operational employment opportunities, which will attract businesses and develop skilled labour within the growing renewable energy industry.
<i>Theme 6: Design with nature</i>	The Project aligns Tamworth Regional Council’s priority to support appropriately located renewable energy production opportunities and battery storage facilities, promoting increased energy efficiency and renewable energy usage.
<i>Theme 8: Strengthen our proud identity</i>	Tamworth Regional Council has prioritised broadening the narrative of the ‘Tamworth brand’ to celebrate innovation in the region. This includes promoting the regions strong reputation for solar and renewable energy, widening its appeal and pathways for future investment. The Project aligns with this theme,

Objective/Theme	Project Response
	providing direct investment into clean energy generation, further demonstrating that the Tamworth region is a leader within the renewable energy sector.
<b>Tamworth Regional Blueprint 100 – Part 2 (LSPS)</b>	
<i>Theme 2: Create a prosperous region</i>	The Project will provide direct investment into the region, which will help stimulate economic growth and opportunities. It would also create construction and operational employment opportunities, which will attract businesses and develop skilled labour within the growing renewable energy industry.
<i>Theme 5: Design with nature</i>	The Project supports Tamworth Regional Council’s vision for sustainable economic development by providing direct investment into the region, improving energy efficiency and helping to achieve environment targets. The Project aligns with Action DN6, providing Council with an opportunity to support renewable energy initiatives.
<i>Theme 6: Celebrate culture and heritage</i>	The CBF will allocate funds to support a range of community focused programs, including cultural activities such as festivals.
<b>Tamworth Regional Blueprint 100 – Our Community Plan</b>	
<i>Focus Area 3: Prosperity and Innovation</i>	The Project reflects new investment and a means to diversify the energy industries in the region. This will drive economic growth, creating employment and skill development opportunities and will attract a diverse and multi-skilled workforce.
<i>Focus Area 4: Resilient and diverse communities</i>	The Project diversifies energy generation and provision, providing increased resilience and reliability. It also provides economic growth and employment opportunities, which will help local communities grow and prosper.
<i>Focus Area 6: Working with and Protecting our Environment</i>	The Project aligns with key priorities, by providing renewable energy generation and storage capacity, promoting the increased accessibility to clean energy in the region. The Project will also contribute to greater energy resilience, efficiency and capacity, which together with other renewable generation projects, is expected to result in the lower cost of energy in the NEM.
<b>Tamworth Regional Council Our Sustainability Strategy and Action Plan 2022-2026</b>	
<i>Theme E2: Reduce Tamworth Regional Council’s carbon emissions from energy use</i>	The Project would replace fossil-fuel energy generation, providing an estimated reduction in GHG emissions of approximately 270,000 t CO <sub>2</sub> -e pa.
<i>Theme E4: Guide land use planning to encourage an increase in renewables</i>	The proposed renewable solar energy and BESS development would increase the renewable generation in the region and assist with replacing fossil fuel energy sources. The project’s co-use of sheep grazing within the solar farm will also sustain the property’s agricultural history.

Objective/Theme	Project Response
<i>Theme CE2: Attract sustainable and alternative events and business opportunities to Tamworth Regional LGA, including in the villages and regions</i>	The Project will provide direct investment into the region, which will help stimulate economic growth and opportunities. It would also create construction and operational employment opportunities, which will attract businesses and develop skilled labour within the growing renewable energy industry.
<i>Theme CC1: Monitor and reduce the Tamworth Regional LGA's carbon emissions - aiming to achieve net zero emissions by 2050</i>	The Project would displace fossil-fuel energy generation, helping to achieve the Net Zero commitments of by providing an estimated reduction in GHG emissions of approximately 270,000 t CO <sub>2</sub> -e pa.
<i>Theme CC4: Encourage new and sustainable businesses and industries to locate to the Tamworth Regional LGA</i>	The Project will provide direct investment into the region, which will help stimulate economic growth and opportunities. It would also create construction and operational employment opportunities, which will attract businesses and develop skilled labour within the growing renewable energy industry.

### 7.3 COMPLIANCE WITH THE RELEVANT STATUTORY CONTEXT

As discussed in **Section 2.2** of this EIS, the Project will support the Australian and State governments strategies, plans and policies to achieve their respective renewable energy and GHG reduction targets.

The development of a solar farm and ancillary infrastructure does not present any conflicts with current or potential future land uses within the vicinity of the site. The Project area is zoned RU1 (Primary Production), and is currently used for grazing. Solar farms and agricultural production can co-exist, and it is the intent of the Applicant that the majority Project area will remain available for grazing during operation.

The Project is also consistent with several regional community goals, as detailed in **Section 2.4** and **Section 7.2**.

The permissibility of the Project has been described in **Section 4.2**, and the compliance of the Project with other approvals, as well as mandatory matters for consideration are outlined in **Sections 4.3** to **Section 4.5**, **Section 6** and **Appendix A**. An assessment of the consistency of the Project with the objectives of the EP&A Act, pursuant to Section 1.3 is provided in **Appendix C**.

Through the adoption of management and mitigation measures described throughout **Section 6** and compiled in **Appendix B**, and appropriate design and site selection, the Project complies with all statutory requirements.

### 7.4 COMMUNITY VIEWS

Engagement activities encompassed a range of stakeholders, including NSW and Australian Government agencies, the nearby community and various community groups, Aboriginal groups, proximate landowners and infrastructure owners. All stakeholders are described in **Section 5**.

A significant number of engagement activities were conducted throughout the development of the scoping phase and EIS, to discuss the Project with the community and to build an understanding of potential concerns, opportunities and mitigation strategies. These engagement activities included community drop-in sessions, one-on-one meetings, phone and email interactions, community events, community surveys, creation of a Project website, newsletters, flyers, letters, factsheets, briefings, media releases, social media and site visits.

Feedback from the community included both positive and negative views on a range of aspects of the Project. Overall, the Project is supported by Council, the Traditional Owners and the wider community, who have recognised the benefits of the Project in aiding Australia's transition to renewable energy and providing tangible and durable financial benefits to the community through the CBF. During engagement activities, key issues raised included the impacts of the Project on the environment, community and economic health of the area.

The Applicant will continue to work with the community to address real and perceived impacts as a result of the Project through the ongoing engagement and complaints management detailed in **Section 5**.

## 7.5 SCALE AND NATURE OF IMPACTS

The Project will primarily be developed on land which has been modified following a long history of vegetation clearing and livestock grazing. The Project layout has been designed to maximise the use of existing disturbed areas and to avoid and/or minimise impacts to identified biodiversity and Aboriginal sites and surrounding receivers. Progressive design iterations for the solar farm, BESS and associated infrastructure have continued throughout the development of the EIS, with key drivers being measures to avoid and minimise environmental and social impacts in line with the Avoid-Minimise-Mitigate-Offset design hierarchy.

### 7.5.1 ENVIRONMENTAL IMPACTS

This EIS and supporting technical assessments have considered the potential for environmental impacts as a result of the Project. Each assessment has identified the potential impacts to the specific environmental aspects of the project and outlined measures to mitigate and avoid potential impacts. These are detailed in **Section 6**. Additionally, **Appendix B** summarises all measures proposed in this EIS to mitigate, avoid and offset the potential environmental impacts during each stage of the Project.

Prior to the commencement of each phase of development (construction, operation and decommissioning) environmental management plans, procedures and requirements will be developed to ensure that environmental impacts are mitigated throughout the lifetime of the Project.

### 7.5.2 SOCIAL IMPACTS

The Project will provide a diversified income stream for rural landowners through lease payments to the host landowner. The income provided to the landowner hosting the Project infrastructure can help to make the farm more resilient to the impacts of droughts, fires and commodity price fluctuations.

The Applicant has developed a model for community benefits sharing with the local Council. The community benefits will be equivalent to \$850/MW per annum (NSW DPFI, 2024e) and will be secured through a VPA with Council and/or a CBF administered by the Applicant and local council. Funds will be awarded to local projects and programs that are successful in the applications/proposal process. The benefit sharing scheme is outlined in **Section 2.7.2**.

While the Project has the potential to generate environmental and social impacts, it is considered that these can be appropriately managed with the implementation of the mitigation and management measures, as summarised in **Appendix B**. These measures will also address community concerns and associated social impacts identified during the stakeholder engagement process.

Further, during construction, the Applicant will work with contractors, local communities, neighbours and Council, to plan and manage construction to minimise disturbance as far as possible. Construction management will include:

- Regular and ongoing communication with the community;
- Working during standard construction hours, or as defined in **Section 3.5.2**;
- A rigorous safety culture; and
- Environmental monitoring.

Given the net benefit and commitment from the Applicant to appropriately manage the potential environmental impacts associated with the Project, it is considered the Project would result in a net benefit to the Tamworth Regional LGA, the New England North West region and the broader NSW community.

### 7.5.3 ECONOMIC IMPACTS

The Project is justified economically due to the economic stimulus and benefits it will provide to the region, which includes but is not limited to the Tamworth Regional LGA and, more broadly, the state of NSW.

During construction (estimated at 18 months) the Project will generate 180 FTE jobs (250 FTE during peak periods) and the impacts on the regional economy are estimated at up to \$428 M in direct and indirect output, \$139 M in direct and indirect value added, \$35 M in direct and indirect household income and an average of 247 direct and indirect jobs. Further, the construction impacts of the Project on the NSW economy are estimated at up to \$489 M in direct and indirect output, \$168 M in direct and indirect value added, \$40 M in direct and indirect household income, and 279 direct and indirect jobs. The Project will create demand for regional labour resources and regional inputs to production.

During operations, the Project will create a total annual contribution to the regional economy of \$163 M in direct and indirect output, \$35 M in direct and indirect value added, \$3 M in direct and indirect household income, and 14 direct and indirect jobs. In the NSW economy, the Project is estimated to make a total annual contribution of \$185 M in direct and indirect output, \$42 M in direct and indirect value added, \$3 M in direct and indirect household income, and 16 direct and indirect jobs. Demand for regional labour resources and regional inputs to production will be created in smaller rates during operations.

The Project would require inputs during its construction and operation for maintenance activities and products and services required by the Project's workforce. Businesses that can provide the inputs would directly benefit from the Project by way of an increased economic activity. However, because of the inter-linkages between sectors, many indirect businesses will also economically benefit from the Project.

The employment and economic opportunities created by the Project have been supported by the community during engagement and consultation activities described in **Section 5**.

The potential cumulative impacts of the Project and nearby SSDs on the economy activity are generally positive. These are associated with the demand for construction workforce, as described in **Section 6.18**.

## 7.6 COMPLIANCE AND MONITORING

An EMS will be developed to provide the overall framework for environmental management during the construction, operation, decommissioning and rehabilitation of the Project, to ensure that appropriate measures and processes are in place to manage identified environmental risks and provide for ongoing continual improvement. The EMS will incorporate mitigation measures that have been identified throughout this EIS and associated technical assessments and will include all relevant management plans.

**Appendix B** provides a summary of the environmental management commitments of the Project, which will be implemented to avoid, minimise and where necessary, offset the potential environmental impacts associated with the Project.

Prior to the commencement of construction, detailed design and layout plans will be finalised. Environmental mitigation and management measures outlined in the EMS and the associated environmental management plans will be prepared and submitted as required by the conditions of development consent.

## 7.7 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

### 7.7.1 THE PRECAUTIONARY PRINCIPLE

The environmental impacts of the Project have been carefully evaluated in this EIS and where practicable they have been avoided, mitigated, managed or offset. Various options have been considered for the solar farm, BESS and associated infrastructure having regard to environmental risks. Ultimately, options with lower environmental impacts and risks have been selected to avoid and minimise potential biodiversity and heritage impacts.

