AGL Energy Limited

Nyngan Solar Plant Grid Connection

Construction Environmental Management Plan

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Reviewed By:	**CPP** Sturt Daley, Seamus Hickey	**Date:**	10/02/2014

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Contents

1 ABBREVIATIONS AND DEFINITIONS 8
1.1 Abbreviations 8
1.2 Definitions 9
2 INTRODUCTION 10
2.1 Purpose 10
2.2 Plan Scope 10
2.3 Plan Revisions 11
2.4 Minor Amendments 11
3 PROJECT SPECIFIC DETAILS 13
3.1 Project Details 13
3.2 Map of Project 13
3.3 Project Scope of Works 15
3.3.1 Nyngan Solar Plant 15
3.3.2 CPP Works 15
3.3.3 Contractor Interface 16
3.4 Map of Offices, Amenities and Easement 17
3.5 Site Map Showing Contractor Footprints 17
3.6 Project Timing 17
3.7 Local Resources 17
3.8 Local Consultation 17
4 ROLES AND RESPONSIBILITIES 19
4.1 Project Manager 19
4.2 Site Manager 20
4.3 WHSE & QA Manager/Coordinator 21
4.4 Project Ecologist 22
4.5 Employees 22
4.6 Contractors 23
4.7 Environmental Representative 23
4.8 Communicating Roles 24
5 OBJECTIVES AND TARGETS 25
5.1 What are Objectives and Targets 25
5.2 Lead Indicators 25
5.3 Lag Indicators 25
6 INTEGRATED MANAGEMENT SYSTEM PROCEDURES 26
6.1 Audits and Inspections 26
6.1.1 Audits 26
6.1.2 Inspections 26
6.1.3 General 27
6.1.4 Environmental Representative 27
6.2 Complaints 27
6.3 Emergency Response 27
6.3.1 Introduction 27
6.3.2 Planning 27
6.3.3 Effectiveness and Trials 28

6.4 Fire Fighting, Fire Bans and Bushfire Management 28
6.4.1 Overview 28
6.4.2 Bushfire Management Plan 28
6.4.2.1 Requirement 28
6.4.2.2 Scope 29
6.4.2.3 Ignition Risks 29
6.4.2.4 Actions 30
6.4.3 CPP Emergency Contact 36
6.4.4 RFS Consultation 36
6.4.5 Hot works 36
6.4.5.1 Definition 36
6.4.5.2 Permits 37
6.4.6 Requirements 37
6.4.7 Register 37
6.4.8 Testing and Maintenance 37
6.4.9 Training 38
6.4.10 Total Fire Ban and Current Fire Danger Maps 38
6.4.11 Planned Burns 38
6.4.12 Neighbourhood/Bushfire Safer Place 38
6.5 Hazardous Substances and Dangerous Goods 39
6.5.1 Dangerous Goods 39
6.5.2 Purchasing 39
6.5.3 SDS 39
6.5.4 Risk Assessment 40
6.5.5 Labelling 40
6.5.6 Transport 40
6.5.7 Storage 40
6.5.8 Disposal 40
6.6 Incident Management 41
6.6.1 Internal Incident Reporting 41
6.6.2 Incident Categories 41
6.6.3 Incident Management and Investigation 41
6.6.4 External Incident Reporting 42
6.7 Statutory Obligations 43
6.7.1 Legislation 43
6.7.2 Approvals 44
6.7.3 Project Consent Conditions and Mitigation Measures 44
6.8 Meetings and Reports 44
6.8.1 Meetings 44
6.8.2 CPP Reports 44
6.8.3 Client Reports 45
6.8.4 Environmental Data 45
6.9 Non-Conforming Issues 45
6.9.1 Addressing Non-Conforming Items 45
6.9.2 Issuing Continuous Improvement Notices 45
6.10 Policies 46
6.11 Project Rules 46

6.12 Risk Management 46
6.12.1 Project Hazards, Risks, Aspects and Impacts Workshops 46
6.12.2 Reviewing and Updating Hazard Registers 46
6.12.3 Daily Hazard Assessment Check 47
6.12.4 Changes to Work Practices 47
6.12.5 Hazard Reporting 48
6.13 Risk Assessment 48
6.13.1 Consequence 48
6.13.2 Likelihood 49
6.13.3 Risk Matrix 49
6.13.4 Control Measures 49
6.13.5 Residual Risk 50
6.13.6 Responsibility 51
6.14 Traffic Management Plan 51
6.15 Training and Competencies 52
6.15.1 Competency Matrix 52
6.15.2 Competency Register 52
6.15.3 Training Needs Analysis 52
6.15.4 Requesting Training 53
6.15.5 Project Specific Inductions 53
6.15.6 Environmental training 53
6.15.7 Returning to Project 53
6.16 Services and Utilities 54
7 PROJECT SPECIFIC ENVIRONMENTAL PROCEDURES 55
7.1 Environmental Planning 55
7.1.1 Environmental Assessment Requirements 55
7.1.2 Construction Environmental Management Plan Requirements 56
7.1.3 Cumulative Impacts 62
7.2 Soil and Water Management 62
7.2.1 Introduction 62
7.2.2 Potential Impacts 64
7.2.3 Soil Identification and Reuse Assessment 65
7.2.4 Soil Reuse Procedures 65
7.2.5 Soil and Stockpile Management Assessment 65
7.2.6 Soil and Stockpile Management Procedures 65
7.2.7 Spoil Transport Assessment 66
7.2.8 Spoil Transport Procedures 66
7.2.9 Erosion and Sediment Control Assessment 66
7.2.10 Erosion and Sediment Control Procedures 68
7.2.11 Site Constraints 68
7.2.12 Groundwater Interference 69
7.2.13 Flooding and Waterways 69
7.3 Flora and Fauna Management Plan 69
7.3.1 Scope: 69
7.3.2 Relationship to Biodiversity Offset Management Package: 70
7.3.3 Relationship to Operational Environmental Management Plan and Decommissioning Management Plan 70

7.3.4 Objectives: 70
7.3.5 Assessment 71
7.3.6 Procedures 85
7.3.7 Records: 90
7.3.8 Fauna Impacts 95
7.3.9 Responsibilities 95
7.4 Waste Management and Minimisation 96
7.4.1 Overview 96
7.4.2 Assessment 96
7.4.3 Waste Types 97
7.4.4 Waste Disposal 97
7.4.5 Waste Tracking 97
7.4.6 Contaminated Materials and Wastes 98
7.4.7 Sullage 98
7.4.8 Responsibilities 98
7.5 Weed Management 98
7.5.1 Overview 98
7.5.2 Assessment 98
7.5.3 During Construction 98
7.5.3.1 Mobile Plant 98
7.5.3.2 Plant Cleaning 99
7.5.4 Cleaning Procedure 99
7.5.5 General Procedures 99
7.5.6 Responsibilities 99
7.6 Air Quality Management 100
7.6.1 Background 100
7.6.2 Assessment 100
7.6.3 Air Quality and Mobile Plant 100
7.6.4 Air Quality Management Plan 100
7.6.4.1 Requirement 100
7.6.4.2 Objectives 101
7.6.4.3 Actions: 101
7.6.5 Responsibilities 102
7.7 Dewatering 102
7.7.1 Assessment 102
7.7.2 Water Quality 102
7.7.3 Dewatering Requirements 102
7.7.4 Responsibilities 103
7.8 Spill Management 103
7.8.1 Assessment 103
7.8.2 Spill Response Equipment Inspection 103
7.8.3 Emergency Spill Response 103
7.8.4 Spill Assessment 103
7.8.5 Spill Management 103
7.8.6 Responsibilities 104
7.9 Noise Management Plan 104
7.9.1 Background 104

7.9.1.1 Road Traffic Noise 105
7.9.2 Assessment 105
7.9.3 Requirements 105
7.9.4 Mitigation Measures: 107
7.9.5 Notification of Residents 108
7.9.6 Works Outside Standard Construction Hours 111
7.9.7 Out of Hours Work Protocol (OOHW) 111
7.9.7.1 OOHW Risk Assessment 111
7.9.8 Monitoring Performance 113
7.9.9 Corona and Aeolian Noise 113
7.9.9.1 Corona discharge. 113
7.9.9.2 Aeolian Vibration 113
7.9.10 Responsibilities 114
7.10 Heritage Management 114
7.10.1 Consultation 114
7.10.2 Management of Identified Aboriginal Heritage 114
7.10.3 Management of Unidentified Aboriginal Objects and/or Burials 116
7.10.4 Aboriginal Heritage Induction 116
7.10.5 Protocol for Continued Aboriginal Community Consultation 116
7.10.6 Management of Unidentified Historical Relics 117
7.10.7 Responsibilities 117
7.11 Site Rehabilitation Management 117
7.11.1 Requirement 117
7.11.2 Background 117
7.11.3 Actions 118
7.11.3.1 Rehabilitation Measures 118
7.11.3.2 Monitoring 119
7.11.4 Responsibilities 119
7.12 Landscape Plan 119
8 Compliance Tracking Program 120
9 Drawings 122
APPENDICES 126
Appendix A – Environmental Policy
Appendix B –Reference Documents
Appendix C - Agency Stakeholder Consultation
Office of Environment and Heritage
NSW Office of Water
Rural Fire Service
Bogan Shire Council
Appendix D – Register of Project Forms
Appendix E - Traffic Management Plan
Appendix F – Project Organisation Chart
Appendix G – Risk Assessment
Appendix H – Consent Conditions and Compliance
Appendix I – Mitigation Measures and Compliance

1 ABBREVIATIONS AND DEFINITIONS

1.1 Abbreviations

BOP	Biodiversity Offset Plan
CEMP	Construction Environmental Management Plan
CIN	Continuous Improvement Notice
CPP	Consolidated Power Projects
CWD	Coarse Woody Debris
DECC	Department of Environment and Climate Change
DP&I	NSW Department of Primary Industries
DMP	Decommissioning Management Plan
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPA	Environment Protection Authority
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
HBT	Hollow Bearing Tree
FS	First Solar (Australia) Pty Ltd
FFMP	Flora and Fauna Management Plan
JSEA	Job Safety Environmental Analysis
MUS	Managing Urban Stormwater
NIS	Noise Impact Statements
NOW	NSW Office of Water
OEH	NSW Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OOHW	Out of Hours Work
PCBUs	Person Conducting a Business or Undertaking
PV	Photo Voltaic
RAP	Registered Aboriginal Party
RFA	Rural Fires Act 1997
RFS	Rural Fire Service
RUSLE	Revised Universal Soil Loss Equation
SDS	Safety Data Sheet
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan

1.2 Definitions

Complex	For the purpose of risk management, Complex is defined as an activity not previously conducted by the manager responsible for directly managing that activity.
Industry Expert	For the purpose of risk management, Industry Expert is a person who have participated in, or managed a particular activity on numerous occasions.
Environment	Environment is defined as the surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation.
Environmental aspect	This is an element of an organization's activities, products or services that can interact with the environment.
Significant environmental aspect	An environmental aspect that has or can have a significant environmental impact.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.
Environmental Impact Assessment	An environmental impact assessment is an assessment of the possible positive or negative impact that a proposed project may have on the environment, together consisting of the environmental, social and economic aspects. In NSW environmental impact statements are likely to be required instead of REF if there is likely to be a significant effect on the environment Further information on EIS is available at NSW DECC – Proponents Guidelines for the Review of Environmental Factors.
Environmental Impact Statement (EIS)	A description and analysis of issues relevant to the project and the means by which those issues can be addressed. In NSW only projects which fall within the category of designated development or State significant development require an EIS. An EIS is usually a very detailed document which is generally prepared by clients. The EIS for this project is Environmental *Impact Statement – Nyngan Solar Plan* (NGH environmental, March 2013)
Aspects and Impacts Register	A CPP register identifying, assessing and controlling environmental aspects and impacts of project activities that can be controlled or influenced.

2 INTRODUCTION

2.1 Purpose

The purpose of this Construction Environmental Management Plan (CEMP) is to describe the environmental strategy, methods, controls, and requirements for the execution of the project. The CEMP is prepared by reference to the specific Project Approval (SSD-5355) granted by the Planning Assessment Commission (PAC). The overarching intent of this CEMP is to ensure compliance with the specific consent conditions of the Project Approval, specifically, but not limited to, consent condition C2, which requires the preparation of a CEMP.

The application for Project Approval was granted consent by reference to an Environmental Impact Statement, prepared by NGH Environmental, and supported by a submissions report and mitigation measures.

Appendix H of this CEMP provides a summary of consent conditions and the appropriate section of this document where compliance is confirmed (where relevant). **Appendix I** contains a list of the mitigation measures proposed by the EIS and the appropriate section of this document where compliance is confirmed (where relevant).

This plan should be read in conjunction with the CPP Work Health and Safety Management and the Project Quality Plans.

The CEMP has been developed in consultation with Project Manager, WHSE and QA Manager and Site Manager.

The project team shall manage the project in accordance with the relevant Acts and Regulations, applicable Australian Standards and industry Codes of Practice.

A copy of the plan, together with the relevant appendices, shall be made available to all Consolidated Power Projects staff and supplied to all subcontractors prior to commencing work on the project.

All personnel, prior to starting work on the site shall be made aware of the plan and of any revisions by means of a project induction.

Staff and Subcontractors shall conform to the requirements of this CEMP.

A copy of the plan and or any revisions to the plan shall be retained for the duration of the project.

The CEMP shall be reviewed at the Project Team Meeting following any significant incidents or significant changes to the project scope, methodology, risk profile or legislation.

The Project Manager shall amend this plan following any significant incidents or if there are significant changes to project scope, methodology, risk profile or legislation and ensure that each relevant person affected by the amendment is advised of the details of the amendment; or given a copy of the amendment.

Implementation of this plan shall be monitored via the internal audit process, site inspections and will be discussed as a priority at Project Team Meetings.

CEMP's and related documents are to be kept for a minimum of 10 years unless otherwise stated or required by legislation or for any other legal reason.

AGL has prepared a Staging Report for the overall construction and this CEMP has been prepared by reference to that document – refer **Section 3.3.2**.

2.2 Plan Scope

The Client, AGL, has divided the overall project into two component areas and awarded two construction contracts. This is also representative of the EIS assessment which acknowledged the differing levels of impact associated with the two project elements.

The primary element of the project, being the construction and operation of the solar plant infrastructure, has been awarded to First Solar (Australia) Pty Ltd. First Solar has prepared a CEMP specific to their element of the project which has been assessed and approved by the Department of Planning and Infrastructure (DP&I).

The secondary (and smaller scale) element, being the development of the substation and transmission line has been awarded to CPP. This CEMP addresses that substantially smaller portion of the project. Measures proposed via this CEMP are representative of the smaller scale nature and shorter duration of this project element.

Interfaces between First Solar and CPP, where relevant, have been identified within this CEMP, and opportunities for shared responsibilities explored. The CPP Project Manager would take overarching responsibility for liaison and communication with First Solar.

2.3 Plan Revisions

The plan shall be reviewed whenever project inputs or applicable processes change. Changes to other than the plan appendices, shall be classed as a 'major' revision (1.0, 2.0, 3.0 ….). Major revisions shall be reviewed, approved and re-circulated as necessary.

Changes to the plan's appendices only, will be classed as a 'minor' revision (2.1, 2.2, 2.3 ….). Minor revisions will not require review and approval prior to re-circulation.

Major and minor revisions shall be listed in the Revision History table at the front of this plan.

2.4 Minor Amendments

The CEMP is a 'live' document and will be reviewed and updated as required during the construction period. Triggers for amendments to the CEMP will include:

- Outcomes from auditing that establish a need for change;
- Changes to construction methodology;
- Revised risk management output; or
- An incident occurring that necessitates an amendment.

Modifications to the CEMP will involve the following process:

- Proposed change to the CEMP identified;
- CPP will prepare a case to amend the CEMP and submit this (and the proposed CEMP change) to AGL;
- Subject to securing AGL acceptance, the CEMP will be updated and a digital copy issued to relevant stakeholders.

Consent Condition C1 (e) states that the Environmental Representative shall:

> *Be given the authority to approve/reject minor amendments to the Construction Environmental Management Plan. What constitutes a "minor" amendment shall be clearly explained in the Construction Environmental Management Plan required under Condition C2.*

Minor amendments to the CEMP, that are within the authority limits of the Environmental Representative to approve, are defined as:

- Changes of a minor nature following a review of the CEMP (eg. any change in the name or numbering of a referenced document, changes to names or contact numbers of key personnel contacts);
- When there is a need to improve performance in an area of environmental impact; and
- As a result of changes in environmental legislation applicable and relevant to the project.

Major amendments to the CEMP would include changes:

- to the location of works that would result in impact outside or beyond those areas assessed as part of the Environmental Impact Statement;
- that result in works being inconsistent with the Minister Consent Conditions;
- result in a significant change to the approved projector
- would result in any potential environmental or social impacts of a greater scale or different nature than that considered in the approvals process.

3 PROJECT SPECIFIC DETAILS

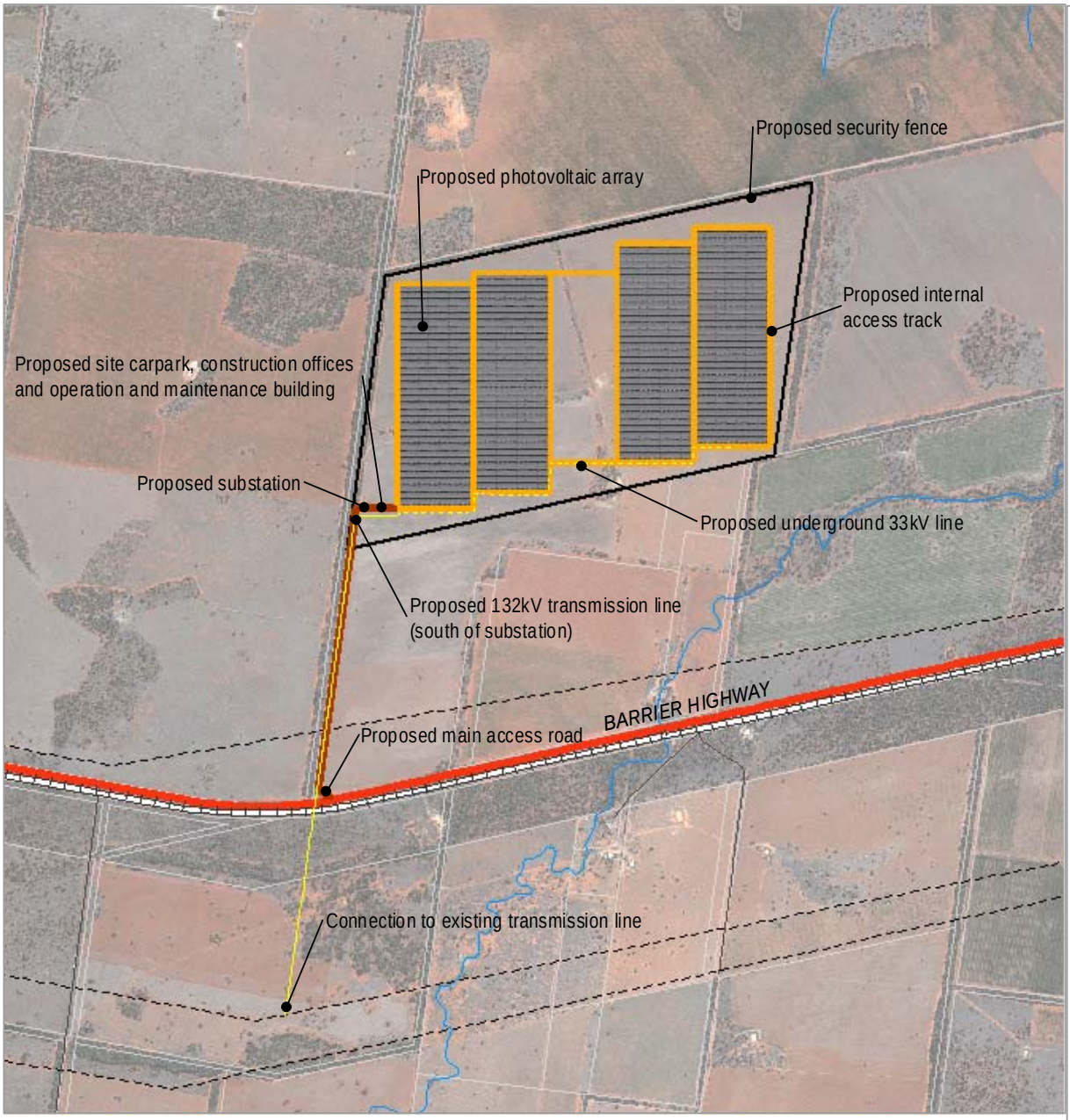
3.1 Project Details

Client	**AGL Energy Limited**
Principal Contractor	Consolidated Power Projects
Project Name	Nyngan Solar Plant
Project Number	**10427**
Project Address	Lot 34 DP 751328, Barrier Highway, Nyngan
CPP Project Manager	Edwin Munian (m) 0419 928 175
CPP Site Manager	Sturt Daley (m) 0411 249 024

3.2 Map of Project

The site is located approximately 10 km west of Nyngan on the northern side of the Barrier Highway (**Figure 1**).

The site is within the Bogan Shire Local Government Area. The local area is characterised by rural activities large holdings. Population density is low.


Proposed security fence
Proposed photovoltaic array
Proposed internal access track
Proposed site carpark, construction offices and operation and maintenance building
Proposed substation
Proposed underground 33kV line
Proposed 132kV transmission line (south of substation)
BARRIER HIGHWAY
Proposed main access road
Connection to existing transmission line

3.3 Project Scope of Works

3.3.1 Nyngan Solar Plant

The Nyngan Solar Plant development, as approved by the Minister of Planning and Infrastructure, includes:

- Photovoltaic arrays incorporating rows of solar panels mounted on fixed steel frames and a series of central inverters and transformers;
- aboveground and below ground electrical conduits and cabling to connect the arrays to the inverters and transformers;
- marshalling switchgear to collect the power from the PV arrays;
- a substation;
- construction of the above ground 132kV transmission line;
- deliveries of plant and equipment;
- site establishment, including pre-construction, construction, commissioning works and handover;
- internal access tracks, upgrades to existing roads, fencing, landscaping; and
- site office and maintenance building;

AGL has awarded works to two principal contractors, each with responsibilities for undertaking specific elements of the approved project. These contractors are First Solar (Australia) Pty Ltd and Consolidated Power Projects (CPP).

As a consequence of the above, pursuant to Consent Condition C2 of the Ministers consent, two separate Construction Environmental Management Plans (CEMP) are being prepared.

This CEMP is for those activities to be undertaken by CPP.

AGL has prepared a Staging Report for the overall construction and this CEMP has been prepared by reference to that document.

3.3.2 CPP Works

CPP has responsibility to construct the substation, the 132kV overhead power line and the 19.1kV SWER line, referenced in the AGL Staging Report as Stage 2.

These works include:

- site mobilisation and establishment of temporary construction facilities;
- construction of a raised earth pad in the solar plant switchyard;
- construction of a substation and associated switchgear;
- construction of approximately 3 km of 132 kV overhead power line;
- Connection to the existing Nyngan-Cobar 132kV transmission line;
- Construction of the 19.1kV SWER line to the Essential Energy Substation;
- Commissioning of the above electrical infrastructure; and
- Site de-mobilisation.

Power generated in the solar plant will be transformed in the substation to grid voltage via a 33/132kV transformer. A 132kV transmission line will connect from the substation to the existing Nyngan - Cobar 132kV transmission line.

The substation will feature a busbar, circuit breakers, current transformers, voltage transformers, and a 33/132kV transformer. It will be surrounded by security fencing and gravel, to restrict vegetation growth.

The substation will be divided into two separately-fenced sections, with one section owned and operated by AGL, and one section owned and operated by Essential Energy. Fencing will be installed by CPP to control unauthorised access and would be maintained by CPP until practical completion. Ongoing maintenance beyond practical completion would be the responsibility of AGL.

A new overhead transmission line and easement will be established to transmit energy generated at the solar plant to the electricity grid. The transmission line will be constructed over a length of approximately 3 kilometres from the south west corner of the solar plant site, extending due south to connect into the existing Nyngan - Cobar 132kV transmission line.

The transmission line will be a double circuit 132kV line with each circuit comprising three sets of conductors (wires), earth wire and potentially communications cables. Conductors will be attached to approximately 25 metre high spun concrete poles spaced approximately 150- 250 metres apart.

The 19.1kV SWER line will act as a backup supply to the Essential Energy Substation and will terminate into the substation via 2 x 50kVA pole-mounted transformers and a short length of underground low-voltage cable.

Vegetation within the electricity easement will be maintained to manage fire risk and allow maintenance and would primarily consist of overstorey clearance and groundcover species clearance within the 5 metre width of the electricity line. The easement will be 40 metres wide.

The transmission line and substation are located in a typically isolated landscape with reasonable buffers to sensitive receptors (minimum of 1800 metres). It is not anticipated that Electromagnetic Field (EMF) exposure to the general public would reach levels that would be detrimental to health. In any event, warning signs are to be erected around electrical infrastructure and at suitable places along the transmission line alignment to ensure that members of the public are aware of their purpose.

3.3.3 Contractor Interface

There is the potential that for a short period (approximately February to July 2014) both First Solar and CPP construction activities will occur on site simultaneously.

The primary interface between contractors will be between vehicles associated with the separate elements of the project using the internal access road, to be built and managed by First Solar. Interfaced induction processes have been agreed with First Solar to ensure that all CPP contractors and sub-contractors are appropriately inducted for use of this access road.

The Traffic Management Plan (refer **Section 6.14 and Appendix E**) as prepared, has quantified and considers the extent of this cumulative impact and is structured to ensure both First Solar and CPP operate under the same controls during this period.

Additional project interface will occur in the form of electrical and communication connections between the AGL transmission yard and First Solar building. This will be managed through the use of interface diagrams –example interface diagrams are provided at in the **Drawings** section of this CEMP.

Interface is also possible in the form of simultaneous working, in relation to the construction of the access road by First Solar and the commencement of transmission line by CPP; both to be located within the proposed 40 metre wide easement. It is understood that the access road would be constructed in late February/early March 2014, with the transmission line commencing construction in late March. If any slippage occurs in the construction of the access road, there is the potential for contractors from both parties to be working within the same locality. This potential interface would be managed through weekly meetings between the contractors and implementation of consistent CEMP controls.

CPP would also require a supply of water and would seek to ensure that this is jointly managed with First Solar to reduce utility services entering the site – refer **Section 6.16**.

3.4 Map of Offices, Amenities and Easement

CPP buildings have been located as far as practical from residences, farm sheds, and yards in order to reduce the potential for both chronic and acute exposure to EMFs in accordance with Mitigation Measure (MM) 43. The colour of above ground structures, including the construction site offices, would be sympathetic to the landscape character of the site to minimise visual contrast in accordance with MM 40.

A site layout of the temporary construction compound, the substation, and the interface between the CPP Site and the First Solar Site during construction is detailed as **Figure 2** overleaf.

Erosion and sedimentation controls to be installed and maintained throughout the construction phase are also shown.

A layout diagram of the proposed electricity easement within the adjacent to lot is provided in **Figure 1**.

3.5 Site Map Showing Contractor Footprints

Figure 2 provides a site map showing the interface between the CPP and First Solar portions of the site. There would be a logical interface between the areas of work on the eastern periphery of the CPP site area.

3.6 Project Timing

CPP anticipates that physical construction of the transmission line and substation would commence in January/March 2014 and occur over the subsequent six month period.

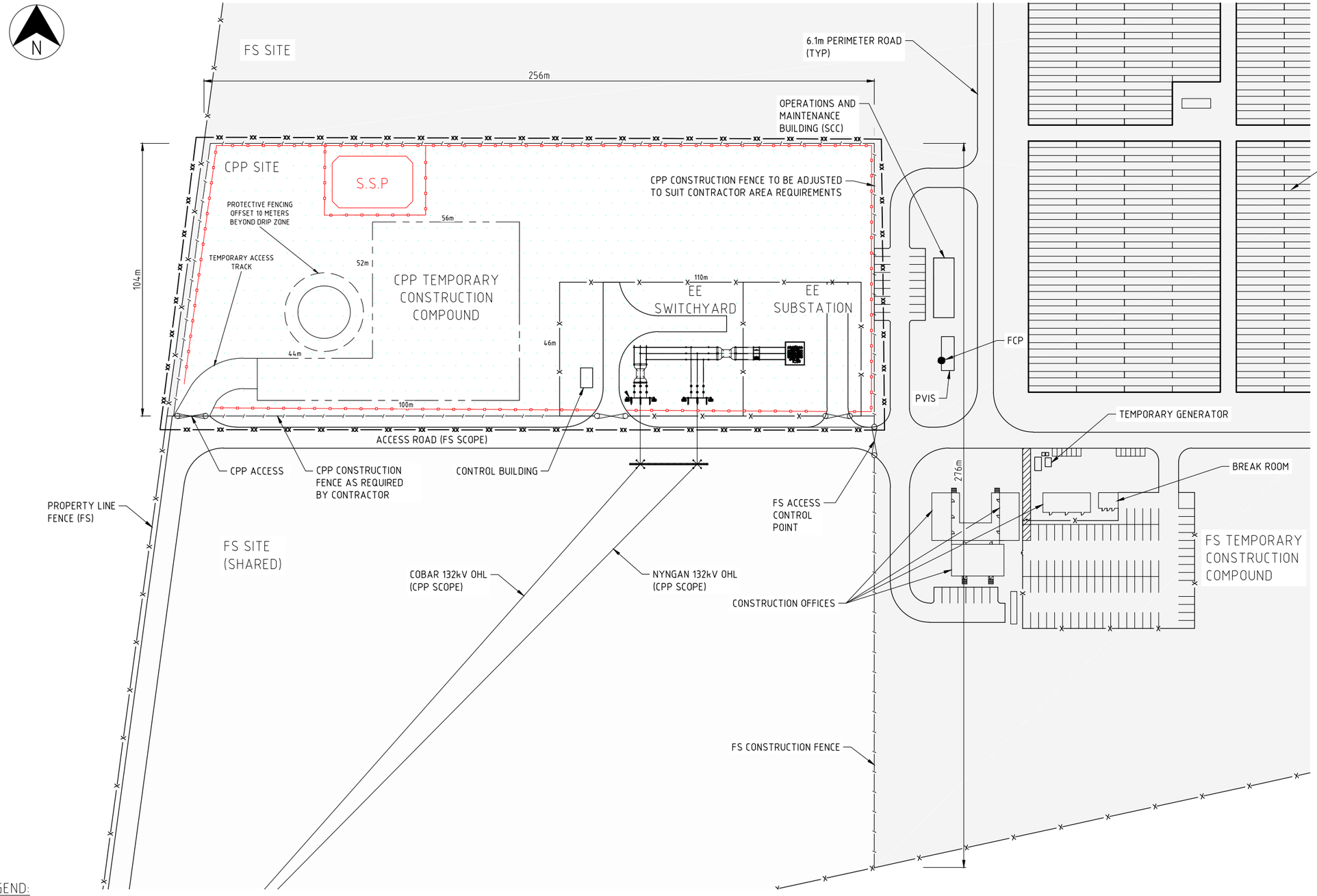
3.7 Local Resources

In accordance with Mitigation Measure 50, the Project Manager would engage, via advertisements in the local paper and targeted correspondence, to identify local contractors with the required skills to contribute to the project. CPP is committed to utilising local contractors where possible.

In accordance with Mitigation Measure 51, the Project Manager will investigate and manage the use of local accommodation options in advance of the commencement of construction to ensure that local services are not detrimentally impacted. Given the (comparatively) small workforce required to complete the CPP component of the works, it is not anticipated that accommodation requirements associated with CPP operations would have a significant or detrimental impact on local accommodation availability.

3.8 Local Consultation

Consultation with local residents and other key stakeholders emerges via various requirements of the conditions of consent and mitigation measures, including but not limited to conditions C2 and C3, and mitigation measures 21, 46, 47 & 49. Typically, and unless stated otherwise in this document, such consultation would be the responsibility of the proponent (AGL) and would be addressed via the preparation of the AGL Community Consultation Management Plan. CPP would provide such support, personnel and information as required to enable AGL to successfully prepare and deliver this document, to the satisfaction of the DoPI.

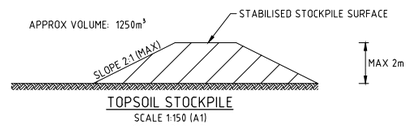


NOTES:

1. TEMPORARY FENCE AROUND CONSTRUCTION AREAS TO BE PROVIDED BY CONTRACTOR TO SUIT CONTRACTOR CONSTRUCTION REQUIREMENTS.
2. AREAS FOR CONSTRUCTION SHOWN INDICATIVE ONLY, CONTRACTOR TO ADJUST TO SUIT CONSTRUCTION REQUIREMENTS.

LEGEND:

- SUBSTATION PERMANENT SECURITY FENCE
- CONSTRUCTION FENCE
- SEDIMENT FENCE
- S.S.P — SOIL STOCKPILE
- EXTENT OF WORKS



TOPSOIL STOCKPILE
SCALE 1:150 (A1)
SCALE 1:300 (A3)

LEGEND:

EE - ESSENTIAL ENERGY
FS - FIRST SOLAR
CPP - CONSOLIDATED POWER PROJECTS
FCP - FACILITY CONNECTION POINT
- FS SITE (SHARED)
- FS SITE
- CPP SITE

DETAILED PLAN

SCALE 1:800 (A1)

0 20 40 60 80m
16 8

SKM
A.C.N 001 024 095
Sinclair Knight Merz
100 Christie Street
St Leonards, SYDNEY, NSW 2065
AUSTRALIA
Tel: +61 2 9928 2100
Fax: +61 2 9928 2500
Web: www.globalskm.com

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	23/12/13	ZD	AB	FOR INFORMATION

CHECKED/APPROVED	NAME	DATE
APPROVED	AB	23/12/2013
SURVEY	-	.
DESIGNER	-	.
DRAFTING	-	23/12/2013

APPROVAL AUTHORITY
NSW DEPARTMENT OF PLANNING & INFRASTRUCTURE

CLIENT
CONSOLIDATED POWER PROJECTS

PROJECT
NYNGAN CONNECTION ASSEST

GEOLYSE
ORANGE
orange@geolyse.com
www.geolyse.com
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

DRAWING
EROSION AND SEDIMENTATION CONTROLS

PERMANENT MARK: -	RL: -	DATUM: A.H.D.	
PROJECT NUMBER: 213340	DRAWING SHEET: 01A_E01	ORIGINAL A1	
AUTOCAD FILE: 21340_03B_ENV.dwg	12D/CIVILCAD FILE: -	REVISION A	
STATUS: FOR INFORMATION	SHEET E01 OF E01		

4 ROLES AND RESPONSIBILITIES

4.1 Project Manager

The role of a Project Manager is to perform the role of "Officer" as defined in the Work Health and Safety Act and Regulations. To perform this role the following should be performing as a minimum:

- Evaluate specifications, coordinate and plan, procedures, start and completion times, staffing requirements for each phase of construction;
- Conducting of Safety and Environmental Risk Assessments;
- Liaise with the WHSE and QA Manager to ensure compliance to client and regulatory requirements;
- Liaise with Site Managers, engineering, cost control and other stakeholders prior to the commencement of the project;
- Inspection of work areas to determine type of work, materials, labour and equipment required;
- Direct Site Managers and Sub Contractors under their control in the planning and execution of work procedures, interpreting specifications and the co-ordination of various phases of construction to prevent delays;
- Communicate to Site Managers the materials, plant and equipment to be used on site;
- Ensures that Site Managers conduct Daily Pre-Start and Sign on registers prior to commencement of daily activities;
- Ensure that Site Managers keep plant and equipment regularly maintained;
- Ensure Site Managers and staff comply with this CEMP, all statutory regulations and the CPP Management System;
- Ensure that Sub Contractors are selected and evaluated to ensure their ability to comply with above mentioned Regulations and Systems.
- Ensure any Sub Contractor's working on the project are compliant with the above mentioned regulations and systems;
- Ensure that production schedules are met to enable the completion of the Project in a timely manner.
- Liaise with Site Managers to establish and adjust work procedures to meet production schedules;
- Manage personnel, inspectors and suppliers to resolve construction problems and improve construction methods;
- Recommend measures to improve production methods, equipment performance and the quality of the end product;
- Prepare reports on progress, materials used and costs and adjust work schedules as indicated by those reports;
- Prepare and present claims and variations to the client in a timely manner;
- Ensure that procurement procedures are followed;
- Orders Stop- Work if any items as flagged in the CEMP are in danger of being breached;
- Ensures licences are held by waste contractors where necessary i.e. PCB and asbestos management;

- Release of delegate environmental hold points;
- Act as public spokesman for CPP interfacing with concerned public and regulatory authorities;
- Responsible for ensuring the quality of the work, WHS of all staff under their control, environmental compliance, client and stakeholder satisfaction;
- Appraisal of employee performance: rewarding and disciplining employees: identify training needs of staff on site;
- In the absence of the Site Manager appoint a competent officer to assume the role of the Principal Contractors on Site Representative and Site Environmental Compliance Officer);
- Address complaints and resolve problems;
- Liaise with other site contractors, including but not limited to First Solar, to ensure that opportunities for interface and coordination are appropriately explored

4.2 Site Manager

The role of a Site Manager is to perform the following as a minimum:

- Perform the role of CPP's Site Environmental Compliance Officer;
- Inspection of work areas to determine type of work required materials, labour and equipment to be used;
- Identify aspects and impacts;
- Conducting daily site assessments prior to commencement of daily activities.
- Ensure that plant and equipment is kept regularly maintained;
- Ensure subcontractors working on the project are compliant with the above mentioned regulations and system;
- Ensure that production schedules are met to enable the completion of the project in a timely manner;
- Interpret Job / Work Orders and specifications to workers and assigns individual duties;
- Establish and adjust work procedures to meet production schedules;
- Recommend measures to improve production methods, equipment performance and the quality of the end product;
- Analyse work problems and assist workers in resolving work problems;
- Initiate or suggest plans to motivate workers to achieve work goals;
- Maintain time and production records via the daily site diary;
- Maintain daily records of any works that are deemed by his Engineer or Project Manager to be a variation to the project;
- Ensure environmental compliance, client and stakeholder satisfaction while carrying out any work for CPP;
- Orders Stop-Work if any items as flagged in the CEMP are in danger of being breached;
- Be available for regular ER inspections of the site;
- Conduct regular (at least weekly) environmental inspections of the site under CPP systems;
- Interface with First Solar on environmental management issues that are relevant to both sites;
- Provide relevant references to implementing the CEMP;
- Include activities as defined under 5.2 Lead Indicators; and
- Delivery of training in requirements of CEMP through toolbox and induction training.

4.3 WHSE & QA Manager/Coordinator

The WHSE and QA Manager/Coordinator is not a site based role, however a full time WHSE & QA representative would be located on site. The manager position would be based in CPP's Sydney office. The manager would perform or oversee the following functions as a minimum;

- Implement and maintain an WHSE Management System across all Projects, in accordance with regulatory requirements and AS/NZS ISO 14001;
- Report the performance of the Environmental Management System and Site Performance to Senior Managers on a monthly basis for review and as a basis for improvement of the Management System;
- Facilitate the continual improvement of environmental management practices across the company and to ensure that procedures are prepared and implemented to eliminate or reduce the cause of actual or potential aspects and impacts;
- Develop and implement policies, procedures, CEMPs, safe work method statements and related registers and documents for new and existing contracts;
- Prepare, maintain and implement a yearly audit programme addressing the Management System with particular emphasis on AS/NZS ISO 14001;
- Prepare, maintain and implement an audit programme for Project Managers and Site Managers etc.;
- Conduct Environmental audits in accordance with audit procedures to evaluate compliance of the management system (with particular emphasis on AS/NZS ISO 14001), policies, procedures, CEMPs, safe work method statements and related registers and documents with legislative and corporate requirements;
- Prepare, implement, maintain and audit emergency evacuation processes and procedures;
- Analyse audits, non-conformances, corrective actions, positive behaviours, and all other information submitted by Project Managers and Site Managers;
- Facilitate the development of a training needs analysis to ensure WHSE training and development initiatives are consistent with organisational and legislative requirements and have a risk management focus;
- Liaise with Project Managers and Site Managers to enhance the Environmental Management System and ensure it meets the identified needs of specific projects;
- Provide specialist advice in relation to environmental systems, management and compliance to legislative requirements;
- Liaise with the third party certification bodies to ensure audits and corrective actions are followed through to a satisfactory conclusion;
- Develop internal communications (Memos and Toolbox Talks)
- Conduct investigations of incidents and accidents that occur within the workplace and to recommend appropriate corrective actions;
- Ensure all incidents, non-conformances, and improvement opportunities are correctly implemented within a prescribed timeframe and closed out and entered onto the appropriate registers;
- Ensure incident, non-conformance and complaints registers are maintained up to date and analysed on a monthly basis for trends;
- Work closely with the Human Resources Manager to ensure that Environmental strategies are integrated and implemented;
- Contribute to the continual improvement of the management system through effective participation in the corporate management meetings and ensuring feedback from site employees is sought and considered;

- Completion of General Induction;
- Be available for regular ER inspections of the site;
- Conduct regular (at least weekly) environmental inspections of the site under CPP systems;
- Interface with First Solar on environmental management issues that are relevant to both sites;
- Provide relevant references to implementing the CEMP;
- Include activities as defined under 5.2 Lead Indicators; and
- Delivery of training in requirements of CEMP through toolbox and induction training.

4.4 Project Ecologist

The role of the Project Ecologist is to perform as a minimum:

- Comply with all measures and requirements as contained within this CEMP;
- Clearly mark the extent of any vegetation to be removed;
- Oversee clearing, HBT removal, hollow relocation, nest box establishment and CWD placement in accordance with the above procedures;
- Monthly monitoring of next boxes;
- Provide input relating to ecological obligations for the General Induction document;
- Conduct pre-clearance surveys prior to felling HBTs (if required) and be present on-site during HBT felling;
- Undertake any and all handling and relocation of native fauna;
- After felling, re-check HBTs to ensure no animals have become trapped or injured during clearing operations;
- Specifying the location for placement of salvaged hollows and coarse woody debris within the north-south oriented strip of native vegetation that will run through the centre of the solar plant site;
- Measure and record with GPS the exact areas impacted by construction to ensure that the actual, not estimated area is offset in the Biodiversity Offset Plan;
- Design and locate nest boxes and undertake monthly monitoring; and
- Conduct pre-clearance surveys for Grey-crowned Babbler nests in the vicinity of the transmission line easement and verify that any nests found are inactive.

4.5 Employees

The role of employees is to perform following as a minimum:

- Comply with all measures and requirements as contained within this CEMP;
- Performing all duties in a manner which will ensure the environment is not impacted;
- Complying with the responsibilities assigned under relevant legislation;
- Observing the Environmental rules and regulations;
- Being alert at all times to potential aspects and impacts;
- Participating in the identification and elimination of aspects and impacts;
- Checking machinery daily to ensure there are no defects;
- Actively participating in inductions tool box talks, consultation and communication programmes and training programs;
- Actively participating in injury management and rehabilitation programs; and
- Assisting in investigation of accidents/incidents as required.

4.6 Contractors

The role of Contractors is to perform the following as a minimum:

- Comply with all measures and requirements as contained within this CEMP:
- Performing all duties in a manner which will ensure the environment is not impacted;
- Complying with the responsibilities assigned under relevant legislation;
- Observing the Environmental rules and regulations;
- Being alert at all times to potential aspects and impacts;
- Participating in the identification and elimination of aspects and impacts;
- Checking machinery daily to ensure there are no defects;
- Actively participating in inductions tool box talks, consultation and communication programmes and training programs;
- Actively participating in injury management and rehabilitation programs; and
- Assisting in investigation of accidents/incidents as required.