The site suitability and Project alternatives selection process, as detailed in **Section 2.8** of this EIS, have thoroughly considered and sought to minimise the likely impacts to the local environment. Where uncertainty exists, measures have been suggested to address the uncertainty.

Management measures have been proposed for all significant environmental impacts. As such, it is considered that the Project poses no threat of serious or irreversible damage to the environment.

### 7.7.2 INTER-GENERATIONAL EQUITY

The Project will contribute to inter-generational equity by maintaining and promoting agricultural diversity that builds resilience into regional and rural community economies' and which helps these communities thrive. The Project will implement agri-solar activities, which provides the potential for climate-change resilience by creating a more favourable growing environment and curbing some of those extreme conditions as a result of drought conditions. Further, the additional income provided to landowners through the host landowner agreement will help the farm become more resilient to the impacts of climate change.

Other environmental benefits associated with the Project include a reduction in air pollutant emissions and water consumption, as solar power generation has significantly lower environmental impacts compared to traditional coal-fired power stations. Following decommissioning, the Project area will be rehabilitated and made suitable for continued agricultural activities, or renewable energy generation, both of which would provide benefits for future generations.

### 7.7.3 CONSERVATION OF BIOLOGICAL DIVERSITY AND ECOLOGICAL INTEGRITY

Locating the majority of the Project on Category 1 land contributes to the conservation of biodiversity, which has been a fundamental consideration throughout Project development. Extensive desktop and field assessment has been undertaken to understand the anticipated biodiversity impacts.

The findings of the biodiversity assessment have informed an ongoing iterative design for the layout of the Project and siting of solar panels and other key infrastructure.

Impacts to biodiversity will be avoided, mitigated and offset where necessary to ensure that there is no net loss in biological diversity and that ecological integrity is maintained. This is detailed in **Section 6.1**.

#### 7.7.4 SOCIAL AND ECONOMIC BENEFITS

The Project enables the utilisation of a valuable resource, solar energy, which is otherwise lost if the Project does not proceed. The Project further contributes to the transition from fossil fuel generation sources. The Project will reduce the air, water and land pollution produced by coal-fired power stations, which currently bear none of the external costs of such pollution.

The potential environmental consequences of the Project and all mitigation measures have been considered and identified in **Section 6** of this EIS.

Project benefits are considered to outweigh the costs. The Project will generate up to 250 FTE jobs during peak construction and 5-10 FTE jobs during operations and will provide economic benefits to the local community. It will also provide tangible and durable financial benefits to the community through the CBF.

### 7.8 CONCLUSION

The Project involves the construction, operation and where relevant decommissioning of a PV solar facility with a generating capacity of up to 133.76 MW, 360 MW / 1,440 MWh BESS, and associated infrastructure. The Project will contribute significantly to reducing carbon emissions and human induced climate change as part of the necessary and ongoing clean energy transition from fossil fuels.

The Project has been carefully designed and sited to minimise environmental impacts in consultation with the local community and relevant stakeholders. The residual environmental and social impacts identified throughout this EIS and supporting technical assessments will be managed through the mitigation and management measures summarised in **Section 6** and **Appendix B**.

The Project will not result in significant impacts on the environment, or the local community and these impacts will be significantly outweighed by the strong strategic and economic benefits which the Project will deliver. The Project will:

- Assist the Federal and NSW Governments to fulfil their targets and policies to increase renewable energy supply and reduce carbon emissions;
- Assist in meeting energy demand as part of the market transition from traditional energy sources; and
- Deliver economic benefits to regional and local communities.

The Project represents a positive addition to the local and wider NSW economy and the NEM. Through the implementation of proposed mitigation and management measures, it is considered that this Project is consistent with the objects of the EP&A Act and is in the public interest.

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APPENDIX A

REGULATORY REQUIREMENTS AND  
WHERE ADDRESSED

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
General Requirements	The Environmental Impact Statement (EIS) for the development must comply with the requirements in Part 8, of the <i>Environmental Planning and Assessment Regulation 2021</i> (the Regulation) and must have regard to the <i>State Significant Development Guidelines</i> , the <i>Renewable Energy Planning Framework</i> and any relevant planning circulars.	This EIS
	The EIS must include a standalone executive summary.	Executive Summary
	<p>A full description of the development, including:</p> <ul style="list-style-type: none"> <li>• Details of construction, operation and decommissioning, including any staging of the development;</li> <li>• A high-quality site plan at an adequate scale showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process);</li> <li>• The Project Area (as per Table 1 of the <i>SSD guidelines – preparing an environmental impact statement</i>) and Development Footprint (disturbance area including but not limited to areas for infrastructure, road works, access tracks, defensible space, fencing and temporary laydown);</li> <li>• A high-quality detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development; and</li> <li>• Confirmation if the project is designated development in accordance with the <i>Environmental Planning and Assessment Act 1979</i> (EP&amp;A Act) and the Regulation.</li> </ul>	Section 3
	There must be consistency in information presented in the EIS and all technical reports, including distances, development footprint, project design and infrastructure proposed, construction timeframes and receiver numbers.	This EIS
	A strategic justification of the development focusing on site selection and the suitability of the proposed site with respect to potential land use conflicts with existing and future surrounding land uses (including existing land use, other proposed or approved energy facilities, major projects, rural/residential development, Crown lands within and adjacent to the project site and subdivision potential).	Section 2
	A risk assessment of the potential impacts of the development, identifying the key issues for further assessment.	Section 2.9
	<p>An assessment of the likely impacts of the development on the environment, and any other significant issues identified in the above risk assessment, focusing on the specific issues identified below, including:</p> <ul style="list-style-type: none"> <li>• A description of the existing environment likely to be affected by the development using sufficient baseline data;</li> <li>• An assessment of the likely impacts of all stages of the development (which is commensurate with the level of impact), including any cumulative impacts of the site and existing, approved or proposed developments in the region and impacts on the site and any road</li> <li>• Upgrades, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice including the <i>Cumulative Impact Assessment Guideline</i>;</li> <li>• A description and assessment if staging of the project is proposed including any site mobilisation or pre-construction works;</li> </ul>	Section 6

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
	<ul style="list-style-type: none"> <li>A description of the measures that would be implemented to avoid, mitigate and/or offset the impacts of the development (including draft management plans for specific issues as identified below); and</li> <li>A description of the measures that would be implemented to monitor and report on the environmental performance of the development.</li> </ul> <p>A consolidated summary table of all the proposed environmental mitigation, management and monitoring measures, identifying all the commitments in the EIS.</p> <p>A detailed evaluation of the merits of the project as a whole, having regard to:</p> <ul style="list-style-type: none"> <li>The requirements in Section 4.15 of the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development;</li> <li>The suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and</li> <li>Feasible alternatives to the development and its key components, including siting and project design alternatives to avoid areas of biodiversity value, opportunities for shared infrastructure with proposed developments in the region, and the consequences of not carrying out the development.</li> </ul>	<p>Appendix B</p> <p>Section 7</p>
	<p>A detailed consideration of the capability of the project to contribute to the security and reliability of the electricity system in the National Electricity Market, having regard to local system conditions and the Department's guidance on the matter.</p>	<p>Section 2</p>
<i>Estimated Development Cost</i>	<p>Provide the estimated development cost (EDC) of the development prepared in accordance with the relevant planning circular using the Standard Form of EDC Report.</p> <p>Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided.</p> <p>The development application must also be accompanied by:</p> <ul style="list-style-type: none"> <li>The consent of the owner/s of the land (as required in Section 23(1) of the EP&amp;A Regulation); and</li> <li>A declaration from a Registered Environmental Assessment Practitioner that the EIS includes the information specified in the Department's Registered <i>Environmental Assessment Practitioner Guidelines</i>.</li> </ul>	<p>Appendix F</p>
Biodiversity	<p>An assessment of the biodiversity values and the likely biodiversity impacts of the project in accordance with Section 7.9 of the <i>Biodiversity Conservation Act 2016 (NSW)</i> (BC Act) having regard to the <i>Biodiversity Assessment Method (BAM) 2020</i> and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must:</p> <ul style="list-style-type: none"> <li>Be prepared using the approved BDAR template;</li> <li>Document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM;</li> <li>Assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades;</li> </ul>	<p>Section 6.1 Appendix G</p>

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
	<ul style="list-style-type: none"> <li>• Include an assessment for serious and irreversible impacts (SAII) in accordance with Section 9.1 of the BAM;</li> <li>• Include a strategy to offset any residual impacts of the development in accordance with the BC Act; and</li> <li>• Be finalised by an accredited assessor as BAM-compliant within 14 days of submission.</li> </ul> <p>Unless BCS and DPHI determine the proposed development is not likely to have any significant impacts on biodiversity values</p>	
	An assessment of the likely impacts on listed aquatic threatened species, populations or ecological communities, scheduled under the <i>Fisheries Management Act 1994</i> , and a description of the measures to minimise and rehabilitate impacts.	Section 6.2 Appendix H
	A cumulative impact assessment of biodiversity values in the region from nearby developments.	Section 6.18
	If an offset is required, details of the measures proposed to address the offset obligations.	Section 6.1 Appendix G
Heritage	<p>An Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with the Guide to <i>Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW</i> (OEH, 2011) and the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> (NSW DECCW, 2010b), identifying, describing, and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site (including impacts from any proposed earth works, construction works and road upgrades), including results of archaeological test excavations (where required), undertaken in accordance with the relevant standards and requirements.</p>	Section 6.3 Appendix I
	Evidence of adequate consultation with Aboriginal communities in determining and assessing impacts, identifying and selecting options for avoidance of Aboriginal cultural heritage and identifying appropriate mitigation measures (including the final proposed measures), having regard to the <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (NSW DECCW, 2010a), including the consultation process outlined within.	
	Assess the impact to historic heritage having regard to the <i>Guidelines for Preparing a Statement of Heritage Impact</i> , in consultation with Council.	Section 6.4 Appendix J
Land	<p>A detailed justification of the suitability of the site and that the site can accommodate the proposed development having regard to its potential environmental impacts, land contamination, permissibility, strategic context and existing site constraints, having regard to the Solar Guideline.</p>	Section 6.8 Appendix N
	<p>An assessment of the potential impacts of the development on existing land uses on the site and adjacent land, including:</p> <ul style="list-style-type: none"> <li>• Agricultural land, flood prone land, nearby drinking water catchments, Crown lands, mining, quarries, mineral or petroleum rights (if relevant);</li> <li>• A soil survey to determine the soil characteristics and consider the potential for salinity, acid sulfate soils, and erosion to occur; and</li> </ul>	

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
	<ul style="list-style-type: none"> <li>• A cumulative impact assessment of nearby developments.</li> </ul> <p>An assessment of the compatibility of the development with existing land uses, during construction, operation and after decommissioning, including:</p> <ul style="list-style-type: none"> <li>• Consideration of the zoning provisions applying to the land, including subdivision (if required);</li> <li>• Completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industries Land Use Conflict Risk Assessment Guide (if required);</li> <li>• An assessment of impact on agricultural resources and agricultural production on the site and region; and</li> <li>• Details of how the proposed development would implement and achieve agrisolar activities on the site.</li> </ul> <p>A preliminary investigation into potential contamination across the site, in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021 (Hazards SEPP) (as required).</p>	
Landscape and Visual	<ul style="list-style-type: none"> <li>• A landscape and visual impact assessment, prepared in accordance with the Solar Guideline and the Technical Supplement – Landscape and Visual Impact Assessment;</li> <li>• A detailed assessment of the likely visual impacts of all components of the project on surrounding residences (including approved developments, lodged development applications and dwelling entitlements), and key locations, scenic of significant vistas and road corridors in the public domain; and</li> <li>• Details of measures to mitigate and/or manage potential impacts (including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners.</li> </ul>	Section 6.6 Appendix L
Glint and Glare	Provide a glint and glare assessment prepared in accordance with the Solar Guideline.	Section 6.7 Appendix M
Noise	<p>An assessment of the construction noise impacts (including impacts from proposed road upgrades) of the development in accordance with <i>the Interim Construction Noise Guideline (ICNG)</i>, operational noise impacts in accordance with the <i>NSW Noise Policy for Industry (2017)</i>, traffic noise impacts in accordance with the <i>NSW Road Noise Policy (NSW DECCW, 2011)</i> and cumulative noise impacts (considering other developments in the area), including (where appropriate):</p> <ul style="list-style-type: none"> <li>• Identification of impacts associated with construction, site emission and traffic generation at noise affected sensitive receivers, including provision of operational noise contours;</li> <li>• Details of noise monitoring survey, background noise levels and amenity noise levels at the most-affected residential receive;</li> <li>• Details of likely daily charging/discharging load profile, manufacturer specifications for plant and equipment and noise source inventory (including intensity, quantity, location, directivity and frequency information);</li> <li>• An assessment of 'worst case' noise emission scenarios during periods of discharging and charging;</li> <li>• consideration of annoying characteristics of noise and prevailing meteorological conditions in the study area; and</li> <li>• Details and analysis of the effectiveness of proposed management and mitigation measures to adequately manage identified impacts, including a clear identification of residual noise and vibration impacts following application of these mitigation measures and details of any proposed compliance monitoring programs.</li> </ul>	Section 6.5 Appendix K

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
Transport	An assessment of the peak and average traffic generation, including light vehicles (including shuttle buses), heavy vehicles, heavy vehicles requiring escort, high risk heavy vehicles requiring escort (noting Table 1 in TfNSW Fact Sheet - Transport Management Plans for Over Size and/or Overmass Movements in NSW) and construction worker transportation.	Section 6.11 Appendix Q
	An assessment of the likely transport impacts to the site access route(s), including the above listed vehicles, site access point(s), any Crown land, particularly in relation to the capacity and condition of the roads, road safety and intersection performance.	
	A concept Level Route Analysis required for high risk heavy vehicles.	
	A cumulative impact assessment of traffic from nearby developments (including mining operations and the Hexham Straight Project).	
	Provide details of measures to mitigate and / or manage potential impacts (developed in consultation with the relevant road authorities) including: <ul style="list-style-type: none"> <li>• A schedule of all required road upgrades (including resulting from heavy vehicle and over mass / over dimensional traffic haulage routes);</li> <li>• Clear figures of proposed road upgrades (including the site access point); and</li> <li>• Road maintenance contributions, and any other traffic control measures.</li> </ul>	
Water	An assessment of the likely impacts of the development (including flooding and flood modelling) on surrounding watercourses (including their Strahler Stream Order), groundwater resources and surface water movements, and measures proposed to monitor, reduce and mitigate these impacts including water management. The following should also be addressed: <ul style="list-style-type: none"> <li>• A site water balance for the development;</li> <li>• Details of water requirements and supply arrangements for construction and operation (including consultation with suppliers);</li> <li>• A description of the erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with <i>Managing Urban Stormwater: Soils &amp; Construction</i> (Landcom, 2004) and <i>Managing Urban Stormwater: Soils and construction – Volume 2A manual</i> (Landcom, 2008);</li> <li>• Assessing the impacts of the development, including any changes to flood risk and overland flows on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required; and</li> <li>• Where the project involves works within 40 metres of any river, lake or wetlands (collectively waterfront land), identify likely impacts to the waterfront land, and how the activities are to be designed and implemented in accordance with the <i>DPI Guidelines for Controlled Activities on Waterfront Land</i> (2018) and (if necessary) <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> (DPI 2003).</li> </ul>	

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
	<p>Flood Risk: identification of any flood risk on site having regard to adopted flood studies, the potential effects of climate change and any relevant provisions of the NSW Flood Risk Management Manual;</p> <ul style="list-style-type: none"> <li>Where the development could alter flood behaviour, affect flood risk to the existing community or expose its users to flood risk, provide a flood impact and risk assessment (FIRA) prepared in accordance with the <i>Flood Impact and Risk Assessment – Flood Risk Management Guide LU01</i>; and</li> <li>Detailed design solutions and operational procedures to mitigate flood risk where required.</li> </ul>	Section 6.10 Appendix P
Hazards – Health	An assessment of potential hazards and risks including but not limited to fires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure against <i>the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields</i> .	Section 6.12 Appendix R
Hazards - Bushfire	A bushfire hazard assessment completed by a suitably qualified consultant and identify potential hazards and risks associated with bushfires / use of bushfire prone land including the risks that a BESS would cause a bush fire and demonstrate compliance with <i>Planning for Bush Fire Protection 2019</i> .	Section 6.13 Appendix S
Hazards – Dangerous Goods	Preliminary risk screening completed in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021.	Section 6.12 Appendix R
Hazards – Battery Energy Storage System	Preliminary Hazard Analysis (PHA) prepared in accordance with <i>Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis</i> (DoP, 2011) and <i>Multi-Level Risk Assessment</i> . The PHA must consider all recent standards and codes and verify separation distances to on-site and off-site receptors to prevent fire propagation and compliance with Hazardous Industry Advisory Paper No. 4, Risk Criteria for Land Use Safety Planning. The PHA must consider the effect of bushfires on batteries or other components of the BESS.	
Social	An assessment of the social impacts or benefits of the project for the region and the State as a whole in accordance with the <i>Social Impact Assessment Guideline</i> (DPE, 2023), including consideration of any increase in demand for community infrastructure services, and consideration of construction workforce accommodation, and potential cumulative impacts.	Appendix U
Economic	An assessment of the economic impacts or benefits of the project for the region and the State as a whole and provide details of any proposed voluntary benefit sharing, having regard to the <i>Benefit-Sharing Guideline 2024</i> and <i>Private Agreement Guideline 2024</i> .	Appendix T
Waste	Identify, quantify and classify the likely waste stream to be generated during construction, operation, and decommissioning, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste (in consultation with waste facilities, including Council).	Section 6.16
	Provide a waste management plan (as appropriate).	

## APPENDIX A

Issue	Secretary's Environmental Assessment Requirements (SSD-78100252)	Where Addressed
Plans and Documents	<p>The EIS must include all relevant plans, diagrams and relevant documentation required under Part 3 of the EP&amp;A Regulation. Provide these as part of the EIS rather than as separate documents.</p> <p>In addition, the EIS must include high quality files of maps and figures of the subject site and proposal.</p>	Appendix E
Legislation, Policies & Guidelines	<p>The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. A list of some of the legislation, policies and guidelines that may be relevant to the assessment of the project can be found at:</p> <ul style="list-style-type: none"> <li>• <a href="https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/Rapid-Assessment-Framework/Improving-assessment-guidance">https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/Rapid-Assessment-Framework/Improving-assessment-guidance</a>;</li> <li>• <a href="https://www.planningportal.nsw.gov.au/major-projects/assessment/policies--and-guidelines">https://www.planningportal.nsw.gov.au/major-projects/assessment/policies--and-guidelines</a>; and</li> <li>• <a href="http://www.environment.gov.au/epbc/publications#assessments">http://www.environment.gov.au/epbc/publications#assessments</a>.</li> </ul>	This EIS
Consultation	<p>During the preparation of the EIS, you should consult with the relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups, affected landowners and any exploration licence and/or mineral title holders.</p> <p>In particular, you must undertake detailed consultation with affected landowners surrounding the development, the owners of all exploration licences across the proposed development site, the operator of any pipelines on or adjacent to the site, and all relevant government agencies, including the relevant local Council.</p> <p>The EIS must:</p> <ul style="list-style-type: none"> <li>• Detail how engagement undertaken was consistent with the Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024); and</li> <li>• Describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, an explanation should be provided.</li> </ul>	Section 5 Appendix D



APPENDIX B

MITIGATION AND MANAGEMENT  
SUMMARY

## APPENDIX B

ID	Mitigation Measures	Phase
<b>Biodiversity</b>		
BD1	Project strategically designed to avoid and minimise impacts on high quality vegetation and habitats.	Detailed design
BD2	A Biodiversity Management Plan (BMP) will be prepared to the satisfaction of the Environment Agency Head for implementation prior to/during construction and through the operational period.	Pre-construction
BD3	Prepare and implement the following: <ul style="list-style-type: none"> <li>• Construction Environmental Management Plan (CEMP);</li> <li>• Traffic Management Plan (TMP);</li> <li>• Biodiversity Management Plan (BMP);</li> <li>• Erosion and Sediment Control Plan (ESCP); and</li> <li>• Pest Animal Management Plan (PAMP).</li> </ul>	Pre-construction
BD4	Where vegetation is to be removed it will be undertaken in accordance with specifications provided in a vegetation clearing protocol.  Any inadvertent vegetation removal or impacts must be repaired through restoration activities.	Construction
BD5	Environmental Sensitive No-Go Zones' will be established around areas of significance including threatened fauna habitat and threatened flora species locations outside the Development Footprint.	Construction
BD6	Plain wire perimeter fencing (opposed to barbed-wire fencing) will be used to avoid potential entrapment of fauna on fences.	Construction and Operation
BD7	To avoid unnecessary removal or damage to retained vegetation, the limit of clearing will be clearly demarcated and signed as 'Environmental Sensitive No-Go Zones' prior to the commencement of clearing. Additionally: <ul style="list-style-type: none"> <li>• Vehicles or machinery will not be permitted to park within or drive through areas of retained vegetation;</li> <li>• Construction materials will not be stockpiled or stored within areas of retained vegetation;</li> <li>• Ancillary facilities, such as site compounds and construction zones, will not be located beyond the limits of clearing;</li> <li>• Temporary fencing and signage will be maintained throughout construction; and</li> <li>• Site inductions will be given by the civil contractor to all personnel and visitors to ensure all site workers and visitors are aware of any No-Go Zones.</li> </ul>	Construction
BD8	The BMP will include measures to avoid light encroachment on adjacent habitats by restricting construction works to daylight hours as much as possible and incorporating sensitive lighting arrays that shield the adjoining native vegetation and habitat from stray light, with low-level lighting installed for all required external lighting.	Construction
BD9	The Applicant will implement programs to monitor the generation of dust during construction activities. All construction activities will be undertaken with the objective of preventing visible dust emissions from construction activities.	Construction
BD10	To minimise the spread of weeds throughout the Subject Land and surrounding patches, appropriate weed control activities will be undertaken in accordance with State and regional weed management plans.	All phases
BD11	A pathogen management protocol will be implemented.  The risk of spreading pathogens and the mitigation measures required on site will be regularly communicated to staff and contractors during inductions and toolbox talks.	All phases