4.7 Environmental Representative

Condition C1 of the Development Consent requires AGL (as the Applicant) to:

C1. Prior to the commencement of construction of the development, or as otherwise agreed by the Director-General, the Applicant shall nominate for the approval of the Director-General a suitably qualified and experienced Environmental Representative(s) that is independent of the design and construction personnel. The Applicant shall employ the Environmental

Representative(s) for the duration of construction, or as otherwise agreed by the Director-General. The Environmental Representative(s) shall:

(a) Be the principal point of advice in relation to the environmental performance of the development;

(b) Monitor the implementation of the environmental management plans and monitoring programs required under this consent and advise the Applicant upon the achievement of these plans / programs;

(c) Have responsibilities for considering and advising the Applicant on matters specified in the conditions of this consent, and other licenses and approvals/consents related to the environmental performance and impacts of the development;

(d) Ensure that environmental auditing is undertaken in accordance with the Applicant's Environmental Management System(s);

(e) Be given the authority to approve / reject minor amendments to the Construction Environmental Management Plan. What constitutes a "minor" amendment shall be clearly explained in the Construction Environmental Management Plan required under Condition C2;

(f) Be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur; and

(g) Be consulted in responding to the community concerning the environmental performance of the development where the resolution of points of conflict between the Applicant and the community is required.

The approved Project Environmental Representative (ER) for the construction of the Nyngan Solar PV Power Station is Michael Woolley of MCW Environmental.

In addition to the above matters identified in Condition C1, the following specific responsibilities of the ER are noted by reference to this CEMP:

- Maintain and file routine site records;
- Has the authority to authorise minor amendments to the CEMP;
- Conduct regular site inspections with the site manager;
- Conduct oversight of auditing and inspection processes and ongoing review of compliance with the CEMP;
- Report directly to the DP&I; and
- Receive notification of incidents and providing reporting to DP&I.

4.8 Communicating Roles

Roles and responsibilities will be communicated to project personnel during the CPP General Induction process.

Upon completion of the Project Induction all personnel will complete *FRM-S136 Project Induction Declaration* which also contain their roles and responsibilities for this project.

5 OBJECTIVES AND TARGETS

5.1 What are Objectives and Targets

WHSE objectives and targets are set annually to meet Consolidated Power Projects Corporate Policy assurances and to enhance processes and activities identified as having the most significant risks and impacts. The objectives set are quantifiable, where practicable, as targets. The objectives and targets are set at a corporate level and are collated in our procedures and operational controls.

To assist with achieving our corporate objectives the following lead and lag indicators have been developed for the project.

5.2 Lead Indicators

Lead Indicator	Target	Responsibility
CEMP Audit	1 within 3 months of the project commencing and 1 every 12 months thereafter	WHSE and QA Manager/Coordinator
Weekly Site Inspection/Assessment by CPP	1 per week	Site Manager
Toolbox talk meetings by CPP	1 per week	Site Manager
Visits by Senior CPP Manager	1 per month	Project Manager
CPP Task Observation	1 per month	WHSE and QA Manager/Site Manager
Sub-Contractor Task Observation	1 per month	Site Manager
Aspects and impacts register review	1 review every 3 months	WHSE and QA Manager/Site Manager
Reporting of hazards/near misses	Ongoing	All

5.3 Lag Indicators

Lag Indicator	Target	Responsibility
Recorded No. of Incidents	<= 0 per project	Site Manager
Recorded No. of Continuous Improvement Notices (CIN's)	<= 0 per month	WHSE and QA Manager/Site Manager

Progress of lead and lag indicator targets will be addressed during the Site Managers monthly report which in turn will be a key item discussed at the project monthly meetings.

If targets are not being achieved strategies will be developed at these meetings to achieve these targets.

6 INTEGRATED MANAGEMENT SYSTEM PROCEDURES

6.1 Audits and Inspections

6.1.1 Audits

Project audits shall be scheduled by the Project Manager and form part of the company's audit schedule.

Prior to the project commencing an audit schedule will be developed by the Project Manager and documented in *REG-M004 Audit Register* by the WHSE and QA Coordinator.

Audits shall address the requirements of AS/NZS 4801, AS/NZS ISO 14001, CPP Management System and the various Management Plans with particular emphasis on this CEMP.

The aim of the audits is to not only verify compliance and implementation of this CEMP but to also identify improvements to this plan and the Management System as a whole.

Audits shall include but not be limited to:

- Determine whether the CEMP has been effectively implemented and maintained;
- Check to confirm that all actions listed are being completed and signed off;
- Evaluate the CEMP against the purpose identified in **Section 2.1**;
- Check that the routine site records are being maintained and filed by the Environmental Representative (ER);
- Review of the CEMP Review's being undertaken by the ER to ensure that the reviews are being undertaken in accordance with this plan;
- Review of Incident Management as discussed in **Section 6.6** to ensure that reporting requirements, incident investigations and incident close outs are occurring in accordance with the CEMP;
- Review of compliance against the documentation identified in Condition A2 of SSD-5355 (as it relates to the Construction Phase and the activities of CPP), including a review of compliance against the Development Consent Conditions;
- Discuss implementation of the CEMP with the CPP Project and Site Managers and the AGL Environmental Representative to ensure that all elements of the CEMP remain applicable;
- Check that there are no outstanding follow-up actions that have yet to be closed off;
- CEMP audits will be recorded on the appropriate form as identified in **Appendix E**; and

The responsibility for audits would be as set out in **Section 6.1** of this report.

6.1.2 Inspections

Inspections will be conducted by the Site Manager on a weekly basis using *FRM-C063 Site Weekly Review Log* .

All work areas of the CPP elements of the project will be inspected, including sub-contractors work areas.

Inspections would include, but not be limited to, assessment of environmental impacts identified throughout this CEMP that are associated with the project and confirmation that proposed mitigation measures are being employed and are effective – further detail of specific responsibilities in respect of inspection and CEMP compliance and review is contained with **Section 4**.

6.1.3 General

Items identified by auditors during audits will be recorded on *FRM-M002 Continuous Improvement Notice and* registered on *REG-M005 Continuous Improvement Notice Register*. This register will be analysed for trends on a monthly basis by the WHSE and QA Manager.

6.1.4 Environmental Representative

Condition C1 of the Project Approval required AG the engagement of an Environmental Representative (ER) to provide oversight of the project and ensure compliance with the Project Approval consent conditions – refer **Section 4.7**.

This would be achieved through regular inspections (on average monthly but more frequent in the initial stages of the project) together with oversight of auditing and inspection processes and ongoing review of compliance with the CEMP.

6.2 Complaints

Project Approval SSD-5355 contains at C2 (j), C13 and C14 requirements in respect of complaint handling.

It is noted that during the construction phase, complaint handling would be the primary responsibility of the Applicant (AGL). CPP would ensure that any complaints received from Government Departmental Officers, interest groups or the general public would be provided to the Applicant, thereby ensuring compliance with the above relevant conditions.

All complaints shall be treated with respect and reported immediately to the Applicant and the ER.

Should any complaints be received, CPP will record the complaint on *FRM-M002 Continuous Improvement Notice*, and log the complaint on *REG-M005 Continuous Improvement Notice Register*. This register will include details of the complainant, date and nature of complaint etc. A copy of this would be used to provide the Applicant with the full details of the complaint, and a copy of the record would be kept on CPP's files for auditing purposes.

Complaints received by CPP about CPP activities would be fully investigated by the Project Manager and full details of the incident and response would be recorded and provided to the ER.

6.3 Emergency Response

6.3.1 Introduction

Condition C3(o) requires that emergency management procedures, including measures to control bushfires shall be addressed within the CEMP. This section of the CEMP addresses those matters relating to emergency management whilst **Section 6.4** deals with matters relating to bushfire risk including control measures, insofar as they relate to the elements of the project for which CPP is responsible.

6.3.2 Planning

The Site Manager will prepare emergency response procedures prior to commencing work on this project.

The emergency response procedures will be prepared following a review of *FRM-S031 Hazard and Risk Assessment Register*.

This review will be documented using *FRM-S142 Emergency Requirements Assessment Form*.

The review will clearly identify the following:

- The type and number of emergency response equipment;
- The frequency of inspections required for emergency response equipment;
- The frequency of emergency response trials; and

- The training required i.e. first aid, fire wardens, and emergency control wardens.

Following this assessment the emergency response plans for this project are:

- *FRM-S111 Emergency Response Plan-From Site;*
- *FRM-S112 Emergency Response plan-Travelling to and From Site;*
- *FRM-S113 Emergency Response Plan-Bush Fire;*
- *FRM-S108 Emergency Response Plan-Elevated Work Platforms;*
- *FRM-S109 Emergency Response Plan-Plant from Electrical Conductors;*
- *FRM-S110 Emergency Response Plan-Personnel from Electrical Conductors;*
- *FRM-S114 Emergency Response Plan-Confined Spaces;*
- *FRM-G004 Emergency Spill Response Plan.*

6.3.3 Effectiveness and Trials

Typically the effectiveness of the emergency response plans will be determined by the site manager in the following situations

- Within 14 Days of commencing the work activity connected to the emergency evacuation plan;
- At intervals no greater than 6 months;
- Whenever revised safe work method statements directly impact on the emergency evacuation plan;

The effectiveness of trials will be recorded in *FRM-S115 Emergency Response Review*.

6.4 Fire Fighting, Fire Bans and Bushfire Management

6.4.1 Overview

The local bush fire season in the Nyngan area generally occurs annually between October and March. The predominate weather conditions through the fire season are north-westerly winds with high daytime temperatures and low relative humidity.

The North West Bush Fire Risk Management Plan identifies that the main ignition sources for bush fires include electrical storms, lightening, ignition from farming and arson.

The nearest Rural Fire Service (RFS) Station is located in Nyngan township (65 Cobar Street) approximately 10km from the site.

6.4.2 Bushfire Management Plan

6.4.2.1 Requirement

This Bush Fire Management Plan has been prepared to meet applicable requirements of:

- Development consent condition B3;
- Development consent condition B4; and
- Mitigation measure 58.

Condition B3 states:

The applicant shall ensure that all development components on site are designed, constructed and operated to minimise ignition risks, provide for asset protection consistent with relevant NSW Rural Fire Service (RFS) design guidelines (Planning for Bushfire Protection 2006 and Standards for Asset Protection, undated) and provide for necessary emergency management including appropriate fire-fighting equipment and water supplies on site to respond to a bush fire.

Condition B4 states:

Throughout the operational life of the development, the Applicant shall regularly consult with the local RFS to ensure its familiarity with the development, including the construction timetable and the final location of all infrastructures on the site. The Applicant shall comply with any reasonable request of the local RFS to reduce the risks of bushfire and to enable fast access in emergencies.

Mitigation Measure 58 states:

Develop a Bush Fire Management Plan with input from the RFS to include but no be limited to:

- *Management of activities with a risk of fire ignition – refer 6.4.1.3;*
- *Management of fuel loads onsite;*
- *Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bush fire suppression.*
- *The below requirements of Planning for Bush Fire Protection 2006 –*

– *Identifying asset protection zones,*

– *Providing adequate egress/access to the site,*

– *Emergency evacuation procedures.*

- *Operational procedures relating to mitigation and suppression of bushfire relevant to the solar plant; and*
- *Post-fire clean up procedures, including the need for sampling for emissions of cadmium and lead, where appropriate*

The BMP has been separately provided to the RFS who have confirmed its adequacy.

6.4.2.2 Scope

The scope of this Bush Fire Management Plan is to focus exclusively on measures required to be adopted prior to and during the construction phase.

The objectives of this Bush Fire Management Plan are to:

- Define appropriate measures and processes to minimise bushfire related risks during the construction of the Nyngan Solar Farm in the context of the specific ignition risks provided in Section 7.7.2 of the NGH environmental EIS (reproduced in **Section 6.4.2.3**);
- Confirm the intent to continue to engage with the Rural Fire Service (RFS) in the implementation of this Plan as the construction schedule progresses;
- Provide a monitoring, auditing and reporting framework to ensure the effectiveness of the controls implemented; and
- Respond to the specific mitigation measures identified within the EIS.

6.4.2.3 Ignition Risks

Section 7.7.2 of the EIS provides details of ignition risks associated with the project, reproduced as follows:

- *Smoking and careless disposal of cigarettes on site;*
- *Site maintenance activities such as mowing, slashing and using other petrol powered tools.*
- *Welding and soldering activities;*
- *Operating a petrol, LPG or diesel powered motor vehicle over land containing combustible material; and*
- *Operating plant fitted with power hydraulics on land containing combustible material.*

6.4.2.4 Actions

CPP commits to undertake the following actions in the management of the specific portion of the site to which their activities relate. By virtue of the following actions it is considered that the requirements of condition B3 are satisfied.

6.4.2.4.1 Management of fuel loads onsite

Throughout construction the areas immediately around infrastructure would be managed to prevent the build-up of combustible matter. Given the relatively small portion of the site for which CPP has responsibility, it is considered that this would be managed on an as needs basis by the Site Manager. The area around the substation would be gravel sealed to minimise vegetation growth and maintained. The area of the transmission line would be cleared of over storey vegetation.

Details of any clearance measures taken would be documented and recorded on the project file for later review as required. Details would also be provided to the ER and to AGL to enable compliance monitoring in conjunction with DP&I to take place.

The clearance and gravel seal would ensure that an asset protection zone, in accordance with Planning for Bush fire Protection 2006 (PBFP) would be provided.

6.4.2.4.2 Fire-fighting equipment

During construction trailer mounted water tankers with fire-fighting pumps and spray hoses would be available on site at all times.

Figures 3 and 4 identify site static water supply and surrounding static water supply in the locality.

An existing 1.2 mega litre farm dam is located midway on the southern boundary of the site and this would be retained to provide a watering point for tanker access. It is noted that First Solar will provide both a 1.2 cubic metre dust suppression pond and a bush fire water tank on site.

6.4.2.4.3 Access

Access to the site would be provided in consideration of the provisions of Section 4.2.7 of PBFP, specifically ensuring both accessibility for emergency workers and safe access/egress for construction workers. A set of gate keys will be provided to RFS to ensure access to the site as required.

6.4.2.4.4 First Response

CPP will have fire extinguishers available in all vehicles. CPP will only utilise fire extinguishers for life safety evacuations or for putting out small fires where the operator of the fire extinguisher has been trained in its use.

It is not proposed that CPP would provide a specific first response in a fire situation beyond that required to ensure life safety.

6.4.2.4.4.1 Emergency evacuation procedures

Appropriate emergency evacuation procedures would be provided in consideration of the provisions of Section 4.2.7 of PBFP and in accordance with CPP's standard emergency evacuation plan (*FRM-S113 Emergency Response Plan-Bush Fire*) – refer **Appendix D**.

All personnel on site would be made aware of the emergency evacuation protocol as part of General Induction**.**

6.4.2.4.5 General Actions

The following general actions have been developed to augment the above specific measures.

Constantly monitor and advise fire danger status.

The fire danger status shall be obtained through the RFS website http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1109 and communicated at the contractor sign-in register daily.

Nyngan is located in Zone 14 as per **Figure 5**.

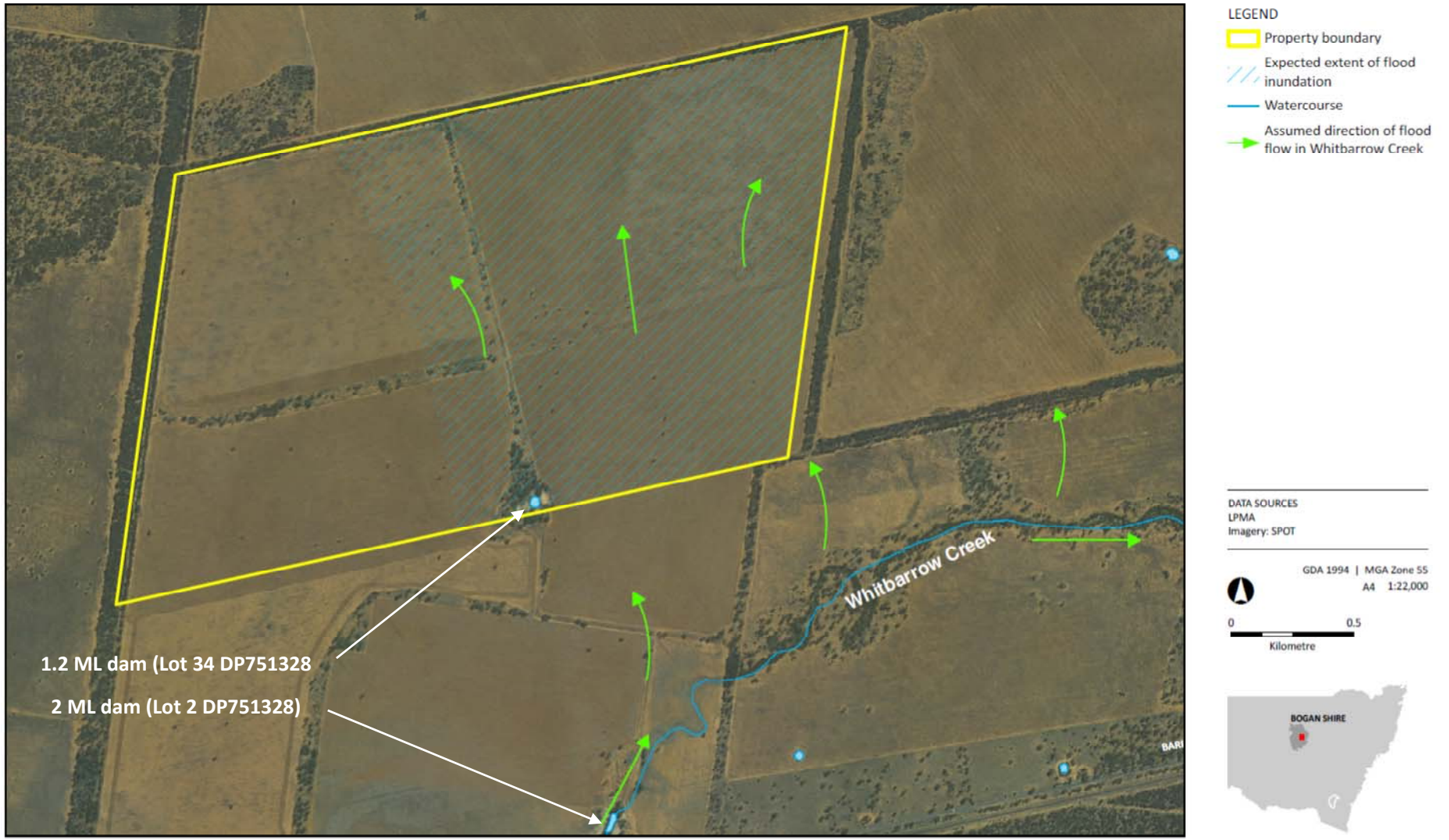


Figure 6-2 Inundation zones at the solar plant site.