## APPENDIX B

ID	Mitigation Measures	Phase
BD12	Feral pest management programs will be developed and implemented for the Project, with focus European Foxes. All control methods will be completed in accordance with relevant legislation / standard operating procedures.	All phases
BD13	Construction noise will be managed to provide the least amount of disruption to species vulnerable to these disturbances.	Construction
BD14	<p>The TIA and/or CEMP will consider procedures to minimise animal strikes. This will include on-site education, identifying and reporting hazards, use of appropriate signage and creating driving policies such as appropriate working hours and vehicle speed limits.</p> <p>The TIA will also consider traffic procedures to reduce risk of spread / introduction of pest and pathogens.</p>	All phases
BD15	Ongoing monitoring to identify any increase in risk to threatened species. To be managed through the BMP and CEMP.	Construction
<b>Aquatic Ecology</b>		
AE1	<p>Design and construction of waterway crossings and within riparian corridors should occur in accordance with:</p> <ul style="list-style-type: none"> <li>• Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (Fairfull, 2013);</li> <li>• Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (Witheridge &amp; Fairfull, 2003); and</li> <li>• Controlled activities – watercourse crossings on waterfront land (NSW DPE, 2022d).</li> </ul>	Detailed Design and Construction
AE2	<p>Prior to commencement of construction, the Applicant will prepare management and monitoring plans including:</p> <ul style="list-style-type: none"> <li>• Stormwater Management Plan;</li> <li>• Erosion and Sediment Control Plan;</li> <li>• Vegetation Management Plan;</li> <li>• Water Quality Monitoring Program; and</li> <li>• Stream Bank Erosion Monitoring Plan.</li> </ul> <p>All management plans to be prepared in accordance with relevant guidelines.</p>	Pre-construction
AE2	Recommended that livestock is confined to fenced areas that have included for suitable buffers to riparian zones and aquatic habitats.	Operation
AE3	<p>The following measures are adopted into the CEMP:</p> <ul style="list-style-type: none"> <li>• Adequately manage and store waste products and material in designated areas;</li> <li>• All construction work locations are to have designated litter disposal bins to avoid potential for aquatic debris;</li> <li>• All machinery should be routinely checked for leaks, with an emergency spill kit to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use;</li> <li>• All fuels and hydrocarbon-based products are to be stored in a sealed bunded area(s) at least 30 metres away from the water's edge;</li> <li>• All vehicles and machinery should not enter the waterway except where absolutely necessary for installation of pipeline. Where they are required to enter the waterway a washdown procedure before doing so should be implemented.</li> </ul>	Construction

## APPENDIX B

ID	Mitigation Measures	Phase
AE4	<p>Placement of construction equipment and materials should avoid riparian corridors by limiting works to the outer edge of the riparian buffer. Where necessary, works should (where possible):</p> <ul style="list-style-type: none"> <li>• Conduct works in areas with existing cleared vegetation (where possible);</li> <li>• Avoid removal of established trees; and</li> <li>• Rehabilitate areas of disturbed vegetation following the completion of works, in accordance with the natural riparian composition.</li> </ul>	Construction
AE5	<p>Any creek channels that require trenching be re-instated to their original form or long-term stable condition in instances where this cannot be achieved.</p> <p>Excavated material to be stored away from the waterway, and all backfilling to use clean fill or excavated sediment. Vegetation rehabilitation and weed management strategies to be included in the Vegetation Management Plan.</p>	Construction
AE6	<p>Where works requiring bunding are to be conducted through waterways, the following is to be considered:</p> <ul style="list-style-type: none"> <li>• Temporary barriers should typically only be in place for less than six to twelve months and avoided in areas mapped as Key Fish Habitat;</li> <li>• Adequate alternate fish passage should be provided where blockage remains for several weeks or more;</li> <li>• In-stream works should be staged to avoid blocking the entire waterway, or an alternative flow and passage channel should be considered;</li> <li>• Temporary in-stream structures should be installed during periods of low flow; and</li> <li>• Temporary barriers should not be comprised of loose, imported earth fill, with all material to be fully enclosed by geotextile, sheet piling or similar to prevent erosion and sedimentation.</li> </ul>	Construction
AE7	<p>Snag management to be conducted as per Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (Fairfull, 2013).</p>	Construction
AE8	<p>The Decommissioning Plan should consider similar controls as outlined for construction, and rehabilitation/restoration of the site.</p>	Decommissioning
AE9	<p>Implement the Water Quality Monitoring Program during construction, for one year following completion of construction, and during decommissioning.</p>	All phases
AE10	<p>Stream Bank Erosion Monitoring Plan should be established, and include:</p> <ul style="list-style-type: none"> <li>• Monitoring (ground truthing or drone survey): mapping of distances from the top of bank to the Project Area extent and areas of known erosion. This is recommended to occur annually for 3 years and then reviewed; and</li> <li>• Event-based monitoring (flood or high flow events): site investigation and mapping of problem erosion areas.</li> </ul>	All phases
AE11	<p>Offset any impacted key fish habitat.</p>	All phases
<b>Aboriginal Heritage</b>		
AH1	<p>The Applicant would re-design the Project to avoid and preserve Aboriginal sites. It is noted that an amendment to the Project layout was actioned in April 2025, which reduced direct impacts to all identified sites.</p>	Detailed design
AH2	<p>Any design changes that occur in areas that may impact registered sites requires additional assessment and consultation.</p>	Detailed design

## APPENDIX B

ID	Mitigation Measures	Phase
AH3	Site buffers of at least 10m would be implemented to all recorded CMTs.	All phases
AH4	Development of an Unexpected Finds Procedure (UFP), which includes: <ul style="list-style-type: none"> <li>• Immediate cease works and flagging protocols;</li> <li>• Appropriate notification and notification protocols; and</li> <li>• Unanticipated human remains protocols.</li> </ul>	Construction
AH5	A cultural heritage induction is to be completed by all construction workers, which will include: <ul style="list-style-type: none"> <li>• A summary of the cultural heritage values of the Project Area and surrounds;</li> <li>• Guidance on the identification of potential Aboriginal objects / heritage finds; and</li> <li>• A summary of the UFP.</li> </ul>	Construction
AH6	Mechanisms to acknowledge Aboriginal cultural values and history of the region be incorporated into ongoing operations of the Project Area.	All phases
AH7	The Applicant will develop an ACHMP in consultation with the RAPs and DPPI (with input from Heritage NSW). The ACHMP will incorporate all mitigation and management measures outlined above. Construction cannot commence until the ACHMP has been approved by DPPI	All phases
<b>Historic Heritage</b>		
HH1	A Heritage Induction will be conducted prior to the commencement of works, with all staff and contractors briefed on the requirements of the Heritage Act and the UFP.	Construction
HH2	In the event that relics are unexpectedly exposed, works should cease immediately. The management of relics should be in accordance with NSW Heritage guidelines and policies, as outlined in the UFP.	Construction
<b>Noise</b>		
N1	Noise generating work and activities should be (as proposed) limited (where possible) to the ICNG recommended standard hours (i.e., 7am to 6pm Monday to Friday and 8am to 1pm Saturdays and no work on Sundays or public holidays).	Construction
N2	Where an equipment item operates close to the Project Boundary and these works are anticipated to generate high levels of noise e.g., > 45 dB(A) at a sensitive receiver, potential respite periods, e.g., three hours of work, followed by one hour of respite should be applied.  Respite should be implemented if it is the preference of the affected receivers and if they are feasible and reasonable, and practical, to implement during the works.	Construction
N3	Appropriate plant, equipment and/or machinery for each task should be selected and efficient work practices to minimise the total construction period and the number of noise sources on the site should be adopted.	Construction
N4	Unnecessary noise due to idling engines should be avoided. High engine speeds should be avoided when equipment can be powered down and lower engine speeds are feasible.	Construction

## APPENDIX B

ID	Mitigation Measures	Phase
N5	All plant, equipment and/or machinery used on the site should be in suitable condition, with particular emphasis on exhaust silencers, covers on engines and inspection of squeaking or rattling components. Excessive noise-generating machines should be repaired or removed from the site.	Construction
N6	Reversal alarms shall be replaced with broadband "squash duck" motion alarms, where feasible.	Construction
N7	If any validated noise complaints are received, operator attended noise validation and compliance measurements should be undertaken to measure and compare the site noise level contributions to the NMLs presented in this report. All site noise levels should be measured and quantified in the absence of any influential noise sources not associated with the Project. If the measured site noise levels are above the NMLs presented in this report, further mitigation and/or management measures should be considered.	Construction
N8	Unattended noise monitoring systems shall be established at selected worst-affected sensitive receivers depending on the different activities and stages of construction when such details are finalised. The results shall be used to improve the noise mitigation and management measures for the Project so that best practice noise control is continually implemented.	Construction
N9	As per standard practice for any construction activities in NSW, a Construction Noise Management and Vibration Plan (CNVMP) containing noise mitigation and management measures shall be created for the construction phase of this Project. This is to include construction traffic noise management.	Construction
N10	<p>Consultation and notification</p> <ul style="list-style-type: none"> <li>• Provide, reasonably ahead of time, information such as duration, what is being done to minimise noise and when respite periods will occur;</li> <li>• Provide information to neighbours before and during construction through media such as letterbox drops, meetings or individual contact. In some areas, the proponent will need to provide notification in languages other than English. A website could also be established for the project to provide information;</li> <li>• Use a site information board at the front of the site with the name of the organisation responsible for the site and their contact details, hours of operation and regular information updates. This signage should be clearly visible from the outside and include afterhours emergency contact details;</li> <li>• Maintain good communication between the community and project staff;</li> <li>• Appoint a community liaison officer where required;</li> <li>• Provide a toll-free contact phone number for enquiries during the works; and</li> <li>• Facilitate contact with people to ensure that everyone can see that the site manager understands potential issues, that a planned approach is in place and that there is an ongoing commitment to minimise noise.</li> </ul>	Construction

## APPENDIX B

ID	Mitigation Measures	Phase
N11	<p>Complaints handling:</p> <ul style="list-style-type: none"> <li>• Provide a readily accessible contact point, for example, through a 24-hour toll-free information and complaints line;</li> <li>• Give complaints a fair hearing;</li> <li>• Have a documented complaints process, including an escalation procedure so that if a complainant is not satisfied there is a clear path to follow;</li> <li>• Call back as soon as possible to keep people informed of action to be taken to address noise problems;</li> <li>• Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information;</li> <li>• Implement all feasible and reasonable measures to address the source of complaint; and</li> <li>• Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, work area (for larger projects), time of verbal response and timeframe for written response where appropriate.</li> </ul>	Construction
N12	<p>Work Scheduling</p> <ul style="list-style-type: none"> <li>• Provide respite periods: Consult with affected residents to ensure that noise-generating construction works are acceptable at those times;</li> <li>• Organise work to be undertaken during the recommended standard hours where possible;</li> <li>• Schedule work when neighbours are not present;</li> <li>• Schedule noisy activities around times of high background noise (local road traffic or when other local noise sources are active) where possible to provide masking or to reduce the amount that the construction noise intrudes above the background;</li> <li>• Consult with affected neighbours about scheduling activities to minimise noise impacts; and</li> <li>• Where night work near residences cannot be feasibly or reasonably avoided, restrict the number of nights per week and/or the number of nights per calendar month that the works are undertaken, in consultation with residents who will be most affected.</li> </ul>	Construction
N13	<p>Noise Reduction kits and silencer kits are to be installed on the following items:</p> <ul style="list-style-type: none"> <li>• All inverters located in-between PV module structures;</li> <li>• All BESS Battery Units; and</li> <li>• All PCS Stations.</li> </ul>	Operation
N14	<p>Installation of 45 noise walls, with the following configuration:</p> <ul style="list-style-type: none"> <li>• 4.0 m high L-shaped at the identified PCS stations; and</li> <li>• 8.0 m high C-shaped at the three high voltage transformers. <p>Location and engineering requirements are detailed further in the NIA (<b>Appendix J</b>).</p> </li></ul>	Operation
<b>Landscape and Visual</b>		
LV1	Existing vegetation generally present around the Project Area will be retained and protected to maintain the existing level of screening and to reduce the overall visual impact.	All phases
LV2	Incorporate setbacks to infrastructure to allow for on-site screening where required in the form of perimeter planting.	Detailed design
LV3	Consideration of the height of ancillary structures to ensure the Project does not contrast significantly with the surrounding landscape.	Detailed design

## APPENDIX B

ID	Mitigation Measures	Phase
LV4	Colours of the ancillary structures will be considered to ensure minimal contrast and to help blend into the surrounding landscape to the extent practicable.	Detailed design
LV5	Screen planting to fragment views of the Project from non-associated dwellings R2a and R2b, filling gaps in the existing windbreak vegetation. Screen planting to consider general landscaping principles, including remaining consistent with existing vegetation character.	All phases
<b>Glint and Glare</b>		
GG1	Operational management of backtracking parameters to mitigate potential glare: <ul style="list-style-type: none"> <li>• Normal tracking during daylight hours (tracking angle <math>\pm 60^\circ</math>); and</li> <li>• Backtracking of panels to <math>0^\circ</math> only occurs during the night.</li> </ul>	Operation
<b>Land and Agriculture</b>		
LA1	Implement sheep grazing to integrate solar infrastructure with agricultural activities (i.e. agrisolar).	Operation
LA2	The Applicant will develop an ESCP that addresses specific erosion risks, including <ul style="list-style-type: none"> <li>• Progressive rehabilitation of the Project Area;</li> <li>• Seeding of bare earth (where required); and</li> <li>• Weed management to increase native vegetation cover.</li> </ul>	All phases.
LA3	Biosecurity protocols to be implemented, including (but not limited to): <ul style="list-style-type: none"> <li>• Inspection and washdown of all vehicles and plant entering the Project Area;</li> <li>• Limited vehicle access to the established internal road network;</li> <li>• The establishment of dedicated biosecurity wash down bays (as required);</li> <li>• Monitoring of the Project Area for pests/weeds;</li> <li>• Reporting of any biosecurity incidents to the relevant authorities;</li> <li>• Weed management practices, such as spraying; and</li> <li>• Pest management practices, as required.</li> </ul> <p>Biosecurity management to be in accordance with the <i>NSW Biosecurity Act 2015</i> and NSW Biosecurity and Food Safety Strategy 2022-2030.</p>	All phases.
LA3	Landowners will be consulted regarding: <ul style="list-style-type: none"> <li>• Project works and timing, particularly where restrictions on vehicular or stock movements would be necessary;</li> <li>• Infrastructure and access arrangements;</li> <li>• Land rehabilitation;</li> <li>• Management, damage or repair of agricultural infrastructure; and</li> <li>• Biosecurity requirements and management.</li> </ul>	All phases.
LA4	The Applicant will develop a Decommissioning and Rehabilitation Strategy that returns the land to the condition that existed prior to the Project, or as agreed with the landowners. This will include: <ul style="list-style-type: none"> <li>• Removal of underground infrastructure (such as cables and footings) where practical;</li> <li>• Removal or management of any contamination or waste in consultation with the landowners and according to regulations; and</li> <li>• Control and/or removal of any biosecurity issues during the decommissioning process, as possible.</li> </ul>	Decommissioning.
LA5	The efficacy of the management measures will be monitored throughout the life of the Project.	All phases.

## APPENDIX B

ID	Mitigation Measures	Phase
<b>Contamination</b>		
CM1	<p>A Detailed Site Investigation be completed in accordance with a Sampling and Analysis Quality Plan accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) and other relevant guidelines.</p> <p>If remediation / management of contaminated land is required, a Remediation Action Plan and / or Site Management Plan will be developed and implemented in accordance with relevant guidelines. If required, remediation will be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land.</p>	Pre-construction
CM2	<p>Measures to minimise and manage contamination risks will be detailed in a Soil, Sediment and Contamination Management Sub-plan (or equivalent) as part of the CEMP. This should include:</p> <ul style="list-style-type: none"> <li>• Establishing a risk-based contamination baseline for areas likely to be disturbed during construction (including fill, soil, surface water, sediment and groundwater as relevant), taking into account the outcomes of the DSI as outlined above;</li> <li>• Measures to manage, handle, treat and/ or store contaminated materials;</li> <li>• Pre-construction and pre-disturbance investigations to identify and confirm the presence/ absence of contaminated materials and areas of fill;</li> <li>• Materials testing to confirm reuse requirements and/ or requirements for offsite treatment/ disposal; and</li> <li>• Removal and validation requirements for the underground storage tank and the septic tank in accordance with the applicable State and National guidance.</li> </ul>	Construction
CM3	<p>An unexpected finds protocol should be developed prior to construction of the project. The unexpected finds protocol shall be implemented in the event that unusual physical (e.g. staining, fill material, suspected ACM) or sensory (visual or olfactory) characteristics of the soil are encountered. The unexpected finds protocol should include requirements for cessation of works within the affected area until after appropriate assessment and management of the unexpected find is completed in accordance with applicable statutory guidelines.</p>	Construction
<b>Traffic and Transport</b>		
TT1	<p>Neighbouring landowners are to be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.</p>	Construction.
TT2	<p>Heavy vehicles should avoid travel during peak bus operating times to limit the interaction of larger vehicles and vulnerable road users.</p>	Construction.
TT3	<p>OSOM vehicle movements are timed so they do not coincide with other OSOM vehicles within the surrounding area. This will limit the impact to the road network and can be undertaken as part of the permit application.</p>	Construction.
TT4	<p>Road upgrades will be undertaken prior to commencement of construction. This includes:</p> <ul style="list-style-type: none"> <li>• Temporary lifting of overhead electrical cables along the access route, as required;</li> <li>• Management of the level crossing at the Selwyn Street railway crossing, if required;</li> <li>• Widening of the single lane bridge on Lindsays Gap Road, if required; and</li> <li>• BAR &amp; BAL treatments at the Garoo Road / Site Access intersection.</li> </ul>	Detailed design and Construction.

## APPENDIX B

ID	Mitigation Measures	Phase
TT5	<p>A TMP will be prepared prior to commencement of the Project construction period. The TMP will include (but not limited to):</p> <ul style="list-style-type: none"> <li>• Information and communication protocols;</li> <li>• Required signage;</li> <li>• Local road management measures, including road condition, vegetation management, and traffic controls;</li> <li>• Car pooling program;</li> <li>• On-site mitigation measures; and</li> <li>• Driver protocols.</li> </ul> <p>The TMP will be prepared in accordance with Australian Standard 1742.3 and the <i>Work Health and Safety Regulation 2017</i>.</p>	Detailed design and Construction.

### **Preliminary Hazards**

PHA1	The Project BESS will be separated from off-site dwellings and associated dwellings by at least 90 m which exceeds the maximum predicted fatality, injury and property damage/accident propagation consequence distances.	Detailed Design
PHA2	<p>BESS units will:</p> <ul style="list-style-type: none"> <li>• Meet requirements of UL 9540 Standard for Safety of Energy Storage Systems and Equipment and tested in accordance with UL 9540A;</li> <li>• Be designed to account for the anticipated local climatic conditions with respect to fire propagation;</li> <li>• Have appropriate interlocks and telemetry to detect and mitigate unsafe conditions during commissioning;</li> <li>• Incorporate adequate instrumentation, interlocks and alarms to minimise the risk of the LIB incubation period being approached by shutting down modules/racks and alarming unsafe temperatures or other unsafe conditions;</li> <li>• Have been subject to rigorous factory acceptance testing prior to dispatch from the supplier; and</li> <li>• Have an effective fire suppression system that will function for the full duration of fire event should the fire safety strategy involve suppression.</li> </ul>	All phases
PHA3	Design will ensure separation distances between BESS containers set to reduce the risk of accident propagation in accordance with manufacturer's instructions, appropriate standards/guidelines.	Detailed design
PHA4	BESS will have an appropriate freeboard above the 1% Annual Exceedance Probability flood level.	All phases
PHA5	Install lightening protection.	Construction and operation
PHA6	Install visible and audible alarms external to BESS units and at the remote monitoring centre, initiated should the BMS detect an unsafe BESS condition and/or thermal runaway event.	Operation
PHA6	Provisioning the Project site with adequate fire safety systems.	Construction and operation
PHA7	Ensure emergency services have clear access and egress to all areas of the site (including alternate access and egress routes) that may require an emergency response.	All phases
PHA8	Substation and transformers will be designed, installed, operated and maintained in accordance with the technical control measures detailed relevant Australian Standards.	All phases
PHA9	<p>Control of off-site EMF exposure by:</p> <ul style="list-style-type: none"> <li>• Ensuring electrical equipment complies with relevant international and Australian standards; and</li> </ul>	All phases

## APPENDIX B

ID	Mitigation Measures	Phase
	<ul style="list-style-type: none"> <li>Maintaining separation between EMF generating equipment and off-site receivers to keep EMF strength below ICNIRP reference levels for public exposure.</li> </ul>	
PHA10	Final hazard analysis completed when the Project design has achieved an adequate level of detail.	Detailed design
PHA11	Suitably accredited freight company using dangerous goods licensed vehicles and drivers will transport the LIBs to site.	Construction
PHA12	An Emergency Plan consistent with Hazardous Industry Planning and Advisory Paper No. 1 – Emergency Planning (HIPAP 1) and Planning for Bushfire Protection will be prepared for the Project in consultation with relevant emergency services organisations and the Local Emergency Management Committee.	All phases
PHA13	Post construction inductions will be made available to first responders to make them aware of Project hazards and appropriate responses to Project hazard events.	Operation
PHA14	Adjacent landholders and associated dwellings will be consulted with to ensure they are aware of the hazards associated with the BESS and understand the emergency systems and protocols.	Operation
PHA15	Security measures will include perimeter fencing and CCTV monitoring of the BESS and electrical substations.	Construction and Operation
PHA16	Implementation of an Asset Protection Zone as per bushfire guidelines and combustible material zone of 20 m maintained around substation and BESS components.	Operation
PHA17	Vehicle speed and traffic flow management considers on-site hazards and location of BESS facilities and substations.	Construction and Operation
PHA18	Appropriate training will be provided for all personnel responsible for operations, maintenance and emergency response.	Operation
PHA19	Hot work/safe work procedures will be prepared for any maintenance works Project equipment.	Operation
PHA20	Maintenance regimes to include: <ul style="list-style-type: none"> <li>Routine preventative maintenance;</li> <li>Interlock training; and</li> <li>Condition monitoring of BESS components and transformers.</li> </ul>	Operation
PHA21	Waste batteries segregated and disposed of at an appropriate facility by a suitably licensed waste contractor.	Operation

### **Bush Fire**

BF1	<p>APZ:</p> <ul style="list-style-type: none"> <li>A minimum 10 m APZ established around the perimeter of the Development Footprint, including solar array and BESS, and on all sides of the substations, switching station, and O&amp;M Buildings;</li> <li>Essential equipment should be designed and maintained so that it will not serve as a bush fire risk to surrounding property;</li> <li>All APZ are to be managed as an inner protection zone, as per Appendix 4 of PBP 2019, and NSW RFS 'Standards for Asset Protection Zones' (NSW RFS, ); and</li> <li>APZ will not extend beyond the property boundary or rely on actions being undertaken by adjacent landowners.</li> </ul>	Operation
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## APPENDIX B