(Source: SKM 2011)

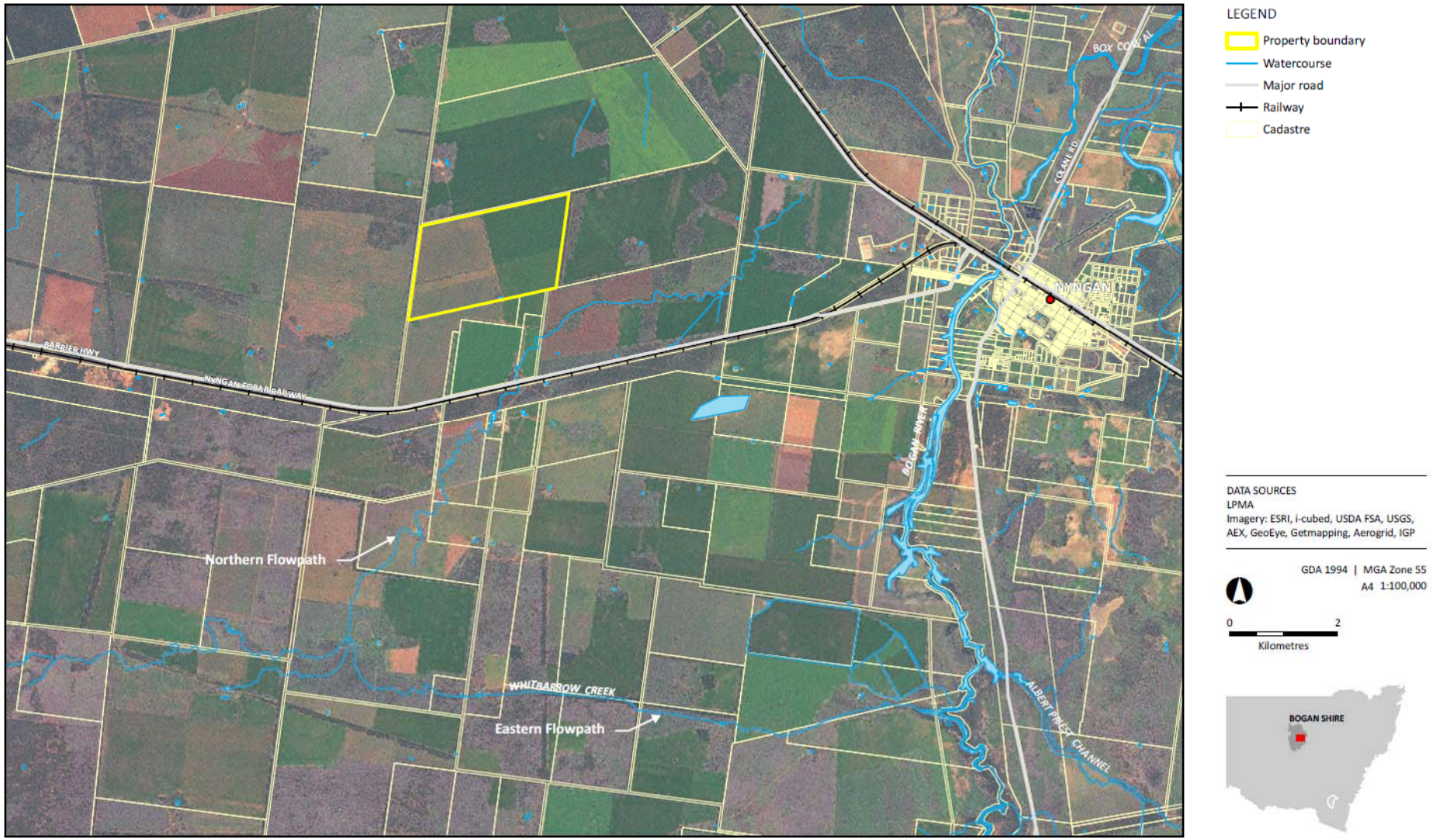
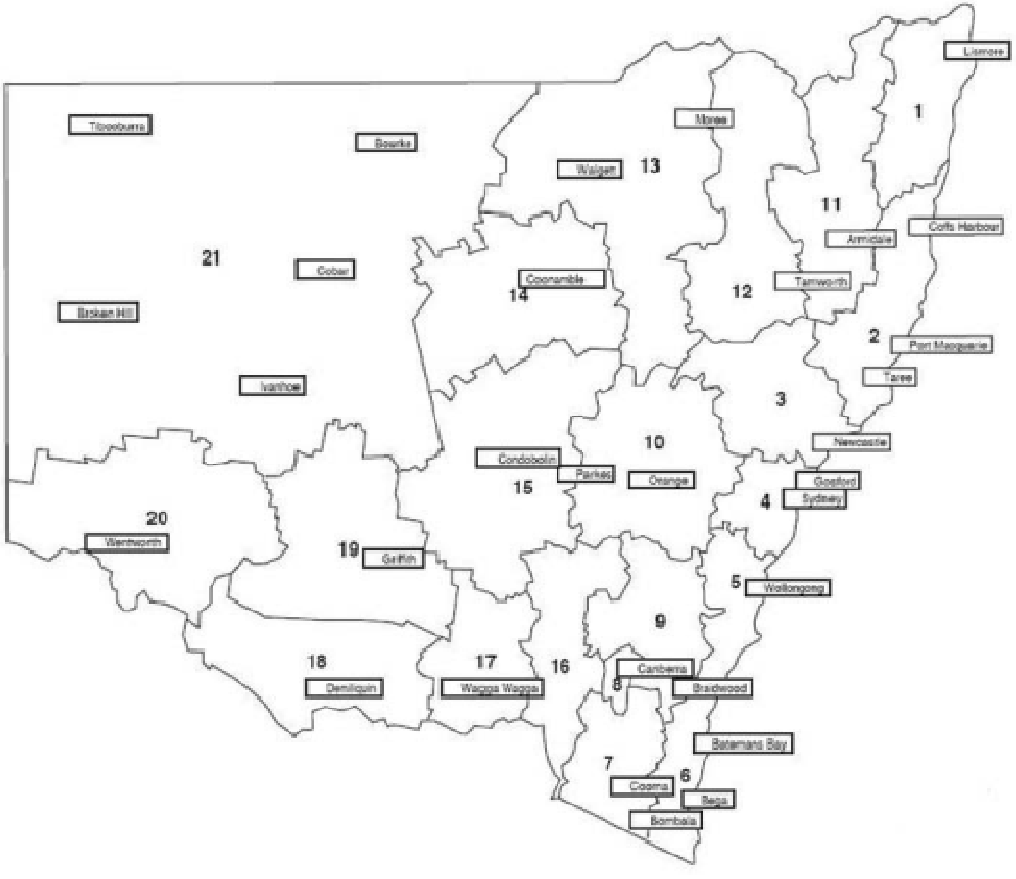


Figure 6-1 Watercourses in the Nyngan locality.

(Source: SKM 2011)


Tibooburra
Bourke
Walgett
13
Moree
1
Lismore
11
Armidale
Coffs Harbour
21
Cobar
Coonamble
14
12
Tamworth
Broken Hill
2
Port Macquarie
Ivanhoe
Taree
3
Newcastle
10
Condobolin
Parkes
Orange
15
Gosford
Sydney
4
20
Wentworth
19
Griffith
5
Wollongong
9
18
17
16
Canberra
8
Braidwood
Deniliquin
Wagga Wagga
Batemans Bay
7
6
Cooma
Bega
Bombala

Adhere to Total Fire Ban rules

The *Rural Fires Regulation 2008* states:

A person must not, in connection with any agricultural, pastoral or other land use, drive or use in any grass, crop or stubble land any motorised machine unless:

- *the machine is constructed so that any heated areas will not come into contact with combustible matter, and*
- *The machine is maintained in a good and serviceable condition so as to prevent the outbreak of fire.*

A person must not, in connection with any agricultural, pastoral or other land use:

- *drive or use in any grass, crop or stubble land, a motorised machine on which it is practicable to carry prescribed fire safety equipment, or*
- *carry out welding operations or use explosives or an angle grinder or any other implement that is likely to generate sparks,*
- *Unless the person carries on the machine, or has in the vicinity, prescribed fire safety equipment that is maintained in a serviceable condition.*

No intentionally lit fires for any purpose

No fires will be intentionally lit for any purpose.

Extinguish and/or contain when safe to do so

Pursuant to the *Rural Fires Act 1997* (RFA, 1997):

- It is the duty of the owner or occupier of land to take notified and practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of bush fires on or from, that land;
- If a fire (not being a fire or part of a fire lit under the authority of this Act or any other Act) is burning on any land at any time during a bush fire danger period applicable to the land the occupier of the land must:

  (a) Immediately on becoming aware of the fire and whether the occupier has lit or caused the fire to be lit or not, take all possible steps to extinguish the fire, and

  (b) If the occupier is unable without assistance to extinguish the fire and any practicable means of communication are available, inform or cause to be informed an appropriate officer of the existence and locality of the fire if it is practicable to do so without leaving the fire unattended.

Storage of fuel and combustibles

During work hours fuels and combustible materials are to be stored and used in accordance with the manufacturer/suppliers recommendations, including the availability of fire-fighting equipment. Upon the cessation of work for the day all fuels and like products must be returned to the main site compound and stored in the designated area. This designated area will be sign posted “Fuel storage area” and appropriate controls such as fire-fighting equipment made available to the area. The fuel storage area will be free of grass and other combustible material.

Specific controls

The following measures would be adopted to minimise bush fire related risks throughout the construction phase.

- Motorised equipment would not be driven in grassed areas unless that machine is constructed so that any heated areas do not come in contact with combustible matter.
- All machines and equipment would be maintained in a good and serviceable condition.

- All plant and equipment accessing the site, and activities that could generate sparks (i.e. welding and use of angle grinders), would require ready access to prescribed fire safety equipment (knapsack spray pump of 16L capacity filled with water, fire extinguisher (liquid type) of 9L capacity or dry powder type extinguisher of 0.9kg capacity);
- During construction trailer mounted water tankers with fire-fighting pumps and spray hoses would be available on site at all times; and
- Throughout construction the areas immediately around infrastructure would be managed to prevent the build-up of combustible matter.

6.4.3 CPP Emergency Contact

The Rural Fire Service will have 24 hour day, 7 day a week access to a nominated CPP contact. This contact will be:

Project Manager
Mr Edwin Munian
Mobile: 0419 928 175
Email: emunian@conpower.com.au

6.4.4 RFS Consultation

As the construction schedule is refined and the construction effort progresses CPP will continue to consult with the RFS to ensure:

- Restrictions related to the prohibition and or restriction of certain construction activities, at certain locations, in certain circumstances (e.g. periods of total fire bans) are clearly understood by all parties and adhered to;
- The specification of fire suppression equipment available on site, include tanker access and sources of water, are adequate;
- That a detailed and accurate site map is made available that specifies the location and quantities of all stored flammable material (e.g. fuels); and
- That a suitable emergency evacuation plan is prepared and adequate training in the use of fire-fighting equipment is provided.

CPP acknowledges that the Minister's consent requires it to comply with any reasonable request of the local RFS.

The appropriate local RFS contact is the Zone Manager, North West Zone (contact details below).

Zone Manager
North West Zone
Inspector Greg Sim
Phone: 02 682 24422
Mobile: 0428 253 224
E-mail: greg.sim@rfs.nsw.gov.au
Please call 000 for all emergencies

6.4.5 Hot works

6.4.5.1 Definition

Hot Works are considered to be any operations that will generate heat, sparks, or flame. They include, but are not limited to, grinding with angle grinders, welding, cutting with angle grinders and quick-cuts, etc.

6.4.5.2 Permits

Hot works conducted at any time of year requires the Site Manager to issue *FRM-S018 Hot Work Permit* to Consolidated Power Projects personnel and their subcontractor's.

On projects where multiple hot work permits are issued, *FRM-S149 Hot Work Permit Register* will be utilised to track hot work permits.

6.4.6 Requirements

Prior to this project commencing the Project Manager and Site Manager will identify fire fighting equipment requirements using *FRM-S142 Emergency Requirements Assessment Form*.

The location of fire fighting equipment will be identified in *FRM-S117 Emergency Contact Details*.

6.4.7 Register

A register of fire fighting equipment will be maintained on *FRM-S145 Fire Fighting Equipment Inspection Register* and will be completed by the Site Manager. This form will be updated when fire fighting equipment is introduced, serviced or removed from service.

6.4.8 Testing and Maintenance

Fire fighting equipment such as fire extinguishers, fire hydrants and fire blankets will be formally inspected by a competent service technician on a 6 monthly basis. Service records from these formal inspections will be maintained on site.

Extinguishers need to be emptied, pressure tested and refilled every 5 years. This task will be conducted by a competent service technician. There may be other servicing requirements at 3, 5 or 6 years, again identified and carried out by a competent service technician.

Service technician tests and intervals are to be recorded on a label or metal tag attached to the fire fighting equipment. If the label or metal tag is missing or unreadable a retest is required.

If the gauge of fire fighting equipment indicates that the unit is under pressure or the weight is too low (for units without gauges) refilling is required.

Fire fighting equipment not requiring inspections by a competent service technician will be inspected on a 6 monthly basis by the Site Manager or his delegate. Records will be maintained on *FRM-S145 Fire Fighting Equipment Inspection Register*.

Items requiring inspection may include the following (but not limited to);

Item	Check
Hoses	Wear, tear and cracks.
Pumps	Oil and fuel levels.
	Pull cords for wear and tear.
	Start unit to ensure it is working.
Knapsack Sprayers	Nozzle is adjustable and operational.
	Straps are in good conditional and adjustable.
	Handles and pump mechanisms are operational.
	Filled with water and not leaking.
Taps	Water pressure.
	Taps are easily switched on and off.

6.4.9 Training

Basic fire fighting training will be provided to all site personnel at the project induction.

Basic fire fighting refresher training will take place at 6 monthly intervals or if additional fire tasks and risks are identified. Organisation of training would be the responsibility of the WHSE & QA Manager in consultation with the Project and Site Managers.

6.4.10 Total Fire Ban and Current Fire Danger Maps

In order to limit the number of fires that escape and threaten life, property and the environment, especially on days when it is very hot, dry and windy, the Fire Service Authority can restrict the use of hot works through total fire bans.

To determine if you are in an area where a total fire ban is enforced please visit the following fire service website and/or bureau of meteorology website.

New South Wales	http://www.rfs.nsw.gov.au/dsp_content.cfm?CAT_ID=1109 http://www.bom.gov.au/nsw/warnings/

6.4.11 Planned Burns

If concerns are raised about fire or smoke in the vicinity of a project, the site manager will visit the following website to determine if the fire or smoke is a planned burn or a bushfire.

New South Wales	http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1740

6.4.12 Neighbourhood/Bushfire Safer Place

If project personnel are required to evacuate their project due to a bushfire they will assemble at a designated location as per *FRM-S113 Emergency Response Plan-Bush Fire*

To assist with identifying this designated location a Neighbourhood/Bushfire Safer Place will be identified in *FRM-S117 Emergency Contact Details*

A Neighbourhood/Bushfire Safer Place is a place that offers relative safety for people during a bushfire.

The closest Neighbourhood/Bushfire Safer Place to this project will be determined by visiting the following fire service website.

New South Wales	http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1785

6.5 Hazardous Substances and Dangerous Goods

The Project Manager and Site Manager shall ensure that all hazardous substances and dangerous goods to be used on the project are identified in *FRM-S031 Hazard and Risk Assessment Register*, including all those used by sub-contractors.

Condition B5 of the Project Approval states:

Dangerous goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with:

a) All relevant Australian Standards;

b) For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume with the bund; and

c) The Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (Environment Protection Authority, 1997).

In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of any inconsistency.

6.5.1 Dangerous Goods

The following is a summary of all dangerous goods that are anticipated to be stored at the property in respect of CPP operations:

- Approximately 80 kilograms of SF6 (sulphur hexafluoride), used in operation of the breakers. These would be charged during the construction phase and maintained thereafter.

Management of the above goods is proposed via the steps in the following sections.

6.5.2 Purchasing

The person responsible for purchasing all proposed new chemicals (regardless of if they are hazardous and dangerous) must ensure that the safety data sheet (SDS) is consulted before the material is purchased.

If the purchaser has any queries they must contact the WHSE and QA Manager.

A substances register which lists each substance including hazardous, dangerous, non-hazardous and non-dangerous substances in use or being stored at that work area using *REG-S002 Master Register of Substances*.

Contractors and Sub-Contractors working on behalf of Consolidated Power Projects who are using substances must also forward copies of safety data sheets for those chemicals.

Sub-Contractors chemicals will also be assessed by the Site Manager to determine their status. This assessment will be recorded in *FRM-S020 Hazardous Substance and Dangerous Goods Assessment*.

6.5.3 SDS

Once the SDS for a chemical has been obtained it will be assessed by the Site Manager to determine the status of the substance i.e. Hazardous or Dangerous. This assessment will be recorded in *FRM-S020 Hazardous Substance and Dangerous Goods Assessment*.

The SDS for hazardous substances and dangerous goods and their risk assessment will be readily accessible in the project office i.e. electronically and/or paper based.

The SDS must be from the supplier and must contain Australian contact details. If chemicals are obtained from overseas and the SDS is from that country, the SDS would be forwarded to the WHSE and QA Manager who can arrange for it to be converted to an Australian format.

Suppliers are required to review and update SDS's every five years.

6.5.4 Risk Assessment

Each Hazardous Substance and Dangerous Goods will be assessed using the *FRM-S020 Hazardous Substance and Dangerous Goods Assessment*.

The controls identified in *FRM-S020 Hazardous Substance and Dangerous Goods Assessment* will be listed in Safe work method statements.

6.5.5 Labelling

All containers used to store substances will be clearly marked with the product name.

All storage areas will be clearly marked with the following information:

- Product name;
- Risk and Safety phrases; and
- Hazard warning word/dangerous goods class and symbol (e.g. Flammable).

6.5.6 Transport

For the purpose of storage and transport large quantities will be defined as greater than 400 litres. Large quantities of hazardous substances and dangerous goods will be transported to site by the supplier of the substance.

In circumstances where the supplier is unable to transport/deliver the hazardous substances and dangerous goods, a subcontractor or CPP will be engaged.

In this circumstance the subcontractor and/or CPP will prepare a safe work method statement for this activity.

The safe work method statement will be reviewed by the WHSE Manager/Coordinator and approved by the Project Manager.

6.5.7 Storage

Storage quantities should be kept to a minimum to cater for demand but avoid excessive storage for long periods.

For dangerous goods this includes requirements for separation and segregation for all incompatible substances as identified in *FRM-S020 Hazardous Substance and Dangerous Goods Assessment*

Adequate storage facilities will be provided for all chemicals i.e. 110% bunded area for quantities greater than 400 litres. As noted in **Section 6.5.1**, only one classified dangerous good is to be stored on site (SF6) and this has a volume of less than 400 litres. The SF6 will be stored in a bunded area, with a design based on the above requirements.

6.5.8 Disposal

The following will be considered when disposing of all chemicals (dangerous, hazardous, non-dangerous and non-hazardous)

Less than 20 Litres – disposed of at a licensed/registered landfill depot.

Greater than 20 litres - a licensed waste contractor will be engaged to remove the substance.

Auditable records of waste company licences, disposal sites and waste consignment notes must be held on file for each removal activity.

6.6 Incident Management

Condition C8 of the Project Approval sets out the requirement for incident reporting. The primary responsibility for incident reporting rests with the Client, AGL. CPP would commit to ensuring that all necessary information is provided to the Client in a timely fashion, to ensure that their obligations can be met. CPP would work with the client with regards to incident reporting and remedial measures required to address the incident.

6.6.1 Internal Incident Reporting

All personnel working on this project will report all incidents immediately to the Site Manager.

The Site Manager will ensure incidents are reported verbally to the Client, Project Manager and WHSE and QA Manager as soon as possible after the incident.

The Project and Site Managers will ensure that incidents, regardless of how significant or insignificant they may appear are investigated.

Once notified, the Client will determine if the incident is notifiable to regulatory authorities.

FRM-S001 Incident Investigation Report Form will be utilised to formally notify the Client, Project Manager and WHSE and QA Manager within 24 hours.

An initial investigation report is to be completed within 48 hours of the incident and distributed to the Client, Project Manager and WHSE and QA Manager.

6.6.2 Incident Categories

It is anticipated that there is the potential for the following incident types to occur on site in relation to CPP activities:

6.6.3 Incident Management and Investigation

Immediately after an incident the following will occur as a minimum:

1. Cordon off the incident area;
2. If the incident represents a threat to human health or property, call 000 immediately;
3. Check for further hazards and risks;
4. Check for injured personnel;
5. Report to the Site Manager immediately;
6. Site Manager to determine whether the matter constitutes a material harm to the environment – refer **Section 6.6.4;**
7. Site Manager to report to ER;
8. Where the matter constitutes a material harm to the environment the ER is to immediately notify the Client;
9. The Client is then to notify the DG and other relevant agencies in accordance with Part 5.7 of the *Protection of the Environment Operations Act 1997* including but not limited to (and in the following order)*;*
   - the EPA;
   - the Ministry of Health via the local Public Health Unit;
   - Workcover
   - The local authority (BSC);

- Fire and Rescue (where 000 was not initially called).

Relevant phone numbers for the above agencies are found in **Section 6.6.4**.

10. Site Manager to advise First Solar of incident;
11. Site Manager to initiate incident investigation;
12. Prepare *FRM-S001 Incident Investigation Report Form* and forwarded to Client and WHSE and QA Manager;
13. Record witness statements on *FRM-S003 Witness Report;*
14. Implement identified controls;
15. Close out incident report.

The person with management or control of a workplace at which a notifiable incident has occurred must ensure that the site where the incident occurred is not disturbed until:

- a representative from the regulator arrives at the site;
- or is directed to do so by the regulator.

6.6.4 External Incident Reporting

As per **Section 6.6.3**, and in accordance with Condition C8 of the Development Consent, an Environmental Incident is required to be notified at the earliest opportunity to the Director General and any other relevant agencies where the incident has caused, or threatened to cause, material harm to the environment. Material harm to the environment is defined in Section 147 of the New South Wales *Protection of the Environment Operations Act 1997* as:

(a) harm to the environment is material if:

i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment."

The protocol to be following in the event of an incident is set out in **Section 6.6.3**.

A person conducting a business or undertaking must notify the principal contractor immediately of a notifiable incident i.e. the death of a person, a serious injury or illness of a person or a dangerous incident, or the potential for material harm to the environment.
A person conducting a business or undertaking will then notify the relevant authority (by telephone or in writing) of the notifiable incident. The contact details are as follows:

Trigger	Regulator	Telephone Number
Occurrence of notifiable incident	WorkCover NSW	131 050
Material harm to the environment	EPA NSW	131 555
Impact to services (eg, road)	Bogan Shire Council	02 6835 9000
Unexpected heritage item/Aboriginal item	Office of Environment and Heritage	131 555

Human skeletal remains unearthed	NSW Police	02 6861 1399
Unexpected Aboriginal find	Bogan Aboriginal Corporation	02 6832 1750
Impact to road infrastructure	Roads and Maritime Services (Western Region)	02 6861 1467
Impact to power infrastructure	Essential Energy	13 20 80

The Project Manager will appoint a senior member of staff (Project Manager, Site Manager or WHSE and QA Manager) to liaise with interested parties (regulatory authorities or media) in the event of a notifiable incident.

6.7 Statutory Obligations

6.7.1 Legislation

Commonwealth Legislation

Aboriginal and Torres Strait Islander Heritage Protection Act 1984
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
Native Title Act 1993

NSW Legislation

Agricultural and Veterinary Chemicals (New South Wales) Act 1994
Contaminated Land Management Act 1997
Environmental Planning and Assessment Act 1979
Environmentally Hazardous Chemicals Act 1985
Heritage Act 1977
Local Government Act 1993
National Parks and Wildlife Act 1974
Native Vegetation Act 2003
Noxious Weeds Act 1993
Pesticides Act 1999
Prevention of Cruelty to Animals Act 1979
Protection of the Environment Operations Act 1997
Roads Act 1993
Rural Lands Protection Act 1998
Crown Lands Act 1989
Soil Conservation Act 1938
Threatened Species Conservation Act 1995
Waste Avoidance and Resource Recovery Act 2001
Water Management Act 2000

All relevant legislation applicable to Consolidated Power Projects activities has been identified and compiled *REG-G002 Environmental Legislative Library*.

The WHSE and QA Manager will monitor changes to legislation and other requirements and advise Project Managers via emails or bulletins of these changes.

All relevant changes to legislation, Codes of Practice and Australian Standards shall be assessed by the WHSE and QA Manager.

The WHSE and QA Manager will review project plans, risk assessments, aspects and impacts registers, SWMS etc to determine if changes are required. Where changes are required the WHSE and QA Manager will advise Project Managers via emails or bulletins of changes required.