ID	Mitigation Measures	Phase
BF2	<p>Access Roads and Road Network:</p> <ul style="list-style-type: none"> <li>• Access to the Project area during construction and operations is expected via the regional council road network, with a single access point off Tarana Road to the south;</li> <li>• An additional emergency access gate is recommended to be installed from Bulls Road to provide emergency access to the south western portion of the site; and</li> <li>• All roads will be maintained to the standards as outlined within the NSW RFS Fire Trail Standards (NSW RFS, 2023). All access roads must be maintained and kept free of parked vehicles or other obstructions.</li> </ul>	Construction and Operation
BF3	<p>Water storage:</p> <ul style="list-style-type: none"> <li>• A dedicated water supply with appropriate access is required at the site to assist in the event of a fire; and</li> <li>• The final list of fire suppression equipment and water storage requirements will be confirmed in consultation with NSW RFS and FRNSW following project approval and detailed design. The most appropriate locations and number of tanks required will need to be identified in response to the final design.</li> </ul>	All phases
BF4	<p>Transmission lines:</p> <ul style="list-style-type: none"> <li>• Certain activities will be restricted within the easement such as planting and growing trees, construction of buildings, or erection of antennae or masts. While it has not been confirmed how the easement will be formally registered, for the purposes of this bushfire risk assessment, key responsibilities and management measures will be applied and are the responsibility of the asset owner (TransGrid).</li> </ul>	Construction and Operation
BF5	<p>Solar Farm and BESS Construction:</p> <ul style="list-style-type: none"> <li>• The APZ and access roads will be constructed prior to the installation of any solar panels or related infrastructure;</li> <li>• Fire detection and suppression systems should be installed at the earliest stage of construction for BESS infrastructure.</li> <li>• Ensure appropriate bunding in areas where there is potential for flammable fuels and oils to leak and create bushfires or other environmental risks;</li> <li>• Install appropriate signs to assist emergency response crews determine the location of infrastructure;</li> <li>• Ensure that appropriate permits have been issued for work during the Fire Danger Period, and that any conditions on permits are adhered to;</li> <li>• Adhere to restrictions on Total Fire Ban or days of high fire danger;</li> <li>• Carry emergency communications equipment;</li> <li>• Restrict smoking to prescribed areas, and provide suitable ash and butt disposal facilities;</li> <li>• All plant, vehicles and earth moving machinery are cleaned of any accumulated flammable material (e.g., vegetation); and</li> <li>• On days of Extreme or Catastrophic fire danger, access to the site should be limited to essential works only.</li> </ul>	Construction
BF6	<p>Solar Farm and BESS Operation:</p> <ul style="list-style-type: none"> <li>• Vegetation fuels throughout the solar farm are to be maintained in a minimal condition by grazing, or with additional slashing or mowing if required; and</li> <li>• A Bushfire Emergency Management and Operations Plan will be prepared with consideration of Australian Standard/ISO 31000 Risk management principles and guidelines and Australian Standard 3745: Planning for emergencies in facilities.</li> </ul>	Operation

## APPENDIX B

ID	Mitigation Measures	Phase
BF7	The Workforce Accommodation Camp will meet varied performance criteria, in accordance with requirements for a Special Fire Protection Purpose, as detailed in the PBP 2019. This will include: <ul style="list-style-type: none"> <li>• Minimum APZ of 36-40 m;</li> <li>• Maintenance of vegetation surrounding and within the camp;</li> <li>• Accommodation designed to meet BAL 12.5 under AS 3959; and</li> </ul> All access roads and utilities infrastructure compliant with aims and objectives detailed in the PBP 2019.	

### **Economics**

EC1	Establish a local opportunity framework that prioritises employment of regional residents (subject to availability and market competitiveness). Framework to include: <ul style="list-style-type: none"> <li>• Expression of interest process;</li> <li>• Application link on the Project website; and</li> <li>• Delivery of all local applicant and contractor details to the EPC contractor prior to the start of construction.</li> </ul>	All phases.
EC2	Non-labour inputs to production will be locally sourced (where practicable).	Construction and Operation
EC3	Establish benefit sharing schemes with the intention to support the local neighbours, community rehabilitation and social projects. This will include: <ul style="list-style-type: none"> <li>• Cultural Fund;</li> <li>• Community Health Fund;</li> <li>• Scholarships; and</li> <li>• Annual energy rebates.</li> </ul>	All phases.
EC4	Establish agreements with host landholders and relevant neighbouring landholders to provide an alternative income.	All phases.
EC5	Cooperation with neighbours to minimise agricultural disruption.	Construction and Operation
EC6	Continued agricultural activities during the operation phase of the Project and reinstatement of agricultural production following project decommissioning.	Operation
EC7	Establish commutable routes/programs that enable the Project to be accessed from wider regions, alleviating housing pressures. This may include carpooling programs or road upgrades (refer <b>Section 6.9.5</b> )	All phases.

### **Air Quality**

AQ1	Dust suppression measures (watering roadways) or preparing roadways with coarse gravel or other road coverings will be implemented where required to minimise wheel-generated offsite dust emissions.	All phases
AQ2	Material loads, which may generate dust, such as aggregates, will be covered and/or stabilised during transport into and within the construction site where practicable.	Construction
AQ3	Soil stockpiles will be managed through stabilisation, light watering or the use of covers.	Construction
AQ4	Where practicable, vegetation clearance will be minimised, undertaken in stages and cleared areas will be stabilised.	Construction
AQ5	Vehicle speed will be managed when travelling on unsealed roads.	All phases
AQ6	Speed of dumping from tip trucks will be controlled.	Construction
AQ7	Vehicle movements will be minimised, where practicable.	All phases

## APPENDIX B

ID	Mitigation Measures	Phase
AQ8	Vehicles, plant and equipment will be cleaned and washed.	All phases
AQ9	Disturbance areas no longer required for construction will be progressively revegetated and stabilised.	Construction
AQ10	All vehicles, plant and equipment will be regularly inspected and maintained to ensure operational efficiency.	All phases
AQ11	Environmental conditions that may result in dust generation, such as wind, will be regularly monitored during construction. Control measures will be implemented, as specified above.	Construction
AQ12	Meteorological forecasts will be reviewed prior to commencement of activities that have the potential to generate dust, considering the presence of high winds and/or hot and dry conditions. Where relevant, appropriate controls will be identified that address these factors.	Construction
<b>Waste Management</b>		
WM1	Adopt protocols to identify opportunities to follow the waste hierarchy, to encourage the most efficient use of resources, as well as reduce costs and environmental harm in accordance with the principles of ESD.	Construction
WM2	Adopt purchasing protocols in the selection of all components of the Project, in order to reduce the likelihood of equipment failure and minimise the potential for waste.	Construction
WM3	Select solar panel manufacturers, as recommended by the Clean Energy Council, that will meet a range of higher standards in addition to relevant Australian and International Standards.	Construction
WM4	Engage with Tamworth Regional Council to discuss the options for disposal and reuse of the identified waste streams likely to be generated, in order to ensure that any use of local waste management facilities does not exhaust available capacity, nor disadvantage the local community.	Construction
WM5	Classify wastes in accordance with the NSW EPA Waste Classification Guidelines – Part 1: classifying waste (NSW EPA, 2014a) and Addendum (NSW EPA, 2014a)	Construction
WM6	Provide waste storage locations within the assigned area, with sufficient space for the separation and storage of different waste.	Construction and Operation
WM7	Store and dispose of waste lawfully at a licensed waste facility, including fuels, oils and hazardous substances used onsite.	Construction and Operation
WM8	Separate recyclable and non-recyclable materials on-site prior to being transported to waste facility.	Construction and Operation
WM9	Investigate opportunities for recycling of wastes prior to sending to landfill.	Construction and Operation
WM10	Waste receptacles will be collected on a regular basis by licensed contractors or Council collection service and transported for offsite disposal at an appropriately licensed landfill or recycling facility.	Operation
WM11	Provide toilet facilities for onsite workers and how sullage would be disposed of (e.g., pump out to local sewage treatment plant).	Construction
WM12	Provisions protocol for the packaging, transportation of spent lithium-ion batteries to collection and recycling facilities.	Decommissioning

## APPENDIX B

ID	Mitigation Measures	Phase
<b>Social</b>		
SO1	Implement Benefit Sharing Scheme / Community Benefit Fund	Detailed Design
SO2	Establish and implement the following plans: <ul style="list-style-type: none"> <li>• Stakeholder Engagement Plan;</li> <li>• Workforce Accommodation Management Plan;</li> <li>• Local Employment Plan;</li> <li>• Cultural Heritage Management Plan;</li> <li>• Decommissioning Rehabilitation Plan;</li> <li>• TMP</li> <li>• CEMP; and</li> <li>• OEMP.</li> </ul>	All phases
SO3	Continued engagement with the stakeholders to address any relevant matters, including: <ul style="list-style-type: none"> <li>• Tamworth Regional Council;</li> <li>• Health and emergency services;</li> <li>• Surrounding SSD proponents;</li> <li>• Aboriginal groups; and</li> <li>• Local community.</li> </ul>	All phases
SO4	Establish a grievance mechanism for stakeholder complaints	All phases
SO5	Implement proposed monitoring activities in the Environmental Management System (EMS) including: <ul style="list-style-type: none"> <li>• Record queries and complaints received from stakeholders;</li> <li>• Record measures to maximise local employment;</li> <li>• Record measures to maximise local procurement;</li> <li>• Record queries and complaints received from businesses;</li> <li>• Record measures to maximise local employment and minimise potential impacts on accommodation availability, community and emergency services, and community wellbeing;</li> <li>• Monitor short-term accommodation rates annually;</li> <li>• Record measures to quantify perceived impacts to land values;</li> <li>• Record measures to minimise impacts to visual amenity and rural character;</li> <li>• Record measures to define impact on tangible and intangible Aboriginal Cultural Heritage;</li> <li>• Record measures to consider intergenerational equity and waste management;</li> <li>• Record measures to assess impacts on short-term increase in employment and procurement opportunities;</li> <li>• Monitor the number of retrenched workers;</li> <li>• Record measures that report traffic congestion, community safety concerns, and deterioration of road surface conditions; and</li> <li>• Record measures to assess cumulative impacts.</li> </ul>	Construction and Operation
SO6	Construct Workforce Accommodation Camp within the Project Area to reduce housing pressures during construction phase.	



APPENDIX C

STATUTORY COMPLIANCE

## APPENDIX C

Statutory Reference	Mandatory Consideration	Project Response	Where Addressed
<i>Considerations under the EP&amp;A Act and Regulation</i>			
<p><i>Section 1.3 - Objects of the Act</i> Pursuant to Section 1.3 of the EP&amp;A Act, the Objects of the Act are:</p>	<p>To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,</p>	<p>The Project will generate additional employment within the region which will assist in sustaining the socio-economic viability of the region while contributing to alternative sources of power generation to reduce the region's carbon footprint.</p>	<p>Entire EIS</p>
	<p>To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,</p>	<p>The Project is consistent with the principles of ESD. The Project has considered stakeholder engagement, environmental assessments, a number of design and layout alternatives, and management measures to address the impacts that are likely to occur from Project.</p>	<p>Section 7.7</p>
	<p>To promote the orderly and economic use and development of land,</p>	<p>This EIS has assessed the potential impacts of the Project in accordance with the requirements of relevant policy and guidelines and will provide an ongoing regional economic stimulus for the operational life of the Project through employment, sourcing of local materials, plant and equipment, and the establishment of a host landowner agreement, VPA.</p>	<p>Section 6</p>
	<p>To promote the delivery and maintenance of affordable housing,</p>	<p>Not applicable.</p>	<p>-</p>
	<p>To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,</p>	<p>The Project design has been prepared and refined to avoid impacts on the terrestrial and aquatic environment. Where impacts could not be avoided, mitigation measures have been provided.</p>	<p>Section 6.1 Section 6.2</p>
	<p>To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),</p>	<p>The Project design has been amended to avoid impacts on both Aboriginal and Historic Heritage. Mitigation measures have been provided to minimise impact to existing and yet unidentified heritage values.</p>	<p>Section 6.3 Section 6.4</p>
	<p>To promote good design and amenity of the built environment.</p>	<p>The Project has been designed in accordance with relevant standards, considered visual and noise amenity impacts and has avoided or minimised these through design refinements or mitigation measures.</p>	<p>Section 6.5 Section 6.6</p>
	<p>To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.</p>	<p>The Project has considered all relevant aspects in the design of buildings associated with the Project, including the health and safety of proposed occupants of buildings.</p>	<p>Section 3.4</p>