Project Managers and Site Managers will ensure that the relevant documents are re-issued and personnel retrained as appropriate.

6.7.2 Approvals

A summary of additional approvals and licences required for the CPP works associated with the Project (excluding the Project Approval) is provided below:

- Approval is required under the s.138 of the *Roads Act 1993* to erect a structure or carry out a work in, on or over a public road;
- Road Occupancy Licence;
- Approval is required under s.45 of the Electricity Supply Act 1995 for development of the proposed transmission line, including crossing a public road.

No other additional approvals or licences are noted as required.

6.7.3 Project Consent Conditions and Mitigation Measures

Consent conditions contained with SSD 5355 and Mitigation Measures proposed via the EIS are key obligations for which compliance must be achieved. **Appendices H and I** of this CEMP provide a summary of all conditions and mitigation measures, including their relevance to the CPP element of the project and the section/s of the CEMP where discussed.

6.8 Meetings and Reports

6.8.1 Meetings

Monthly meetings will be held on the project and will involve the Project Manager, Site Manager, Subcontractors Site Manager and where possible WHSE and QA Manager/Coordinator.

Items addressed during the meeting will include but not limited to;

▪ Safety ▪ Quality ▪ Environment ▪ Non-conformances ▪ Program and Resources ▪ Contract Admin and Commercial ▪ Review of Safety Management Plan (Min 3 monthly) ▪ Review of Site Risk Assessment and its effectiveness	▪ Project training requirements and effectiveness of training ▪ Sub-contractors performance – safety, environmental, quality ▪ Accidents/incidents ▪ Audit and site inspection results ▪ Miscellaneous ▪ Site Managers monthly report.

The minutes of this monthly meeting will be recorded using *FRM-A003 Meeting Agenda Template*.

Weekly meetings would be held with First Solar representatives to ensure that interface issues are appropriately managed. Meetings would involve the Site Manager as a minimum.

6.8.2 CPP Reports

The Site Manager will prepare a weekly construction report using *FRM-C014 Weekly Construction Report Template*. This report will be forwarded to the Project Manager.

The Project Manager will prepare a monthly construction report using *FRM-C028 Client Monthly Report Template*. This report will be forwarded to the Construction Manager and WHSE and QA Manager.

The WHSE and QA Manager will consolidate the monthly reports from all projects and provide an overall report to senior managers at their monthly meeting.

Reports will be scrutinised by the WHSE and QA Manager for trends. If trends are identified strategies will be developed to reverse negative trends e.g. increased internal audits, additional training, revised hazard and risk assessment register and safe work method statements.

6.8.3 Client Reports

Clients that require reports or statistics will be provided on a template provided by the client or a modified version of *FRM-C028 Client Monthly Report Template*.

6.8.4 Environmental Data

Specific environmental data as required to enable AGL to discharge their obligations in respect of environmental reporting would be provided as required – refer **Section 8**.

6.9 Non-Conforming Issues

6.9.1 Addressing Non-Conforming Items

The Project Manager, Site Manager and WHSE and QA Manager have the authority to stop, reject or quarantine any unsafe work areas, work methods, materials, plant and equipment.

Non-conforming activities including non-conformance to this plan, procedures, safe work method statements legislative requirements etc. will be recorded on *FRM-M002 Continuous Improvement Notice*.

FRM-M002 Continuous Improvement Notice will also be issued if non-conforming activities are identified following site inspections, task observations, safe work method statement observations and spot audits.

6.9.2 Issuing Continuous Improvement Notices

Once a non-conforming activity is identified a verbal notice will be issued to the personnel involved advising of the non-conformance.

A report will be prepared by the person who observes the activity and a copy of the report will be forwarded to the relevant party who will identify and implement corrective actions.

Non-conformances will be brought to the attention of the Site Manager who will ensure that the issue is investigated and corrective actions taken. Records of any action taken will be maintained on *FRM-M002 Continuous Improvement Notice*.

Once *FRM-M002 Continuous Improvement Notice* is completed it will be forwarded to the quality assurance department where the non-conformances will be registered on Non-conformance Report Register.

Non-conforming product or materials will be quarantined and either returned to the supplier or disposed of.

Continuous Improvement Notices will be reviewed at the project meetings.

Non-conformances and other similar notifications from clients and external parties will be addressed within agreed time frames. These non-conformances and other similar notifications will be forwarded to the quality assurance department for registering on the relevant register.

6.10 Policies

The policies identified in the appendices of this CEMP will be displayed prominently at this project i.e. offices and/or lunch rooms.

6.11 Project Rules

Project Rules will be prepared by the Project Manager prior to the commencement of the project. *FRM-G005 Project Environmental Rules* will be utilised to document the project rules.

Project personnel will be advised of the rules at the project induction.

Project rules will be displayed in offices and/or lunch rooms.

6.12 Risk Management

6.12.1 Project Hazards, Risks, Aspects and Impacts Workshops

Prior to works commencing on this project the Project Manager and/or his delegate will conduct prepare an aspects and impacts register following a review of client's documentation e.g. Environmental Impact Statement.

The scope of the project hazard and risk identification workshop and aspects and impacts workshop/register for this project will:

The purpose of this aspects and impacts register is to:

- Identify and record aspects, impacts and controls;
- Conduct an assessment of the likelihood of the risk occurring and the consequence if it does occur;
- Actions and controls that currently exist to mitigate risks;
- An assessment of residual risk following the implementation of the mitigating actions;
- Who is responsible for implementing the mitigating actions;
- Further recommendations identified during the project hazard and risk identification workshop.

Aspects and impacts will be recorded on *REG-G001 Aspects and Impacts Register*.

Generic information will be used to populate both registers prior to the commencement of the workshops.

This generic information will be refined following experience from previous projects and consultation with workers, industry experts and other PCBU's. This information will be reviewed and amended during the project hazard and risk identification workshop to ensure it applies to this project.

REG-G001 Aspects and Impacts Register (or relevant sections from the registers) will be distributed to PCBU's associated with the project. This register will enable PCBU's to prepare their respective SWMS accordingly.

6.12.2 Reviewing and Updating Hazard Registers

REG-G001 Aspects and Impacts Register will be reviewed by the Project Manager in consultation with Site Managers and PCBU's associated with the project:

- At least every 3 months (at scheduled project meetings);
- Before any change is made to the way the construction work is done (e.g. a new system of work is introduced, or the place where the work is to be done has changed);
- If new information about the hazards involved in the construction work becomes available to the employer;

- If for any other reason the risk control measures are not adequately controlling WHSE risks (e.g. if there have been injuries or illnesses connected with the work);
- After receiving a request from a WHSE representative, WHSE committee member or a worker.

Revised project hazard and risk assessment registers will be distributed to PCBU's associated with the project.

6.12.3 Daily Hazard Assessment Check

Prior to commencing work, the Site Manager will conduct a daily hazard assessment check using *FRM-S027 Daily SWMS Review Log*. This would include but is not limited to environmental hazards. Potential hazards include but are not limited to:

- Driving ie. traffic management;
- Cranes, hoists and rigging;
- Working at heights;
- PPE;
- Equipment calibration and certification;
- Dust;
- Electrical safety;
- Underground utilities;
- Fatigue;
- Operating hand tools;
- Excavations;
- Slips, trips and hazards;
- Emergency services.

The following information will be used when conducting daily hazard and risk assessments:

1. Select the SWMS's applicable to the day's activities;
2. The task for the particular activity for that day will be selected from the relevant SWMS and recorded in *FRM-S027 Daily SWMS Review Log*;
3. All personnel on the project will be consulted on the day's activities and asked for their input i.e. asked to identify additional task steps, hazards, additional controls etc.
4. All personnel will then be asked to sign *FRM-S027 Daily SWMS Review Log* to acknowledge their participation in the assessment.
5. When leaving site permanently, project personnel will sign out on *FRM-S027 Daily SWMS Review Log*.

Significant changes to site conditions identified during the daily hazard assessment check will be addressed as per the following section.

6.12.4 Changes to Work Practices

If significant changes (Refer to Residual Risk Section for further details) to a work site alter the way the SWMS dictates that the work is to be done, then the worker/s must cease work immediately. The worker/s must then notify the Site Manager, who shall:

- Update the Safe Work Method Statement to reflect the current site conditions;
- Inform workers of the changes;
- Retrained all workers in the SWMS; and

- Ensure all workers sign off on the changes to the SWMS.

Minor changes to site conditions shall be recorded on *FRM-S027 Daily SWMS Review Log.* Refer to Residual Risk Section for further details.

6.12.5 Hazard Reporting

Hazard reporting may be conducted using the methods outlined above (SWMS Consultation, Daily Hazard Assessment Check, and Changes to Work Practices) or utilising *FRM-S002 Hazard Report Form*.

6.13 Risk Assessment

The following information describes how CPP have assessed risk and the relevant controls proposed. A draft of the risk assessment is provided as **Appendix G**.

6.13.1 Consequence

A consequence is the outcome (impact) of an event.

Establish the consequence by using the information provided in the following table.

		Impact				
		Personal Impact	**Environmental Impact**	**Community Impact**	**Financial Impact**	**Corporate Impact**
Consequence	Category 5 (Critical)	Fatality /Multiple fatalities	Substantial changes to existing environmental quality in affected area with major change to bio-diversity and/or land-use function. Eventual recovery of ecosystem or land-use possible.	Widespread outrage	>$100,000	Will threaten the effective operation of CPP business, or have a significant effect on how it will operate in the future.
	Category 4 (Major)	Permanent Disability	Changes to existing soil and/or water quality in the affected area, but no changes to bio-diversity or ecological or land use function.	Widespread complaints and anger - community impact	$20,000 To $100,000	May threaten the effective operation of CPP Pty Ltd, but exposes CPP to regulatory investigations.
	Category 3 (Moderate)	LTI	Possible incident impacts to soil, water, flora and fauna in a locally affected area, but without adverse ecological or land-use consequences.	Limited complaints with local community impact	$5,000 To $20,000	No significant impact, dealt with internally by the Senior Management Team.
	Category 2 (Minor)	Medical Treatment	Minor incident resulting in negligible impacts to soil, water, flora and fauna in the immediate work area.	Limited complaints with project impact	$1,000 To $5,000	No significant impact, routinely dealt with on a project basis.
	Category 1 (Negligible)	First Aid injury	Minor incident resulting in negligible impacts routinely dealt with through maintenance of erosion and sediment controls	No impact	< $ 1,000	No significant impact.

6.13.2 Likelihood

Likelihood is the chance that something might happen. Use the information provided in the following table to determine the likelihood of identified risks.

Category	Likelihood	Example	Frequency
1	Rare	The event may occur only in exceptional circumstances	Less than once in 5 years
2	Unlikely	The event could occur at some time	At least once in five years
3	Moderate	The event should occur at some time	At least once in 3 years
4	Likely	The event will probably occur in most circumstances	At least once per year
5	Almost Certain	The event is expected to occur in most circumstances	More than once per year

6.13.3 Risk Matrix

The rating of risks is evaluated using the following matrix. The likelihood and consequence score are multiplied together to get an overall risk rating.

The scoring of risk is a subjective process. When assessing the likelihood and consequence of a particular risk, the following information should be considered:

- Results of site audits or observations;
- Past history and similar occurrences and situations;
- Review of relevant documentation and data;

Category	Consequence	Likelihood				
	↓	1	2	3	4	5
		Rare	Unlikely	Moderate	Likely	Almost Certain
Category 1	Negligible	1	2	3	4	5
Category 2	Minor	2	4	6	8	10
Category 3	Moderate	3	6	9	12	15
Category 4	Major	4	8	12	16	20
Category 5	Critical	5	10	15	20	25

6.13.4 Control Measures

Once an overall risk rating is applied to a risk, control measures should aim to eliminate and/or minimise any adverse outcomes (impacts) to the project, personnel and the environment.

These controls will reflect the following hierarchy of controls.

Each Hazard Should be Considered/Examined taking into consideration the hierarchy of control Controls closer to the top of the Hierarchy are preferable to those lower down the hierarchy. In many Circumstances control solutions will incorporate a combination of controls. For a combination of controls - controls closest to the top of the hierarchy will receive priority. In this instance please ensure the controls closer to the top of the Hierarchy are listed first.		
Most Effective Control	1st Priority	**Try to Eliminate the Hazard -** Controlling the hazard at source by elimination If this is not practical, then:
	2nd Priority	**Substitute the Hazards with Lesser Risks -** Replacing one substance or activity with a less hazardous one If this is not practical, then:
	3rd Priority	**Isolate the Hazards -** Place out of Service locks and tags on Hazardous Plant If this is not practical, then:
	4th Priority	Use Engineering Controls or Redesign Equipment or Work Processes - Install guards on machinery, scaffold rather than ladders If this is not practical, then:
	5th Priority	**Use Administrative and Training Controls –** Training Staff with appropriate accreditations and training (induction training, safe work method statement training, policies and procedures for safe work practices etc.) , If this is not practical, then:
Least Effective Control	6th Priority	**Use Personal Protective Equipment -** E.g. Hearing, eye protection, safety harnesses. Utilizing all available PPE for a task will contribute to the process of managing risk.

6.13.5 Residual Risk

Where a risk has been assessed and given a residual ranking, the following table will be utilised to determine what action is required.

Risk Rating	Criteria for management of risk	
15-25	Category 5 (Critical)	**No work allowed** until the residual risk has been reduced. This may be by re-designing, re-engineering or by using alternative construction methodologies.
10-14	Category 4 (Major)	**Work can proceed** if a SWMS is provided with required controls. (Workers must be trained in SWMS) Tool box talk must be conducted prior to start to review hazards and controls.
6-9	Category 3 (Moderate)	**Work can proceed** if a SWMS is provided with required controls. (Workers must be trained in SWMS) Tool box talk must be conducted prior to start to review hazards and controls.
4-5	Category 2 (Minor)	**Work can proceed** - the situation should be dealt with as soon as possible, (but the situation is not an emergency) through the provision of SWMS with required controls (Workers must be trained in SWMS)
1-3	Category 1 (Negligible)	**Work can proceed** - Further mitigation not required at present but risk will continue to be monitored. Daily PCBU to be prepared for task (Workers must be trained in Daily JSEA)

6.13.6 Responsibility

Once control measures are identified, responsibility will be nominated for ensuring that the risk is mitigated by implementing the identified control measures.

6.14 Traffic Management Plan

The Conditions of Approval require that a Traffic Management Plan (TMP) be prepared and implemented as part of the Construction Environmental Management Plan (CEMP).

Schedule 1, Part C Environmental Management, Reporting and Auditing Clause C3 sect (e) of the Project Approval states:

> *A Traffic Management Plan to manage traffic conflicts that may be generated during construction. In preparing the Plan, the Applicant shall consult with the Council and RMS. The Plan shall address the requirements of the relevant road authority and shall include, but not necessarily be limited to:*
>
> *i. the origin, number, size, frequency and final destination of vehicles entering/exiting the site;*
>
> *ii. loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles;*
>
> *iii. the management and coordination of the movement of construction and personnel vehicles to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables (particularly the Miandetta to Nyngan route);*
>
> *iv. scheduling of haulage vehicle movement to minimise convoy length or platoons. Consideration should be given to minimise the route length for road transport of all size and over mass loads to minimise the impact on traffic;*
>
> *v. details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS Supplements;*
>
> *vi. demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with;*
>
> *vii. details of measures to minimise interactions between the development and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc;*
>
> *viii. procedures to manage construction traffic to ensure the safety of the school bus and its passengers, inclusive of driver training and procedures to ensure the adequacy of the management measures;*
>
> *ix. implement all reasonable and feasible measures to reduce the construction related traffic on the Barrier Highway and public roads between the site and the highway;*
>
> *x. schedule construction vehicle movements on site to occur outside school bus hours;*
>
> *xi. procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock;*
>
> *xii. speed limits to be observed along routes to and from the site and within the site and access road; and*
>
> *xiii. details of the expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.*
>
> **RMS refers to Roads and Maritime Services.*

A *Traffic Management Plan* has been prepared and is attached in **Appendix E**. This has been separately provided to RMS who have confirmed its overall adequacy, including consistency with the First Solar TMP.

The following matters are considered relevant in relation traffic and access.

Revised mitigation measure 46 as identified within the NGH Environmental Submissions Report (June 2013) states:

Consultation with neighbouring landholders regarding any temporary impacts to access or risks to livestock. Additional specific mitigation may be required such as:

- *Additional fencing to protect livestock from collision risks; and*
- *Vehicle speed restrictions on access roads.*

It is understood that this consultation forms part of the (to be developed) AGL Community Consultation Management Plan. CPP endeavours to provide AGL with such information as required to support the development of this plan and the CPP Project Manager (or their delegate) would be available to represent CPP on any project team.

In relation to part of MM46, it is understood that the development of the internal access road is the responsibility of First Solar – refer **Section 3.3.3** in relation to induction procedures for use of this road.

The TMP addresses those matters arising out of Mitigation Measure 55. For the avoidance of doubt, the following matters are not addressed in the TMP, on the basis that they remain the responsibility of the applicant:

- Details of intersection improvement works in accordance with Austroads *Guide to Road Design 2010* and RMS Supplements;
- A full and independent risk analysis and inspection of the proposed transport route(s) with procedures for reporting and remediating any damages caused by oversize/overmass traffic;
- A commitment to provide funding for the maintenance and repair of any affected classified roads for the duration of transportation of oversize and overmass vehicles and loads, to the satisfaction of RMS; and
- Assessment of road condition prior to construction on all local roads that would be utilised.

Not addressed within the TMP, but potentially relevant to CPP works, is the need for community consultation where traffic impacts are predicted to have the potential to result in exceedences at sensitive receivers. The measures outlined in **Section 7.9.4** of this CEMP would be applied should such a situation arise.

All works associated with the stringing of the transmission line across the Barrier Highway are to be undertaken in accordance with the conditions of consent attached to the RMS Road Crossing Application (granted on 9 January 2014) and the Road Occupancy Licence and Speed Zone Authorisation; applications for both are currently pending with RMS.

6.15 Training and Competencies

6.15.1 Competency Matrix

The competency requirements for project personnel will be determined by the Project Manager, Site Manager and Human Resources Department, completing *REG-H002 Qualifications and Training Matrix* prior to the project commencing. Client training requirements will also be addressed in the competency matrix.

6.15.2 Competency Register

Training undertaken by CPP staff will be recorded on *REG-H003 Competency Register*.

6.15.3 Training Needs Analysis

A training needs analysis will be conducted by the Project Manager or Site Manager, comparing *REG-H002 Qualifications and Training Matrix* and *REG-H003 Competency Register*.

Deficiencies identified will be recorded in *FRM-H002 Training Request Form* and will result in further training for the affected employees and contractors.

Where new or unforeseen workforce requirements arise, the Project Manager will identify additional training requirements via the Risk Assessment Process.

6.15.4 Requesting Training

FRM-H002 Training Request Form will be competed for training identified in the training need analysis. *FRM-H002 Training Request Form* will be forwarded to the Human resources Department.

Certificates for completed training will be forwarded to the Human resources Department who in turn will update *REG-H003 Competency Register*.

6.15.5 Project Specific Inductions

As required by legislation and before commencing work on site, all personnel will have completed a Construction Industry General Induction and will also be required to attend a Project Specific Induction (*FRM-S135 Project Specific Induction*) prepared by the Site Manager.

The Site Manager or his delegate will conduct the Project induction. The nominated person(s) is/are to be experienced in the Occupational Environmental requirements associated with the electrical and construction industry.

Copies of construction induction training, training certificates and qualification required to perform any task or operate plant/equipment on the site are to be scanned and filed in the project folder.

Upon completion of the Project Induction all personnel will complete *FRM-S136 Project Induction Declaration*.

Details of CPP staff competencies will be available on *REG-H003 Competency Register*.

Where it is not possible to obtain copies of the required certification the person conducting the inductions is to sight the documentation and make note on the individual's induction declaration form that documentation has been sighted and record the required details.

FRM-S136 Project Induction Declaration will be maintained on site for all personnel who have attended the project specific induction. On completion of the works on site the induction records will be archived.

Visitors to site are to be accompanied at all times by a person who has been inducted.

FRM-S137 Project Induction Register shall be maintained for all the people who attended the project specific induction including subcontractors and suppliers.

6.15.6 Environmental training

It is anticipated that specific environmental training of general staff would be limited to training in the protocol surrounding unanticipated finds of objects with possible heritage significance. CPP have sought advice from a suitably qualified archaeologist on the process protocol to be followed by contractors.

Other matters requiring specific environmental expertise would be the responsibility of the Project Ecologist –refer **Section 4.4**.

6.15.7 Returning to Project

CPP Personnel and contractors returning to this project after an absence of 8 weeks or more will:

- Receive Project Induction retraining;
- Review, update and resubmit safe work method statements to CPP's Site Manager for review and approval (CPP and contractors).

6.16 Services and Utilities

Condition B14 of the Project Approval states:

Utilities, services and other infrastructure potentially affected by construction and operational shall be identified prior to construction to determine requirements for access to, diversion, protection and/or support. Consultation with the relevant owner and/or provider of services that are likely to be affected by the development shall be undertaken to make suitable arrangements for access to, diversion, protection and/or support of the affected infrastructure as required. The costs of any such arrangement shall be borne by the Applicant.

The following services and utilities are noted as being potentially affected by the CPP portion of the project:

Service	Related Actions
Water	CPP will require a water service into the property in conjunction with construction activities. It is noted that the First Solar propose a connection for water supply via either the Cobar water pipeline or the Bogan River. To minimise service connections to the property, it is proposed to liaise and coordinate with First Solar to establish a sharing arrangement.
Roads/Highway	*Highway* It is noted that the proposed transmission line requires a crossing of the Barrier Highway. An application is currently before Roads and Maritime Services (RMS) in accordance with Section 138 of the Roads Act 1993 to confirm the proposed crossing. No specific infrastructure is proposed within the road reserve however an overhead transmission line would overhang the highway. Clarity is being sought from RMS on the need for a road occupancy licence during the construction period. This would be influenced by the construction methodology for the line. *Internal Access* First Solar propose the construction of an internal access road within the confines of the 40 metre wide easement on the northern side of the Barrier Highway, to provide access to the construction site and Solar Plant. CPP have discussed a sharing arrangement with First Solar for use of this road, and this would be managed via an agreed condensed induction program.
Power	The transmission line would connect to existing Essential Energy infrastructure via the proposed transmission line. An application has been lodged with EE in accordance with S.45 of the Electricity Supply Act 1995.
Easements	A 40 metre wide easement is proposed for the extent of the transmission line. First Solar propose to construct the above internal access road within the easement, on the northern side of the Barrier Highway. The legal creation of the easement is being managed directly with land owners and in-principle agreement has been reached.

7 PROJECT SPECIFIC ENVIRONMENTAL PROCEDURES

The following environmental procedures will be prepared and implemented for each of the key environmental aspects relevant to the construction activities on this project.

7.1 Environmental Planning

7.1.1 Environmental Assessment Requirements

All activities associated with the works CPP are undertaking for the Nyngan Solar Plant project must comply with the relevant legislation and associated regulations.

The environmental management procedures identified emanate directly from the Minister's Consent Conditions. Conditions of approval relevant to CPP works are summarized below.

If during the project, supplementary environmental assessments are determined, any new or additional or changed mitigation measures will be updated and added to this section.

No	Issue	Requirement / Mitigation Measure	Reference Section in CEMP
Consent Condition			
A10	Compliance	Understanding of conditions of consent.	4
B1	Ancillary Facilities	Location identified in CEMP	3.4
B3/4	Bushfire	Compliance with RFS Guidelines and consultation	6.4
B5	Dangerous Goods	Storage and Handling	6.5
B6	Dust Generation	Minimise fugitive emissions	7.6
B9	Soil and water management	Minimise erosion and sediment discharge	7.2
B11/12/13	Waste Management	Lawful handling and disposal	7.4
B15/16	Native Vegetation	Minimise clearance/habitat replacement	7.3
B17	Fauna Impacts	Reducing potential bird and bat strikes	7.3.8
B20	Visual Amenity	Reducing visual impact	7.12
B21	Rehabilitation and Revegetation	Restore areas impacted during construction but not required post-construction.	7.11
B22/23/24/25	Noise	Minimise Impacts	7.9
B27	Noise	Minimise corona and aeolian noise	7.9
B30/31	Heritage	Stakeholder consultation/un-expected finds protocol	7.10
C2	CEMP	Approval of CEMP prior to construction	7.1.2
C8	Incident Reporting	Reporting protocol	6.6
C13/14	Complaints Procedure	Contact details and reporting	6.6

7.1.2 Construction Environmental Management Plan Requirements

Consent Conditions C2 and C3 of the Minister's approval specifies what the CEMP must cover. Some of these requirements do not relate to the activities to be undertaken by CPP.

A summary of the requirements of the CEMP is provided below, along with information indicating where in this CEMP these requirements are addressed.

Consent Condition	Requirement	Reference Section in CEMP
C2	The Applicant shall prepare and implement a Construction Environmental Management Plan in consultation with Council in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004) or any replacement guideline. No construction associated with the development shall commence until written approval of this plan has been received from the Director-General or his nominee. The Plan must include:	
(a)	A description of all relevant activities to be undertaken on the site during construction including an indication of stages of construction, where relevant;	3
(b)	Identification of the potential for cumulative impacts with other construction activities occurring in the vicinity and how such impacts would be managed;	7.1.3
(c)	Details of any construction sites and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented;	7.11
(d)	Statutory and other obligations that the Applicant is required to fulfil during construction including all relevant approvals/consents, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;	6.6
(e)	Evidence on consultation with relevant public authorities required under this condition and how issues raised by the agencies have been addressed in the plan;	Appendix C
(f)	A description of the roles and responsibilities for all relevant employees involved in the construction of the development including relevant training and induction provisions for ensuring that all employees, contractors and sub-contractors are aware of their environmental and compliance obligations under these conditions of consent;	4
(g)	Details of how the environmental performance of construction will be monitored, and what actions will be taken to address identified potential adverse environmental impacts;	6.1 & 6.9
(h)	Specific consideration of relevant measures identified in the documents referred to under conditions A2b) and A2c) of this consent;	7.1
(i)	The additional requirements of this consent;	7.1
(j)	A complaints handling procedure during construction identified in conditions C13 and C14	6.2 & 6.6
(k)	Register of construction work hazards and the anticipated level of risk associated with each;	6.12 & 6.13

Consent Condition	Requirement	Reference Section in CEMP
(l)	Measures to monitor and manage soil and water impacts in consultation with NOW including: control measures for works close to or involving waterway crossings (including rehabilitation measures following disturbance and monitoring measures and completion criteria to determine rehabilitation success), identification of construction activities that are likely to pose a risk of groundwater interference, and procedures for managing groundwater impacts should they occur;	7.2
(m)	Measures to monitor and manage flood impacts in consultation with NOW;	7.2
(n)	Measures to monitor and manage dust emissions including dust generated by traffic in unsealed public roads and unsealed internal access tracks;	7.6
(o)	Emergency management measures including measures to control bushfires;	6.3 & 6.4
(p)	Information on water sources, including details on sources and security of water supply and water use onsite;	7.6
(q)	The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, include the provision for a replacement dam. Details for any replacement dam must be prepared in consultation with OEH and NOW and submitted to the Director-General for approval prior to developing the dam; and	7.6
(r)	Incorporation of the plans identified in C3.	7.3
C3	As part of the Construction Environmental Management Plan required under condition C2 of this consent, the Applicant shall prepare and implement the following:	
(a)	A **Flora and Fauna Management Plan**, developed in consultation with the OEH, to outline measures to protect and minimise loss of native vegetation and native fauna habitat as a result of construction of the development. The Plan shall include, but not necessarily be limited to:	
(a)(i)	Plans showing terrestrial vegetation communities; important flora and fauna habitat areas; locations of EECs, native pasture; and areas to be cleared. The plans shall also identify, vegetation adjoining the site where this contains important habitat areas and/or threatened species, populations or ecological communities;	7.3
(a)(ii)	Methods to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the development, such as location of fencing, procedures or vegetation clearing or soil removal/stockpiling, procedures for rehabilitation of directly impacted native vegetation (where appropriate) and procedures for enhancing native habitat (such as re-locating hollows or installing nesting boxes and managing weeds;	7.3
(a)(iii)	Procedures to accurately determine the total area, type and condition of vegetation community to be cleared; and	7.3
(a)(iv)	A procedure to monitor the effectiveness of flora and fauna management, and review management methods where they are found to be ineffective.	7.3

Consent Condition	Requirement	Reference Section in CEMP
(b)	A **Ground Cover Management Plan**, developed in consultation with an agronomist, to outline measures to ensure adequate vegetation cover and composition *beneath the solar PV array*.	Not relevant to CPP activities
(c)	A **Landscape Plan**, to minimise visual impacts from the solar plant. The Plan shall include, but not necessarily be limited to:	
(c)(i)	Identification of landscaping objectives and standards based in visual impacts;	7.12
(c)(ii)	Details of species used to enhance, mitigate and/or augment landscaping to minimise the visual impact of the development, particularly with respect to the impacts on nearby residences;	7.12
(c)(iii)	Implementation, management and monitoring strategies to ensure the establishment and ongoing maintenance of landscaped areas; and	7.12
(c)(iv)	A consultation strategy to seek feedback from affected residents and the interested community on the proposed landscape measures.	7.12
(d)	A **Construction Noise Management Plan** to manage noise impacts during construction and to identify all feasible and reasonable noise mitigation measures. The Plan shall include, but not necessarily be limited to:	
(d)(i)	Details of construction activities and an indicative schedule for construction works;	7.9
(d)(ii)	Identification of construction activities that have the potential to generate noise impacts on surrounding land uses, particularly residential areas;	7.9
(d)(iii)	Detail the requirements for Noise Impact Statement(s) for discrete work areas, including construction site compounds;	7.9
(d)(iv)	Detail what reasonable and feasible actions and measures would be implemented to minimise noise impacts;	7.9

Consent Condition	Requirement	Reference Section in CEMP
(d)(v)	Procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity, as well as procedures for dealing with and responding to noise complaints;	7.9
(d)(vi)	An out-of-hours (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined in condition B22 of this consent, including a risk assessment process under which an Environmental Representative may approve out-of-hour construction activities deemed to be of low environmental risk and refer high risk works for the Director-General's approval. The OOHW protocol shall detail standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, and detail a standard protocol for referring applications to the Director-General; and	7.9
(d)(vii)	A description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, the locations where monitoring would take place, how the results of this monitoring would be recorded and reported; and, if any exceedance is detected how any non-compliance would be rectified.	7.9
(e)	A **Traffic Management Plan** to manage traffic conflicts that may be generated during construction. In preparing the Plan, the Applicant shall consult with the Council and RMS. The Plan shall address the requirements of the relevant road authority and shall include, but not necessarily be limited to:	
(e)(i)	The origin, number, size, frequency and final destination of vehicles entering/exiting the site;	8.6
(e)(ii)	Loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles;	8.6
(e)(iii)	The management and coordination of the movement of construction and personnel vehicles to the site and measures to limit disruption to other motorists, emergency vehicles and school but timetables (particularly the Miandetta to Nyngan route);	8.6
(e)(iv)	Scheduling of haulage vehicle movement to minimise convoy length or platoons. Consideration should be given to minimise the route length for road transport of al size and over mass loads to minimise the impact on traffic;	8.6
(e)(v)	Details of intersection improvement works in accordance with *Austroads Guide to Road Design 2010* and RMS Supplements;	8.6
(e)(vi)	Demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with;	8.6
(e)(vii)	Details of measures to minimise interactions between the development and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc;	8.6

Consent Condition	Requirement	Reference Section in CEMP
(e)(viii)	Procedures to manage construction traffic to ensure the safety of the school bus and its passengers, inclusive of driver training and procedures to ensure the adequacy of the management measures;	8.6
(e)(ix)	Implement all reasonable and feasible measures to reduce the construction related traffic on the Barrier Highway and public roads between the site and the highway;	8.6
(e)(x)	Schedule construction vehicle movements on site to occur outside school bus hours;	8.6
(e)(xi)	Procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock;	8.6
(e)(xii)	Speed limits to be observed along routes to and from the site and within the site and access road; and	8.6
(e)(xiii)	Details of the expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.	8.6
(f)	And **Aboriginal Heritage Plan** to monitor and manage Aboriginal heritage shall be developed in consultation with OEH and registered Aboriginal stakeholders, and including the following:	
(f)(i)	Details of further archaeological investigations and/or salvage measures to be carried out prior to construction;	7.10
(f)(ii)	Procedures for the management of identified objects within the development site;	7.10
(f)(iii)	Procedures for dealing with unidentified objects and/or human remains;	7.10
(f)(iv)	Aboriginal cultural heritage induction processes for construction personnel; and	7.10
(f)(v)	Procedures for ongoing Aboriginal consultation and involvement.	7.10

7.1.3 Cumulative Impacts

For a short period (February to July 2014) both First Solar and CPP construction activities will occur simultaneously. During this six (6) month period there is the potential for cumulative impacts.

Potential cumulative impacts will be managed through both contractors (ie. First Solar and CPP) operating with the same performance standards and reporting requirements within their respective Construction Environmental Management Plans.

Internal reporting requirements to AGL under both CEMPs will provide the means to monitor cumulative impacts.

The Traffic Management Plan (refer **Section 6.14**) as prepared, has quantified and considers the extent of this cumulative impact and is structured to ensure both First Solar and CPP operate under the same controls during this period.

The Project Manager would monitor (through consultation with BSC and the DP&I) any emerging projects within the project vicinity that would potentially lead to cumulative impacts. At the time of writing, it is noted that the Nyngan Scandium Project has received Director General's Requirements from the DP&I. As consent has not been granted it is unclear what, if any, cumulative impacts may emerge. This, and any other emerging projects, will be monitored to identify any impacts that could potentially act in concert with this project to lead to cumulative impacts to the local environment.

7.2 Soil and Water Management

7.2.1 Introduction

This Soil and Water Management Plan (SWMP) forms part of the CEMP for the Nyngan Solar Plant.

This SWMP has been prepared to address the requirements of Project Approval SSD 5355, together with the mitigation and management measures listed in the Nyngan Solar Plant EIS (ngh environmental, 2013). Condition B9 of the Project Approval requires that soil and water management measures be employed during construction and that these measures be consistent with *Managing Urban Stormwater – Soils and Construction Vol 1* (Landcom, 2004), hereafter referred to as the Blue Book.

Additionally, condition C2(l) provides for measures to be included within the CEMP relating to the management of soil and water impacts. Specific measures identified via C3(l) are provided in **Table 7.1** including commentary and/or reference to the relevant sections of this report where the matter is addressed.

Table 7.1 – Relevant Development Consent Conditions and Mitigation Measures

Specific Matters	Commentary
C3(l): Measures to monitor and manage soil and water impacts in consultation with NOW including:	
Control measures for works close to or involving waterway crossings (including rehabilitation measures following disturbance and monitoring measures and completion criteria to determine rehabilitation success)	For the avoidance of doubt, no waterway crossings are required and no works are proposed in close proximity (within 40 metres) of any waterways. NOW has been consulted in the context of the preparation of this CEMP and their acceptance of the document is provided in **Appendix C**.
Identification of construction activities that are likely to pose a risk of groundwater interference	Refer **Section 7.2.12** Section 6.4.1 of the EIS confirms that groundwater in the vicinity of the project site has standing water depths of between 40 and 60 metres. Works associated with CPP activities are limited to substation development and transmission line construction. Neither of these activities are considered to result in any likely direct interference with groundwater nor to require any activities that would result in any extraction of, or infiltration to, the local groundwater environment.
Procedures for managing groundwater impacts should they occur	As above, no groundwater impacts are anticipated in relation to CPP operations due to the depth of the groundwater and the nature of those works.
C3(n): measures to monitor and manage dust emissions including:	
Dust generated by traffic on unsealed public roads and unsealed internal access tracks	Refer **Section 7.6.4.3**
Mitigation Measure 9:	
Excavated topsoil would be stored separately from subsoil and replaced in a manner that replicates original profiles as closely as possible to assist rapid revegetation.	Refer **Section 7.2.6**
Mitigation Measure 60	
Site specific Erosion and Sediment Control Plans would be prepared, implemented and monitored during the project, in accordance with Landcom (2004), to minimise soil and water impacts. These plans would include provisions to ensure any discharge of water from the site is managed to ensure ANZECC (2000) water quality criteria are met and traffic generated soil erosion is minimised.	Refer **Figure 6**
Mitigation Measure 61	
A Spill Response Plan would be developed to: • Manage the storage of any potential contaminants onsite. • Mitigate the effects of soil contamination by fuels or other chemicals • Prevent contaminants affecting adjacent pasture and dams.	Refer **Section 7.8**
Mitigation Measure 63	

Table 7.1 – Relevant Development Consent Conditions and Mitigation Measures

Specific Matters	Commentary
Dust suppression activities would be undertaken, including: During construction and decommissioning • A water cart (truck) would be utilised routinely, wetting all access roads and exposed dusty surfaces as appropriate to the conditions of the project site. • Stockpiled topsoil and other materials that exhibit significant dust lift off would be wet down routinely and as appropriate. • Stabilising techniques and/or environmentally acceptable dust palliatives will be utilised if the wetting down of surfaces prove to be ineffective. During operation • Any area that was temporarily used during construction (laydown and trailer complex areas) would be restored back to original condition or re-vegetated with native plants. • Areas that may not have been hard packed but have been disturbed in some form would be treated with environmentally acceptable dust palliatives and / or vegetated (e.g. by means of hydro seeding) with seeds native to the area.	Refer **Section 7.6**

7.2.2 Potential Impacts

Potential impacts associated with the Project including the exposure of soil, leading to soil erosion and sedimentation of surrounding land, urban areas and drainage lines, and may expose saline soils. Other potential impacts include degradation of water quality and sedimentation of waterways.

As noted in **Section 2.2**, the scope of CPP's operations are limited to the development of the substation and transmission line. Specific sediment controls will be developed adjacent to the substation site and temporary construction compound – refer **Figure 6**.

Topsoil will be stripped and stockpiled from those areas that will be impacted as a result of the project (both as a consequence of permanent infrastructure and from temporary construction activities).

On the conservative assumption of a uniform 10 mm of top soil, and that 50% of the 2.5 ha CPP Site would need stripping, this will generate approximately 1,250m^3.

This will be stockpiled for later use in rehabilitation of areas temporarily disturbed by the connection works construction (AGL Staging Report – Stage 2). In these areas, the surfaces will be ripped, the topsoil re-spread and the area seeded to establish a groundcover.

Those areas stripped within the CPP Site will be restricted to the Temporary Construction Compound (approx 100m x 40m), the substation compound (approx 110m x 46m) and the internal access track.

The internal access track, construction compound and substation bench will then be built. This activity will entail the use of a grader, excavator and roller to complete the earthworks. These earthworks will essentially entail the formation and compaction to finished surfaces levels.

The extent of land forming involved is negligible as the site is relatively flat. The works for the substation bench would include modest (shallow - <500 mm) excavation. Recovered sub-soil material would be used to assist roll a compacted hard stand over the construction compound and access track. This will assist protect topsoil and provide a finish in these areas more capable

of accommodating vehicle movements and less susceptible to rain damage or dust emissions resulting from high winds.

The installation of power poles within the transmission line would be completed using a truck mounted auger rig and the concrete pouring trucks. It is likely that minor quantities of overburden may result in relation to pole installation.

7.2.3 Soil Identification and Reuse Assessment

The Project and Site Manager will conduct a soil identification and reuse assessment at the commencement of the project.

This assessment will be documented in *FRM-G002 Waste Management and Minimisation Assessment*.

7.2.4 Soil Reuse Procedures

The following procedures will be implemented by the Site Manager;

- Remove surface vegetation by blading off, by scarification and raking, or kill off by application of a suitable non-residual herbicide applied not less than two weeks before stripping commences;
- Stripping should be undertaken by the excavator standing on the surface of the topsoil, digging the topsoil to its maximum depth and loading into site or off-site transport vehicles;
- Topsoil will normally be stripped to a thickness defined by depth below the surface and/or a distinct colour change. Stripping topsoil too deeply so that subsoil becomes incorporated will reduce its quality and fertility.
- Soil generally gains strength and becomes more resistant to damage as it dries. Consequently, it should be handled in the right conditions (dry) of weather and soil moisture and using suitable machinery (not too heavy causing compaction).
- Excess soil associated with power pole installation would be spread to assist with natural vegetation regeneration and would not be removed from the site or stockpiled.

7.2.5 Soil and Stockpile Management Assessment

At the planning stage of this project, the Site Manager is responsible for identifying and planning soil stockpile requirements using *FRM-G001 Erosion and Sediment Control Plan*.

An indicative stockpile location for the substation construction area is identified on **Figure 6**.

7.2.6 Soil and Stockpile Management Procedures

Soil and stockpile management includes:

- Soil stockpiles will be maintained at minimum amounts. (This is calculated using *FRM-G001 Erosion and Sediment Control Plan*;
- Strip and stockpile topsoil separately from subsoil or overburden for later rehabilitation of the site;
- Stockpiles will have sediment fencing established downslope and will be identified in *FRM-G001 Erosion and Sediment Control Plan*;
- Upslope water (if applicable) will be diverted around the stockpiles as per *FRM-G001 Erosion and Sediment Control Plan*;
- Ensure stockpiles are not within five metres of significant vegetation, concentrated water flows, roads or other water flow areas;
- Stockpiles that will remain for a period of more than 2 weeks will be covered.

- In accordance with mitigation measure 9, topsoil and subsoil would be stored separately and replaced in a manner that replicates the original profile.

7.2.7 Spoil Transport Assessment

Given the small areas involved in CPP operations it is not anticipated that soil would need to be stockpiled. Notwithstanding, provision has been made for stockpile location as per **Figure 6** and this area is to be protected by appropriate sediment controls.
At the commencement of the project the Site Manager will assess if spoil is to be stockpiled and reused or removed from site immediately.
FRM-G001 Erosion and Sediment Control Plan will be utilised to document this assessment.