## APPENDIX C

Statutory Reference	Mandatory Consideration	Project Response	Where Addressed
	To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	This EIS has been prepared to accompany a DA for SSD, which will be assessed by the DPE. The Project SEARs has been prepared with input from relevant regulatory agencies. This EIS has engaged with all government levels through the development of the Project to date.	Section 5
	To provide increased opportunity for community participation in environmental planning and assessment.	This EIS has considered the outcomes of community participation, which has supported the Project design and identification of mitigation measures date.	
Section 4.15 – Evaluation Pursuant to Section 4.15 of the EP&A Act, the consent authority is required to take matters into consideration in determining an Application	The provisions of – Any environmental planning instrument.	The provisions of relevant environmental planning instruments (EPIs) relating to the Project are addressed below.	Section 4 and this table
	The provisions of – (ii) any proposed instrument that is or has been the subject of public consultation under this act and that has been notified to the consent authority (unless the planning secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved).	There are no draft environmental planning instruments relevant to the Project.	
	a) the provisions of – (iii) any development control plan.	Development control plans do not apply to SSD under the provisions of Clause 2.10 of SEPP (Planning Systems) 2021.	Section 2.4
	a) the provisions of – (iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4.	A CBF will be managed in consultation with Council.	Section 2.7
	a) the provisions of – (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph).	The provisions of the <i>Environmental Planning and Assessment Regulation 2021</i> (EP&A Regulation) and its relevance to the Project are addressed. Clause 61 of the EP&A Regulation provides additional matters that consent authority must consider. None of these matters are relevant to the Project.	Section 4

## APPENDIX C

Statutory Reference	Mandatory Consideration	Project Response	Where Addressed
	(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.	Assessment of the key environmental and social impacts relating to the Project have been addressed in this EIS.	Section 6
	(c) the suitability of the site for the development	Several key factors were assessed to determine site suitability, including solar resources, grid connection, planning requirements and likely environmental impacts.	Section 2.8 Section 7
	(d) any submissions made in accordance with the Act or the regulations.	This EIS has been prepared considering the SEARs requirements and agency input. The EIS will be placed on exhibition by DPE for a minimum period of to 28 days and submissions will be considered by the consent authority.	-
	(e) the public interest.	<p>The Project offers several strategic and long-term benefits that are of local and regional community interest. It includes:</p> <ul style="list-style-type: none"> <li>• The supply of renewable energy, that together with the provision of a storage capacity, is expected to result in lower cost of energy in the NEM;</li> <li>• The provision of jobs during construction and operation phases and an economic boost to the local economy, through local goods and services and community benefit programs;</li> <li>• The Project will also assist in achieving International, Australian Government, and State Government policies strategic goals;</li> <li>• The principles of sustainable development are key to decision-making processes concerning the development of new energy resources. A key principle underlying the notion of sustainable development is the concept of intergenerational equity. Intergenerational equity is premised on the idea that “the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations”;</li> <li>• Intergenerational equality relating to energy production has two requirements: <ul style="list-style-type: none"> <li>• Sustainable mining and use of fossil fuels; and</li> <li>• Increasingly substitute energy sources that result in less greenhouse gas emissions for energy sources that result in more greenhouse gas emissions.</li> </ul> </li> </ul> <p>As a result, the Project is in the public interest.</p>	Section 2 Section 7

## APPENDIX C

Statutory Reference	Mandatory Consideration	Project Response	Where Addressed
<i>Considerations under other legislation</i>			
Biodiversity Conservation Act 2016 – Section 7.14	<p>The Minister for Planning and Homes is required to take into account the impact of the Project on biodiversity.</p> <p>The Minister may (but is not required to) further consider under the EP&amp;A Act the likely impact of the Project on biodiversity values.</p>	A BDAR pursuant to section 7.14 of the BC Act has been undertaken for the Project.	Section 6.1 Appendix G
<i>Considerations under relevant EPIs</i>			
<p>State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)</p> <p>Chapter 3 Hazardous and offensive development</p> <p>Chapter 4 Remediation of Land</p>	<p>Chapter 3 of Resilience and Hazards SEPP assesses the potential hazards associated with the Project by providing definitions and guidelines for hazardous industry, offensive industry, hazardous storage establishments, and offensive storage establishments.</p> <p>Chapter 4 of Resilience and Hazards SEPP promotes the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.</p>	<p>In accordance with Clause 3.7, this EIS has considered current circulars or guidelines published by the Department relating to hazardous or offensive development including:</p> <ul style="list-style-type: none"> <li>• <i>Hazardous Industry Planning Advisory Paper No 4 – Risk Criteria for Land Use Safety Planning (HIPAP No. 4);</i></li> <li>• <i>Hazardous Industry Planning Advisory Paper No 6– Guidelines for Hazard Analysis (HIPAP No. 6);</i> and</li> <li>• Multi-level Risk Assessment.</li> </ul> <p>A Preliminary Hazard Analysis (PHA) has been prepared for the Project.</p> <p>Under Clause 4.6, a consent authority is required to consider whether a proposed development site is affected by soil or other contaminants before granting consent. The Land and Agricultural Impact Assessment provides a further discussion on the potential impacts on soil and agriculture resources associated with the Project. The Preliminary Site Investigation provides further information on potential contaminants</p>	Section 6.12 Appendix Q Section 6.8 Appendix M Section 6.9 Appendix N
Tamworth Regional Local Environmental Plan 2010 (Tamworth Regional LEP)	<p>The EIS will address relevant components of the Tamworth Regional LEP, including:</p> <ul style="list-style-type: none"> <li>• <i>To encourage sustainable primary industry production by maintaining and enhancing the natural resource base;</i></li> <li>• <i>To encourage diversity in primary industry enterprises and systems appropriate for the area;</i></li> </ul>	<p>The Project meets the aims of the Tamworth Regional LEP as:</p> <ul style="list-style-type: none"> <li>• The proposed layout has been designed to avoid or minimise impact to identified biodiversity, visual and noise amenity, and Aboriginal cultural heritage values;</li> <li>• Progressive design iterations have continued with key drivers being measures to minimise and avoid environmental and social impacts in line with the Avoid-Minimise-Mitigate-Offset design hierarchy;</li> </ul>	Section 2.4  Section 6


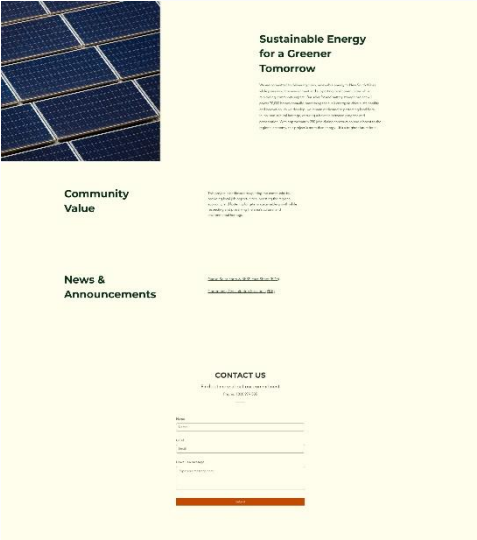
## APPENDIX C

Statutory Reference	Mandatory Consideration	Project Response	Where Addressed
	<ul style="list-style-type: none"> <li><i>To minimise conflict between land uses within this zone and land uses within adjoining zones; and</i></li> <li><i>To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Project meets the principles of ESD as justified in this EIS;</li> <li>The Project will allow for ongoing agricultural activity through planned implementation of agrisolar, ensuring the Project Area can be used for grazing, preventing fragmentation of agricultural land; and</li> <li>The Project will create a range of social and economic benefits which will contribute to substantial capital investment in the Tamworth region. The Applicant also commits to implementing benefit sharing schemes for the life of the Project, which will provide investment in buildings and social infrastructure in the local area and Tamworth Region.</li> <li>The proposed temporary workforce accommodation camp is ancillary infrastructure of the Project and therefore is considered part of the Project in terms of permissibility.</li> </ul>	
State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)	Objectives of the RU1 – Primary Production relevant to the Project (Land Use Table): <ul style="list-style-type: none"> <li><i>To encourage sustainable primary industry production by maintaining and enhancing the natural resource base;</i></li> <li><i>To encourage diversity in primary industry enterprises and systems appropriate for the area; and</i></li> <li><i>To minimise the fragmentation and alienation of resource lands.</i></li> </ul>	<p>The Project has undertaken technical studies to identify, avoid and mitigate impacts associated with the development of Project. Appropriate measures will be adopted to protect, maintaining and enhance the local natural resource.</p> <p>Additionally, agrisolar will ensure continued agricultural activities, and provide a diversified income stream through host landowner agreement and benefit sharing schemes.</p>	Section 2.4 and Section 6
<i>Considerations under Development Control Plans</i>			
Development Control Plan	The Tamworth Regional Development Control Plan 2010 does not apply to the Project, commensurate with the <i>State Environmental Planning Policy (Planning Systems) 2021</i> Development Control Plans do not apply to SSD and therefore do not apply to the Project.	The Project is classified as SSD. As such, under section 2.10 of the Planning Systems SEPP, Development Control Plan does not apply and is not a mandatory consideration for the Project.	N/A






APPENDIX D      STAKEHOLDER ENGAGEMENT

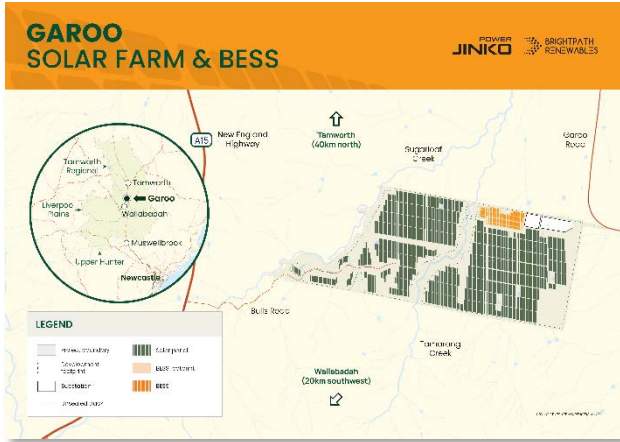
## APPENDIX D

Activities	Summary
Stakeholder feedback database	All stakeholder interactions were logged into the stakeholder management database, developed in Excel. The database captures stakeholder information, feedback, concerns and enquiries, together with interaction sentiment and direction, to accurately record proactive and reactive engagements.
Project website	<p>The Project website was established to provide Project specific information to the community. The website details the Project need, background, location, timeline, community consultation, and contact information.</p> <p>Web traffic statistics show 756 visits to the Project website's home page by 536 unique visitors, since the site was launched in September 2024.</p> <p>The website is at: <a href="http://www.garoosolarfarm.com">www.garoosolarfarm.com</a></p> <div style="display: flex; justify-content: space-around;">   </div>
Website contact	A contact field is available on the Project website and when completed, and enquiry is sent to the Project team via email. The Project email address has received two emails from community members via this channel, one from a journalist and one from a utilities provider.
Emails	Near neighbours contacted the Applicant through the Project team's direct email addresses and 12 emails have been received.

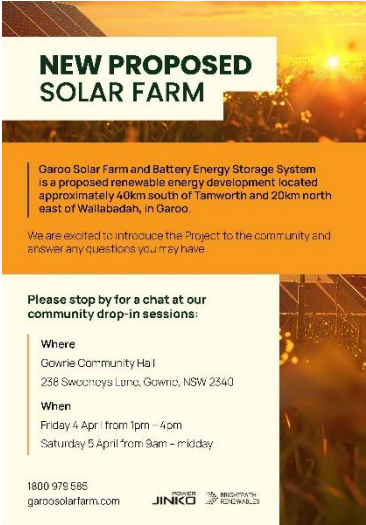

# APPENDIX D

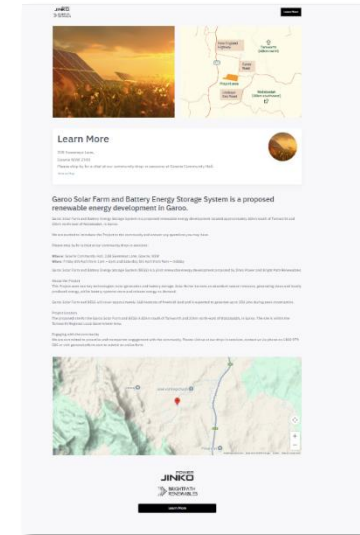
Activities	Summary
Phone calls	A Project phone number was established and is monitored each day by Project team members. The phone number is 1800 979 585 and is available on the Project website and factsheet. The 1800 number has received four calls.
Project factsheet	<p>A factsheet about the Garoo Solar Farm was developed and shared with stakeholders. The factsheet includes general Project information, a Project timeline and contact information. The factsheet has been shared at drop-in sessions, meetings, and upon request to stakeholders and community members.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;">  <p><b>Garoo Solar Farm and Battery Energy Storage System</b></p> <p>Garoo Solar Farm and Battery Energy Storage System (BESS) is a joint renewable energy development proposed by Jinko Power and Bright Path Renewables. The Garoo Solar Farm and BESS will generate approximately 1,640 megawatt hours of renewable energy each year. The proponent is currently seeking development consent for the Project.</p> <p><b>About the Project</b></p> <p>This Project uses two key technologies: solar generation and battery storage. Solar farms harness an abundant natural resource, generating clean and locally produced energy, whilst battery systems store and release energy on demand.</p> <p>Garoo Solar Farm and BESS intends to support local jobs, regional economic growth, clean-tech investment, and decarbonisation.</p> <div style="display: flex;"> <div style="width: 48%;"> <p><b>Solar Farm</b></p> <p>The solar component will contribute to the state's renewable energy transition by generating clean energy. The solar farm will have a capacity of 155 megawatts of solar energy and will provide more electricity to power approximately 70,000 homes.</p> </div> <div style="width: 48%;"> <p><b>Battery Energy Storage System (BESS)</b></p> <p>The 350 megawatt battery system will store energy produced by the solar farm to use the solar power. The BESS consists of up to 84 hours of electricity, which will allow peak demand periods to be met, providing a reliable power supply and grid stability.</p> </div> </div> <p><b>Project location</b></p> <p>The proposed site for the Garoo Solar Farm and BESS is 42km south of Tamworth and 20km north east of Wallabadah, in the rural locality of Garoo. The site is within the Tamworth Regional Local Government Area.</p> <p>The proposed project area is located on cleared grazing land with minimal vegetation and has the potential to connect to the existing 33kV network transmission lines. The site is compatible with current agricultural practices on the land and can accommodate sheep grazing during operations, minimising disruption to farmers and landowners.</p>  </div> <div style="width: 48%;"> <p><b>Benefits</b></p> <p>The Garoo Solar Farm and BESS will provide the region with a range of social and economic benefits and contribute to a reliable and sustainable energy system.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>155 MW</b> of renewable solar energy generation</p> </div> <div style="text-align: center;"> <p>Ensuring efficient and sustainable land use</p> <p><b>Up to 250+</b> jobs during construction</p> </div> <div style="text-align: center;"> <p><b>380 MW</b> battery storage enabling grid stability</p> <p>Supporting state and national emissions reduction targets</p> </div> </div> <p><b>Proposed timeline</b></p> <p>Below is the anticipated timeline for the proposed Garoo Solar Farm and BESS Project.</p>  <p><b>About Jinko Power and Bright Path Renewables</b></p> <p>Jinko Power is a leading global renewable energy company specialising in the investment, development, and operation of solar power plants, including the core philosophy of environmental sustainability. The company is committed to promoting the widespread adoption of renewable energy, contributing to global carbon emission reduction, and fostering a green, low-carbon future.</p> <p>Bright Path Renewables is an Australian-owned renewable energy developer. Bright Path Renewables is committed to pioneering innovative renewable energy solutions that drive positive change for local communities, fostering a cleaner, sustainable and greener world for all.</p> <p><b>Engaging with the community</b></p> <p>We are committed to proactive and transparent engagement with the local community. Your input is important to us, and we welcome your questions and feedback. Please contact us via phone on 1800 979 585 or visit <a href="http://garoo.solarfarm.com">garoo.solarfarm.com</a> to submit an online form.</p> <p><b>JINKO POWER</b> <b>BRIGHT PATH RENEWABLES</b></p> </div> </div>

## APPENDIX D

Activities	Summary
Project map	<p>The Project team prepared and printed an A1-sized map poster showing the preliminary Project layout.</p> <p>This poster was used at the community drop-in sessions and in neighbour conversations to guide discussions about location and visual amenity.</p> 
Community drop-in sessions	<p>Two community drop-in sessions were held to introduce the Project and understand community perceptions and feedback. The Applicant's presence was driven by the desire to engage the local community, provide information about the Project, address any concerns, build goodwill, and maintain relationships with key stakeholders as the Project progresses.</p> <p>The community drop-in sessions were held at Gowrie Community Hall on 4 and 5 April 2025. This location was chosen for its close proximity to the Project site. Across two three-hour sessions, the team spoke with 10 people. The majority of people interacted with the map and collected a factsheet and FAQ. The key topics discussed were visual impacts, consultation, insurance, fire risk, waste management, traffic management and livestock within/near the Project.</p>
Public relations and media	<ul style="list-style-type: none"> <li>• Print and digital media was used to advertise the Applicant's community drop-in sessions;</li> <li>• A print advertisement was placed in The Northern Daily leader newspaper on Saturday 22 March and Saturday 29 March 2025. The Saturday average readership is 14,230;</li> <li>• An online campaign promoting the sessions was run through The Northern Daily Leader for two weeks. All digital ads linked to a campaign 'landing page', which directed stakeholders to the Project website. The digital ads appeared on The Northern Daily Leader's website and Facebook page. Geotargeting technology was used to ensure that the ads reached audiences specifically in the region close to the proposed development site;</li> <li>• The campaign generated:             <ul style="list-style-type: none"> <li>◦ 63,296 impressions – the number of times the ads were shown; and</li> <li>◦ 495 clicks – the number of times the ads were clicked.</li> </ul> </li> <li>• Click Through Rate of 0.78% - the percentage of people who saw the ads and clicked on them. Industry standard rate is 0.05%.</li> </ul>







# APPENDIX D


Activities	Summary	
	 <p>Newspaper advertisement</p>	 <p>Appearance in The Northern Daily Leader</p>
<p>Introductory letters – addressed mail</p>	<p>Twenty-eight (28) introductory letters were sent to individual residents and businesses located within 5 km of the Project area. The letter detailed where the Project will be located, the energy capacities, timeline and the Project’s contact information.</p>	



Digital campaign landing page

# APPENDIX D

Activities	Summary
	<div style="border: 1px solid black; padding: 10px;">  <p>30 October 2024</p> <p>Dear property owner,</p> <p><b>Introduction to the proposed GreenPulse Solar Farm and BESS Project</b></p> <p>GreenPulse Solar Farm and BESS (the proponent) is seeking development consent for the GreenPulse Solar Farm and Battery Energy Storage System (BESS) Project. GreenPulse Solar Farm and BESS is a proposed renewable energy development located approximately 40 kilometres south of Tamworth in the rural locality of Galoo, within the Tamworth Regional Local Government Area. The Project is expected to generate approximately 360 gigawatt hours of renewable energy each year, through a 190 megawatt solar farm and 360 megawatts of battery storage, to regulate energy supply to the grid.</p> <p>You are receiving this letter because your residence has been identified as a neighbouring property to the proposed Project area.</p> <p><b>Proposed GreenPulse Solar Farm and BESS Project boundary</b></p>  <p><b>Why this location?</b></p> <p>The proposed site has considerable benefits due to its geographical location, proximity to electrical infrastructure and compatibility with current agricultural practices on the land (minimising disruption to farm and landowners). The proposed Project area spans approximately 350 hectares of cleared grazing land with minimal vegetation and has potential to connect to the existing 330 kilovolt transmission line.</p> <p><b>Anticipated benefits</b></p> <p>The GreenPulse Solar Farm and BESS is anticipated to support NSW Government aims to cut emissions by 50% by 2030 and achieve net zero by 2050, creating a reliable and sustainable energy system and proposed to deliver the following local and statewide benefits:</p> <ul style="list-style-type: none"> <li style="text-align: center;"> Renewable energy generation through solar</li> <li style="text-align: center;"> Ensuring efficient and sustainable land use</li> <li style="text-align: center;"> Up to 250+ jobs during construction</li> <li style="text-align: center;"> Enabling better grid stability and reliable power supply</li> </ul> </div>
Face-to-face meetings	Nine (9) face-to-face meetings held with State MP, Tamworth Regional Council, immediate neighbours, surrounding community members, and government agencies.




**Project approval process**

- GreenPulse is seeking State Significant Development consent for the Project.
- GreenPulse is drafting a zoning report for the NSW Department of Planning, Housing and Infrastructure (DPHI), seeking approval to prepare an Environmental Impact Statement (EIS).
- To prepare the EIS, GreenPulse will consult with local landholders, the community, and other stakeholders to understand concerns and plan a Project that benefits the Tamworth Regional Local Government Area and the community.
- During the 28-day EIS exhibition period, community members and stakeholders can provide written submissions to the DPHI.
- All submissions and GreenPulse responses will be included in a Submissions Report to DPHI, which will be considered during the Project's approval process.

**Project timeline**

Below is the anticipated timeline for the proposed GreenPulse Solar Farm and BESS Project.



**Connect with us and have your say**

GreenPulse is committed to proactive and transparent engagement with the local community and landowners. Your input is important to us, and we welcome your questions and feedback on the proposed GreenPulse Solar Farm and BESS Project. For more information, please contact us.

Web: [www.greenpulsefarm.com](http://www.greenpulsefarm.com)  
Phone: 1800 070 585

Best regards,  
**Taruik Al-Jarrah**  
Director  
**GreenPulse Solar Farm and BESS**

GreenPulse Solar Farm and BESS is a proposed joint development by Jinka Power and Bright Path Renewables (BPR).

Jinka Power is a leading global renewable energy company specialising in the development, investment, and operation of solar power plants. Dedicated to delivering clean and sustainable energy solutions worldwide, Jinka Power leverages advanced solar technology and extensive project management expertise to successfully implement large-scale solar projects across multiple continents. Upholding the core philosophy of environmental sustainability, the company is committed to promoting the widespread adoption of renewable energy, contributing to global carbon emission reduction, and fostering a green transition future.

Bright Path Renewables is an Australian renewable energy developer. BPR is committed to providing innovative renewable energy solutions that drive positive change for local communities, fostering a cleaner, sustainable and greener world for all. BPR team experience spans across more than 12 countries with more than four gigawatts of completed renewable energy projects.



APPENDIX E      DETAILED MAPS AND PLANS



APPENDIX F

ESTIMATED DEVELOPMENT COST



APPENDIX G

BIODIVERSITY DEVELOPMENT  
ASSESSMENT REPORT



APPENDIX H

ABORIGINAL CULTURAL HERITAGE  
ASSESSMENT REPORT



APPENDIX I

HISTORIC HERITAGE ASSESSMENT  
REPORT



APPENDIX J

NOISE IMPACT ASSESSMENT



APPENDIX K

LANDSCAPE CHARACTER AND VISUAL  
IMPACT ASSESSMENT



APPENDIX L      GLINT AND GLARE ASSESSMENT



APPENDIX M

LAND AND AGRICULTURE IMPACT  
ASSESSMENT



APPENDIX N      PRELIMINARY SITE INVESTIGATION



APPENDIX O

WATER RESOURCES IMPACT  
ASSESSMENT



APPENDIX P

TRAFFIC IMPACT ASSESSMENT



APPENDIX Q

PRELIMINARY HAZARD ANALYSIS



APPENDIX R

BUSHFIRE IMPACT ASSESSMENT



APPENDIX S

ECONOMIC IMPACT ASSESSMENT



APPENDIX T

SOCIAL IMPACT ASSESSMENT



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