7.2.8 Spoil Transport Procedures

It is not anticipated that spoil would require removal from the site. If however spoil were to be removed from site, the following measures would apply;

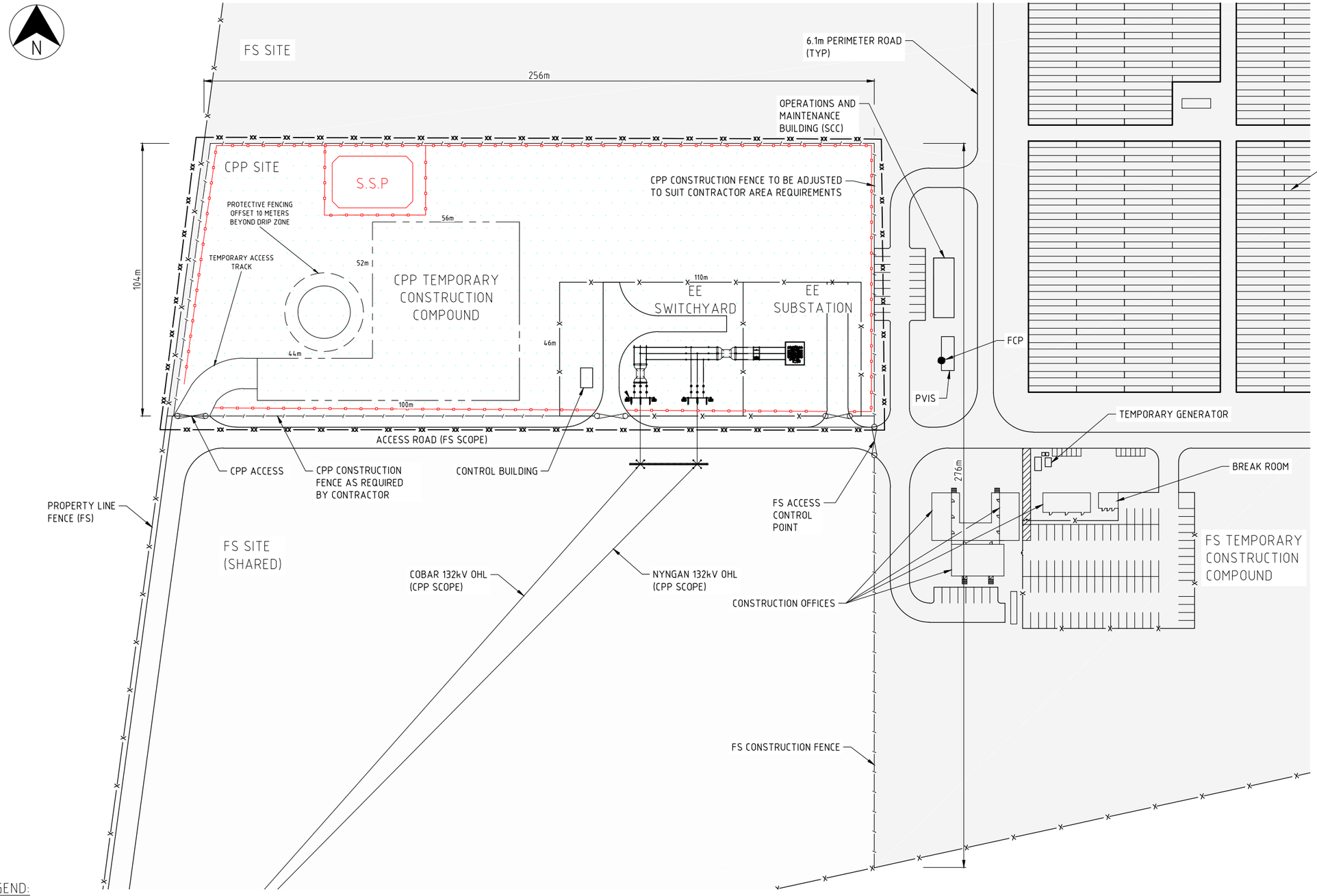
- It will be placed in trucks and removed to a licenced disposal depot.
- All loads will be covered prior to leaving site.
- Prior to leaving site all trucks will report to a designated point (Site Office). At this stage the truck and its load will be inspected by the Site Manager or his delegate. Records of this inspection will be recorded in *FRM-C040 Waste Disposal Register*.
- The purpose of this register is to monitor disposal of materials. *FRM-C040 Waste Disposal Register* will also identify if disposal certificates are required.

7.2.9 Erosion and Sediment Control Assessment

A review of the site area associated with the CPP portion of the project has identified the need for the establishment of erosion and sediment controls in conjunction with the substation construction area.

Figure 6 overleaf utilises a drawing provided by SKM and showing the interface with the Solar Plant infrastructure, augmented to show proposed sediment control measures.

The assessment used to identify and plan erosion and sediment control requirements will be documented in *FRM-G001 Erosion and Sediment Control Plan*.

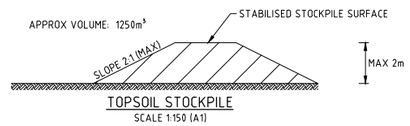


NOTES:

1. TEMPORARY FENCE AROUND CONSTRUCTION AREAS TO BE PROVIDED BY CONTRACTOR TO SUIT CONTRACTOR CONSTRUCTION REQUIREMENTS.
2. AREAS FOR CONSTRUCTION SHOWN INDICATIVE ONLY, CONTRACTOR TO ADJUST TO SUIT CONSTRUCTION REQUIREMENTS.

LEGEND:

- SUBSTATION PERMANENT SECURITY FENCE
- CONSTRUCTION FENCE
- SEDIMENT FENCE
- S.S.P — SOIL STOCKPILE
- EXTENT OF WORKS



TOPSOIL STOCKPILE
SCALE 1:150 (A1)
SCALE 1:300 (A3)

LEGEND:

EE - ESSENTIAL ENERGY
FS - FIRST SOLAR
CPP - CONSOLIDATED POWER PROJECTS
FCP - FACILITY CONNECTION POINT
- FS SITE (SHARED)
- FS SITE
- CPP SITE

DETAILED PLAN

SCALE 1:800 (A1)

0 20 40 60 80m
16 8

SKM
A.C.N 001 024 095
Sinclair Knight Merz
100 Christie Street
St Leonards, SYDNEY, NSW 2065
AUSTRALIA
Tel: +61 2 9928 2100
Fax: +61 2 9928 2500
Web: www.globalskm.com

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	23/12/13	ZD	AB	FOR INFORMATION

CHECKED/APPROVED	NAME	DATE
APPROVED	AB	23/12/2013
SURVEY	-	.
DESIGNER	-	.
DRAFTING	-	23/12/2013

APPROVAL AUTHORITY
NSW DEPARTMENT OF PLANNING & INFRASTRUCTURE

CLIENT
CONSOLIDATED POWER PROJECTS

PROJECT
NYNGAN CONNECTION ASSEST

GEOLYSE
ORANGE
orange@geolyse.com
www.geolyse.com
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

DRAWING
EROSION AND SEDIMENTATION CONTROLS

PERMANENT MARK: -	RL: -	DATUM: A.H.D.	
PROJECT NUMBER: 213340	DRAWING SHEET: 01A_E01	ORIGINAL A1	
AUTOCAD FILE: 21340_03B_ENV.dwg	12D/CIVILCAD FILE: -	REVISION A	
STATUS: FOR INFORMATION	SHEET E01 OF E01		

7.2.10 Erosion and Sediment Control Procedures

The following procedures will be implemented by the Site Manager:

- Ensure that a minimum of land is exposed to the risk of erosion for the shortest period of time;
- Install temporary erosion control measures when undertaking small pits and trenches excavations;
- Sediment control devices will be identified in *FRM-G001 Erosion and Sediment Control Plan* and installed parallel with the ground contours, immediately down slope of any areas where the natural ground surface will be disturbed;
- Where possible soil and material collected in erosion control or sediment collection structures will be reused to fill excavations or site restoration (unless contaminated);
- Machinery and vehicles are to remain on existing roads and access roads whenever possible. Movements will be further restricted during and immediately following wet weather to minimise disturbance to ground cover;
- Works will not be undertaken immediately prior to or during periods of high rainfall;
- Erosion and sediment collection structures will be inspected on a weekly basis. This inspection will be documented in *FRM-C041 Weekly Environmental Review Log*.

7.2.11 Site Constraints

Site constraints and characteristics are defined in the Table below.

Table 7.2 – Constraints and Characteristics

Constraint/Opportunity	Value
Rainfall resistivity	R = 1200
Rainfall Zone	Zone 11
Slopes	Range 0.05% to 0.3% Generally less than 0.5%
Soil Erodibility	0.04
Calculated Soil Loss	12 tonnes/ha/year
Soil Loss Class	Class 1 – very low erosion hazard
Soil texture group	Type C – coarse grained
Soil hydrologic group	Group A – very low run off potential

The likely soil loss is calculated using the Revised Universal Soil Loss Equation (RUSLE) with the following factors:

R	=	1 200
K	=	0.04
LS	=	0.2 (average 100m length with <1% slope)
P	=	1.3
C	=	1.0 (bare soil)

Given that the site is Soil Loss Class 1, there are no constraints on the timing of development at this site (refer Table 4.3 Managing Urban Stormwater – Soils and Construction Vol. 1 Landcom, 2004).

Extremely low grades and lack of defined water courses reduces the erosion risk to extremely low.

Soil types and site characteristics mean that localised, non-structural, erosion control measures are appropriate and no permanent structures (such as sediment basins) are required.

7.2.12 Groundwater Interference

There are no construction activities proposed that are likely to pose a risk of groundwater interference.

Regardless, a dewatering procedure is included in **Section 7.7** as a precautionary measure.

7.2.13 Flooding and Waterways

- The design shall ensure that the substation and office building are located outside of the 1:100 year flood line as defined on Figure 6-1 of the EIS.
- There are no waterways in the solar farm or access road construction foot print. Therefore, there are no specific design considerations or consultation required.
- Soil and Water Management is to be consistent with the Blue Book;

It is noted by NOW that a 100 year Average Recurrence Interval flood event would result in inundation of 60% of the site, to a maximum depth of 30cm and velocity of 0.2m/s. It is noted that this flooding would be concentrate din the eastern extent of the site, in proximity to Whitbarrow Creek. Given the CPP infrastructure is located in the west of the site it is considered such a flood event is unlikely to impact upon CPP infrastructure or activities. As such, no specific mitigation is proposed in this respect.

7.3 Flora and Fauna Management Plan

7.3.1 Scope:

This Flora and Fauna Management Plan forms part of a Construction Environmental Management Plan (CEMP): specifically, the CEMP prepared for the construction of the sub-station and the grid connection.

A second CEMP has been prepared by First Solar for the solar farm and associated access.

The scope of this Flora and Fauna Management Plan is exclusively on measures required to be adopted during the construction phase.

Refer **Appendix H** for confirmation of compliance with conditions of consent.

7.3.2 Relationship to Biodiversity Offset Management Package:

Mitigation Measure 21 states:

An Offset Plan would be developed with input from OEH and the CMA and according to the strategy provided in Appendix G of the Biodiversity Assessment. It would be finalised prior to any construction impacts, as outlined in the Biodiversity Assessment. The objective of offsetting is to ensure that an overall 'maintain or improve' outcome is met for the project; where impacts cannot be avoided, or sufficiently minimised, the residual impact would be offset in perpetuity.

A detailed Biodiversity Offset Plan (BOP) supported by a suitable metric and addressing the Department's *Principles for Biodiversity Offsets in New South Wales* has been developed by NGH Environmental, with input from OEH and the CMA. It is understood that OEH have provided their confirmation of the adequacy of the BOP. The BOP also confirms that ongoing consultation with the CMA and affected landowners have informed the preparation of the BOP.

This BOP has been prepared by a third party and does not form part of this *Flora and Fauna Management Plan*. However, a connection does exist.

Consistent with Mitigation Measures specified in the Environmental Impact Statement:

> *Prior to finalising the Offset Site boundaries, the proponent would validate the area impacted by construction to ensure that the actual, not estimated area is offset.*

Notwithstanding that the BOP has now been prepared, Offset Site boundaries will only be finalised after the area impacted by construction is validated.

The BOP demonstrates that the actual amount of native vegetation impacted was offset. Accordingly, whilst the Biodiversity Offset Plan has been finalised prior to construction, it can only be fully implemented after construction.

Prior to finalising the Offset Site boundaries, CPP will validate the actual areas impacted by construction to ensure that the actual, not estimated, impacted area is offset.

7.3.3 Relationship to Operational Environmental Management Plan and Decommissioning Management Plan

As noted, the scope of this Flora and Fauna Management Plan is exclusively on measures required to be adopted during the construction phase.

There could, however, be actions and monitoring efforts that whilst instigated pre and during construction, may extend beyond the construction effort and require ongoing management during the operational and, eventually, the decommissioning phase of the project.

Consent Condition C4 requires the preparation and implementation of an Operational Environmental Management Plan (OEMP) and Condition C6 requires the preparation of a Decommissioning Management Plan (DMP).

Flora and fauna management plans will be included in the OEMP and DMP and provide for continuity in managing ecological impacts beyond the construction phase of the project

7.3.4 Objectives:

This Flora and Fauna Management Plan has been prepared to meet the requirements of:

- Development consent condition C3(a);
- Development consent condition B15;
- Development consent condition B16;
- Mitigation measure 3; and
- Mitigation measure 21.

Development consent condition C3(a) states:

The Flora and Fauna Management Plan is to be developed in consultation with OEH to outline measures to protect and minimise loss of native vegetation and native fauna habitat as a result of the construction of the development. The Plan shall include, but not necessarily be limited to:

i) plans showing terrestrial vegetation communities; important flora and fauna habitat areas; locations of EECs, native pasture; and areas to be cleared. The plans shall also identify vegetation adjoining the site where this contains important habitat areas and/or threatened species, populations or ecological communities;

ii) methods to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the development, such as location of fencing, procedures for vegetation clearing or soil removal/stockpiling, procedures for rehabilitation directly impacted native vegetation (where appropriate) and procedures for enhancing native habitat (such as re-locating hollows or installing nesting boxes and managing weeds);

iii) procedures to accurately determine the total area, type and condition of vegetation community to be cleared; and

iv) a procedure to monitor the effectiveness of flora and fauna management, and review management methods where they are found to be ineffective.

Consent condition 15 states

The clearing of all native vegetation is to be limited to the minimal extent practicably required. Details regarding the procedures for clearing native vegetation and minimising the extent of clearing shall be clearly included in the Flora and Fauna Management Plan contained in condition C3(a).

Consent condition 16 states:

The trunks and major branches from cleared trees shall be used, to the fullest extent practicable, to enhance habitat (coarse wooden debris) in rehabilitate areas (either in offset areas of areas adjoining impacted areas) and included in the Construction Flora and Fauna Management Plan contained in condition C3(a).

7.3.5 Assessment

Groundcover Vegetation

Establishment of the 40m easement and the installation of transmission line infrastructure will require the clearing of overstorey vegetation. Groundcover vegetation will mostly be retained.

Impacts to groundcover vegetation will be restricted to the establishment of an access track and from disturbance associated with the installation of pole footings and line laydown during construction.

The majority of vegetation to be impacted comprises exotic pasture or cropping areas (approximately 10.5ha within the easement). However, a small amount of good condition native groundcover vegetation (approximately 4.5 ha within the easement) will be impacted in the area immediately south of the Barrier Highway.

This is identified as *Area 4* in the Environmental Assessment and its location is shown below.

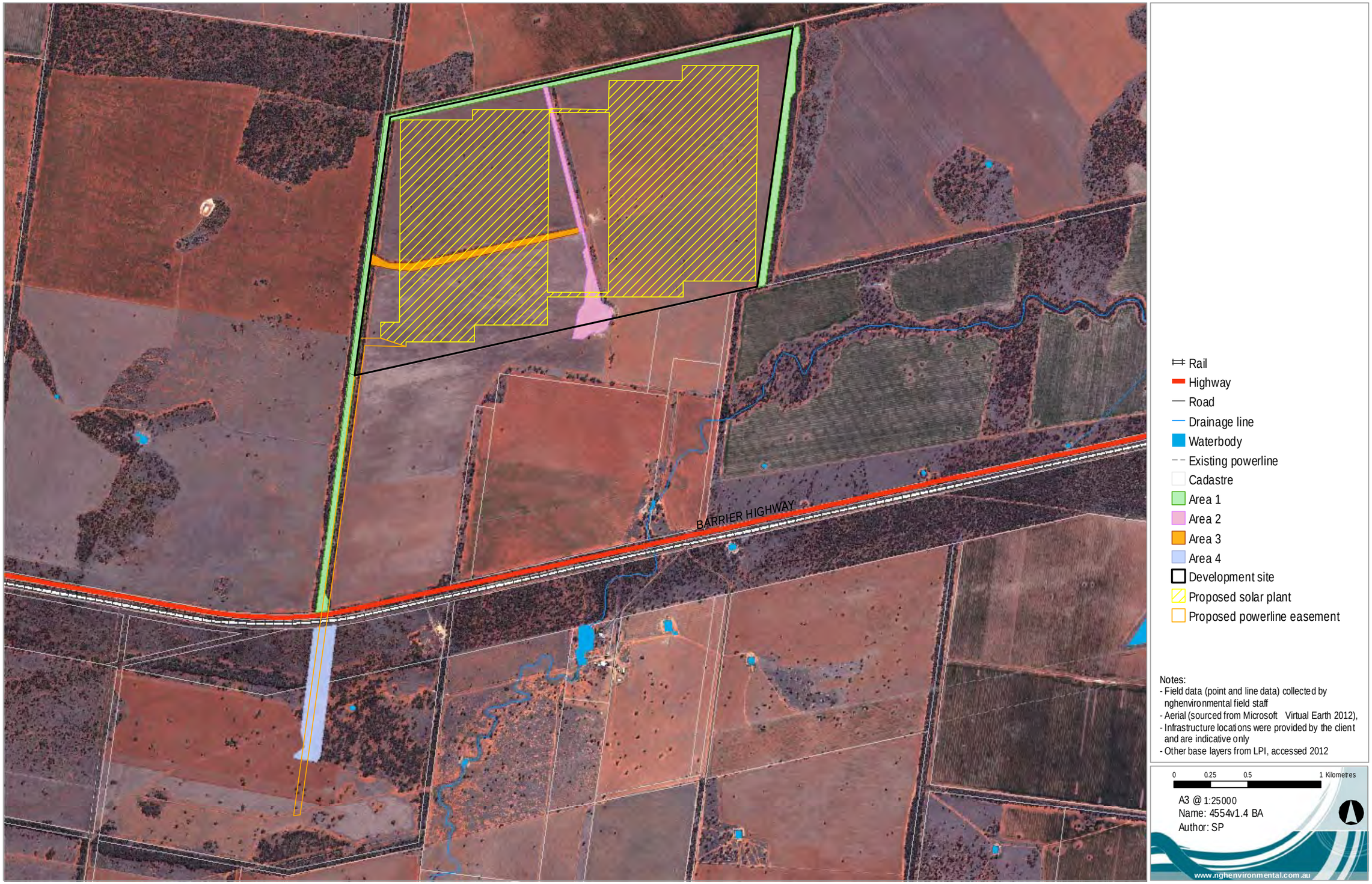


Figure 4-1 Habitat areas defined during the survey at the Proposal site.

This area is described as good condition Poplar Box-Gum barked Coolabah-White Cypress Pine shrubby woodland.

Figure 4-3 Vegetation types and condition at the subject site.

Assuming a maximum width of 5m, this will equate to approximately 1.2ha of exotic vegetation and 0.5 ha of native vegetation permanently cleared within the easement.

This area of native vegetation was also considered to provide potential habitat for two threatened flora species: the Red Darling Pea and the Pine Donkey Orchid. The timing of the ecological surveys completed at the time of the Environmental Impact Statement was not suitable for detecting these species. Accordingly, a spring time survey was recently undertaken to confirm the presence (or not) of these species.

The supplementary survey was carried out on the 8 October 2013. A survey of all suitable habitats for the Red-darling Pea and Pine Donkey Orchid within woodland areas within and immediately adjacent to the proposed 40m transmission line easement was conducted.

East-west transects spaced approximately 5 – 20 m apart were walked slowly on foot. As a precautionary measure transects were also conducted within the north-south strip of good condition vegetation within the development site.

Neither the Red-darling Pea nor the Pine Donkey Orchid was detected within the survey area. Impacts to these species from the construction of the transmission line and establishment of the easement are therefore considered highly unlikely. It was concluded that no additional management or offsetting for these species is considered to be required.

The sub-station will be located within a portion of cleared, farmed paddock and not require the removal of any native vegetation.

Canopy Vegetation and Hollow Bearing Trees

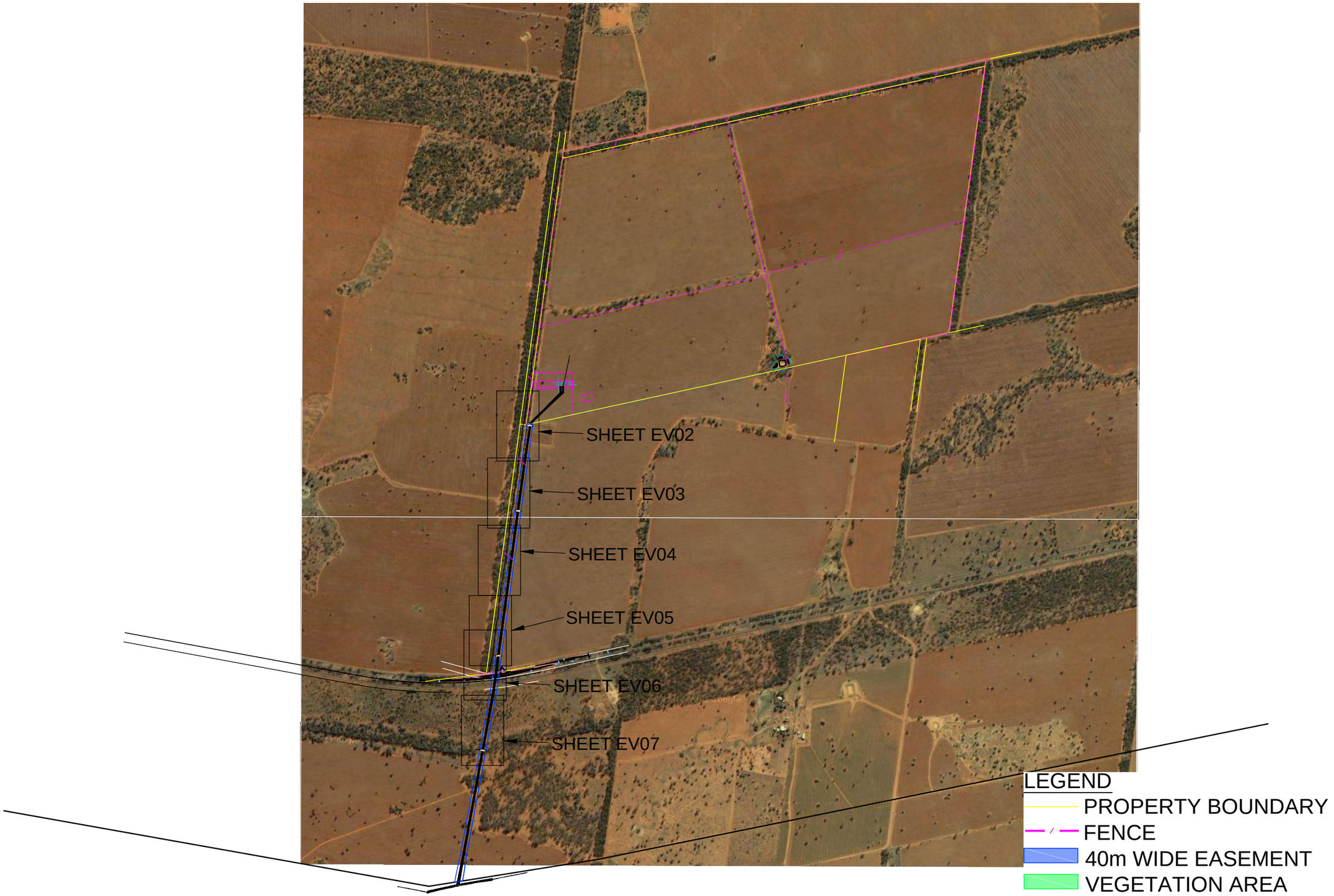
The Environmental Impact Statement assumed that four (4) hollow bearing trees would require removal for the establishment of the power line easement.

The location of these hollow bearing trees in relation to the transmission line easement is shown below.

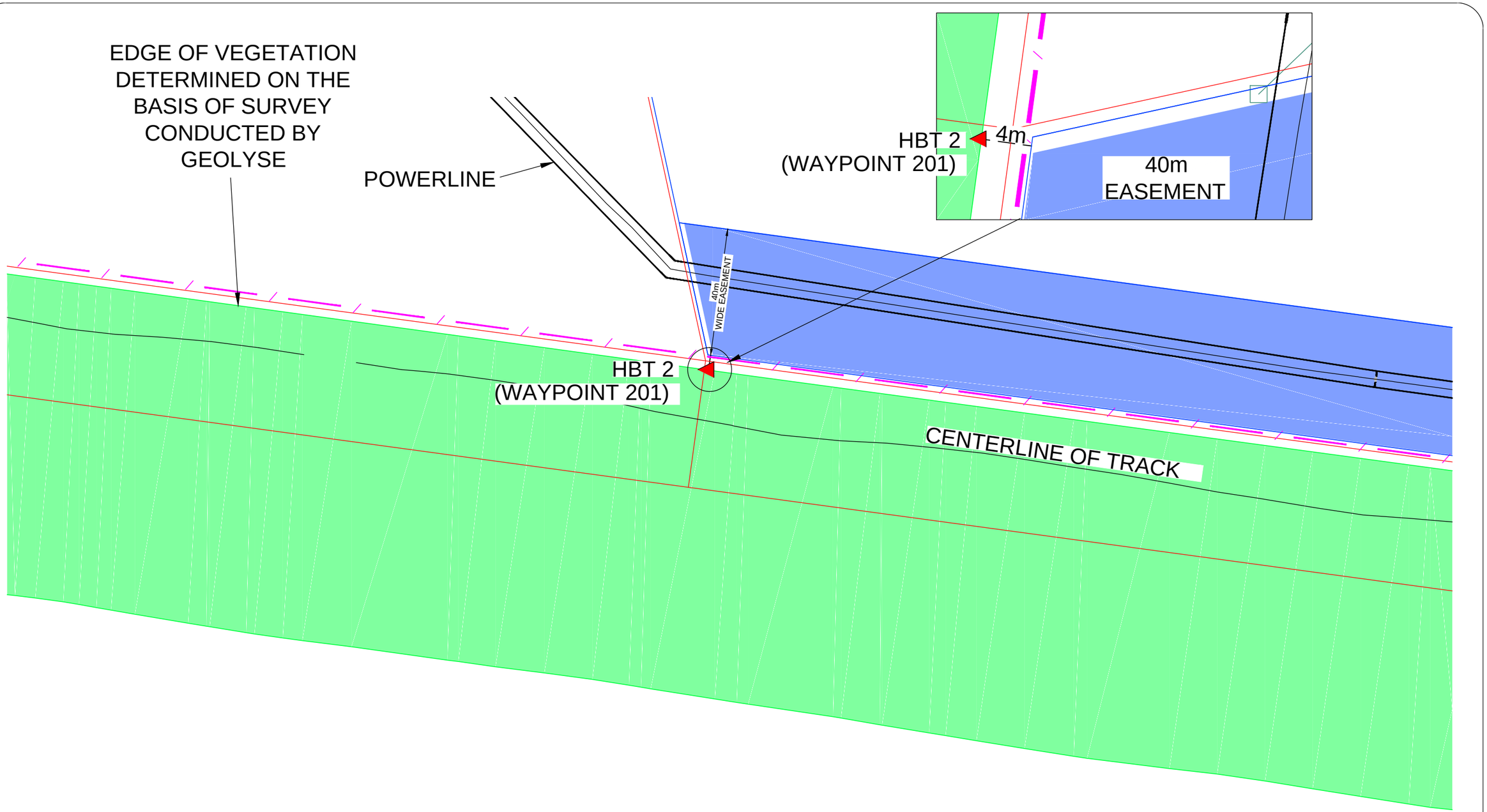
Figure 4-7 Fauna habitats at the subject site.

Detailed design has now established that these four HBT do not need to be removed. The drawings below show the location of these four trees in relation to the transmission line easement. In all cases the HBT can be retained.

Impacts to these HBT would be restricted to pruning; if necessary.

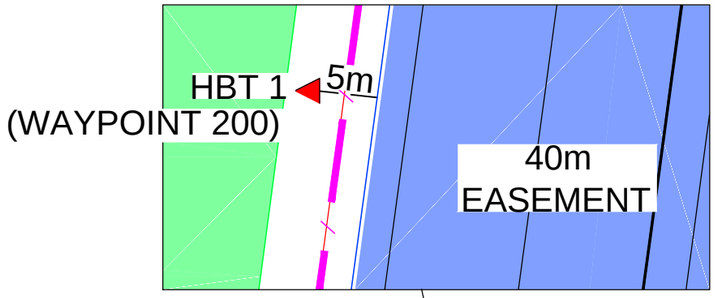

SHEET EV02
SHEET EV03
SHEET EV04
SHEET EV05
SHEET EV06
SHEET EV07
LEGEND
PROPERTY BOUNDARY
FENCE
40m WIDE EASEMENT
VEGETATION AREA

SHEET EV01


EDGE OF VEGETATION DETERMINED ON THE BASIS OF SURVEY CONDUCTED BY GEOLYSE
POWERLINE
HBT 2
(WAYPOINT 201)
4m
40m
EASEMENT
40m WIDE EASEMENT
HBT 2
(WAYPOINT 201)
CENTERLINE OF TRACK
LEGEND
PROPERTY BOUNDARY
FENCE
40m WIDE EASEMENT
VEGETATION AREA

EDGE OF VEGETATION DETERMINED ON THE BASIS OF SURVEY CONDUCTED BY GEOLYSE

POWERLINE



CENTERLINE OF TRACK

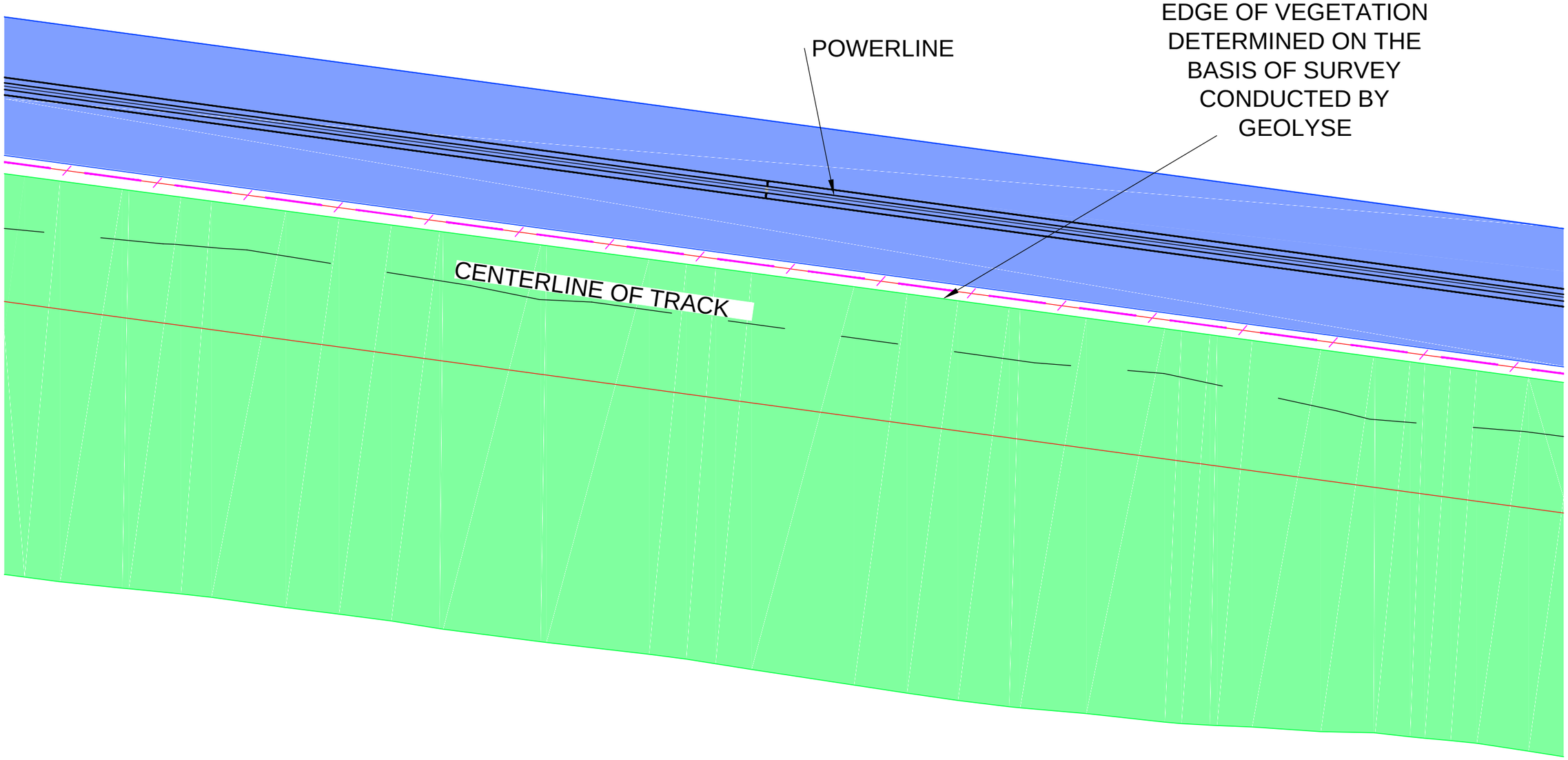
40m WIDE EASEMENT

HBT 1
(WAYPOINT 200)

LEGEND

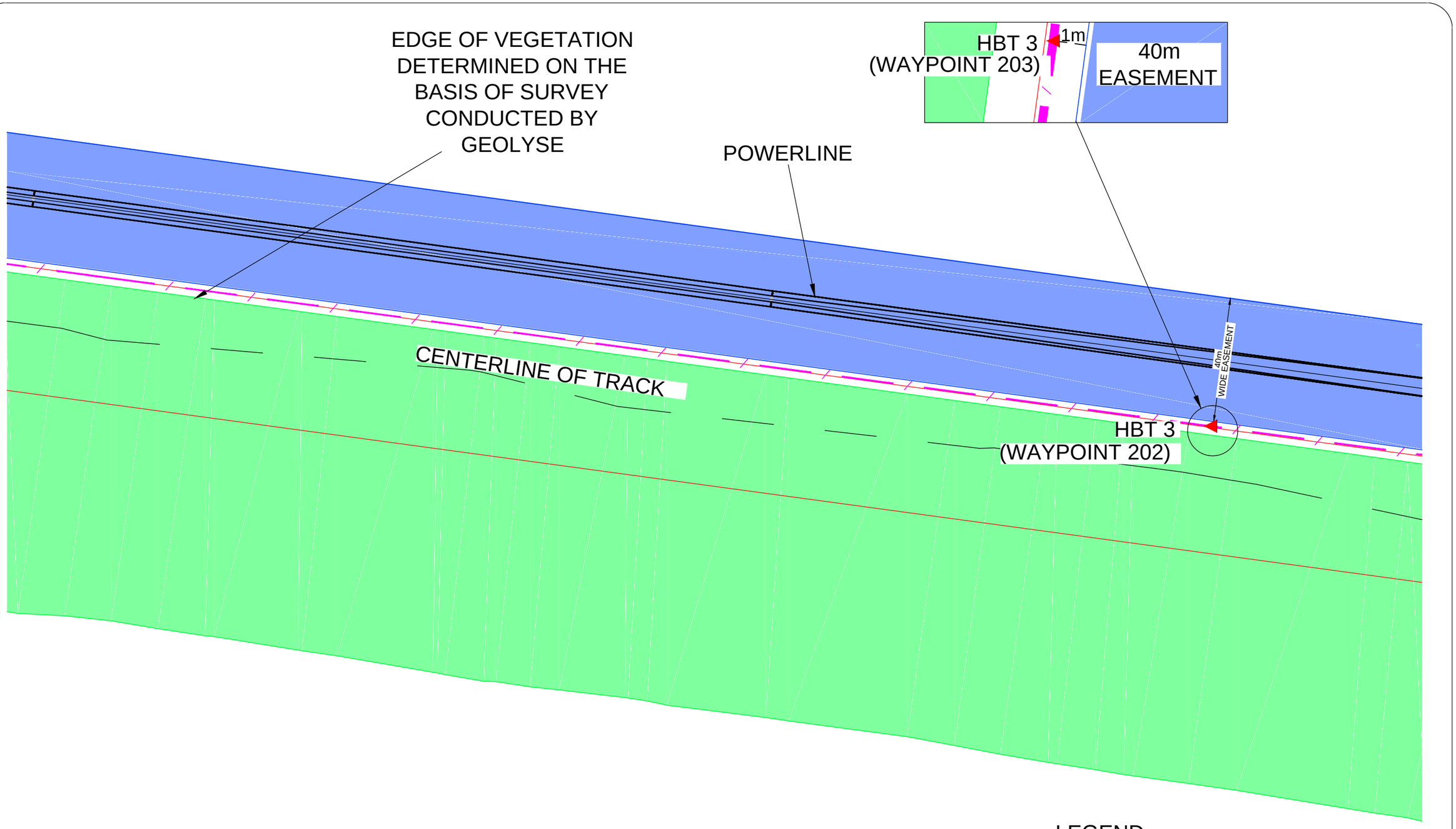
- PROPERTY BOUNDARY
- FENCE
- 40m WIDE EASEMENT
- VEGETATION AREA

SHEET EV03

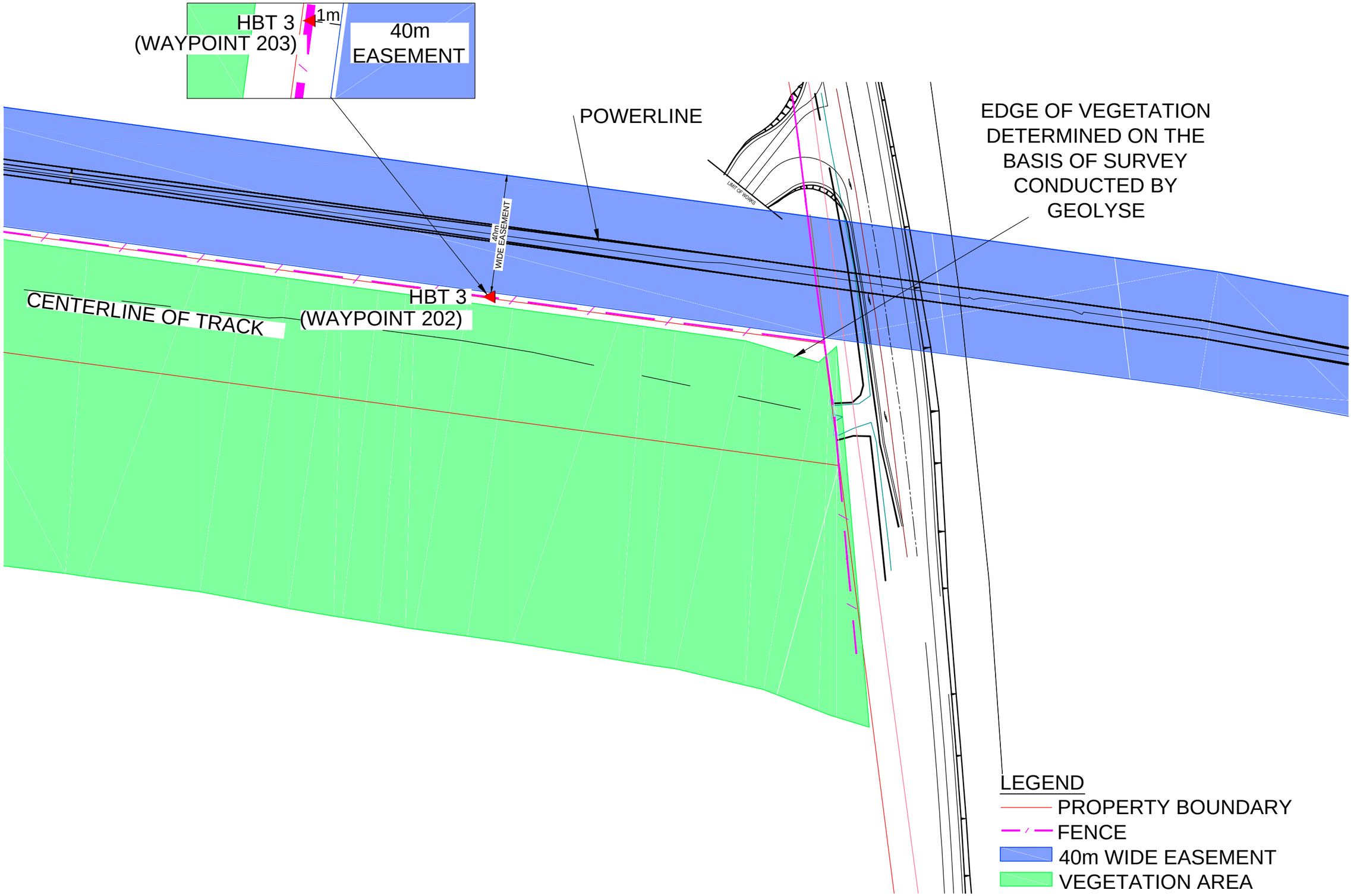


LEGEND

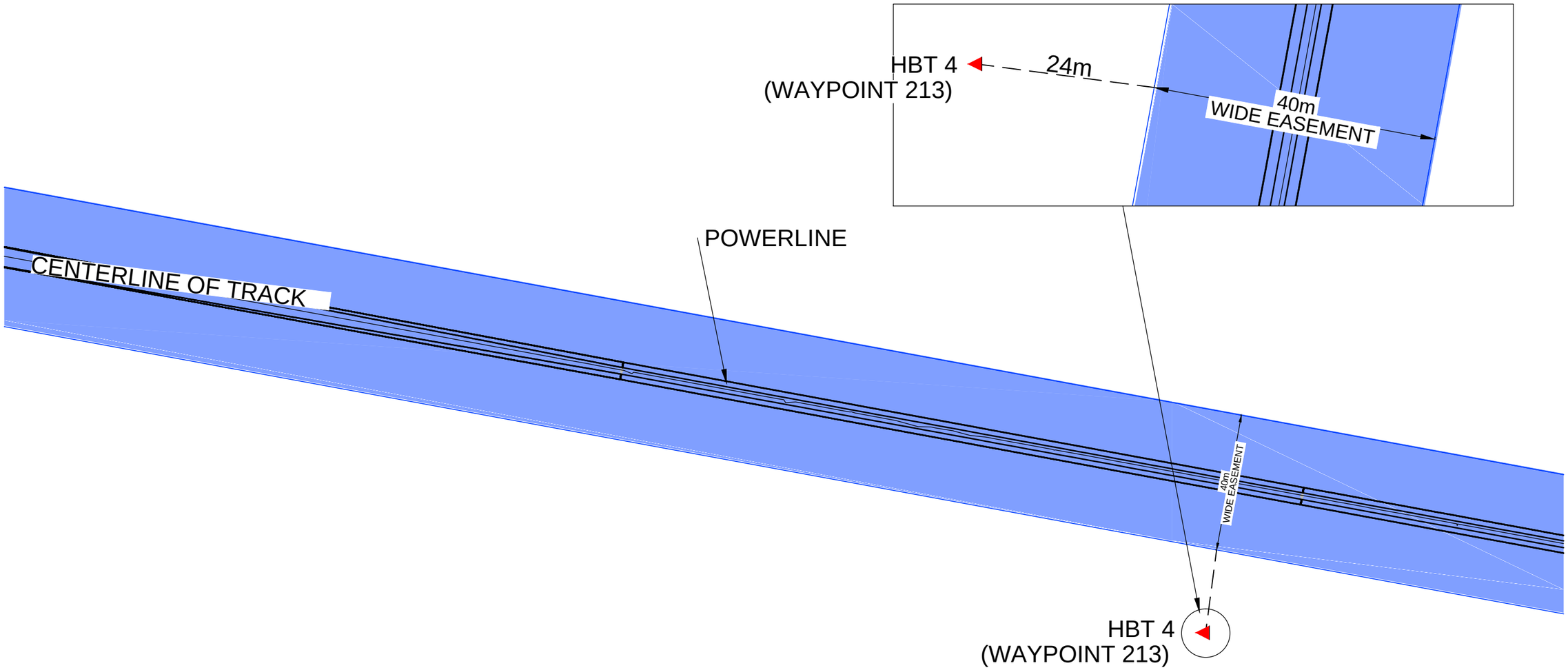
- PROPERTY BOUNDARY
- FENCE
- 40m WIDE EASEMENT
- VEGETATION AREA


EDGE OF VEGETATION DETERMINED ON THE BASIS OF SURVEY CONDUCTED BY GEOLYSE
POWERLINE
HBT 3 (WAYPOINT 203)
1m
40m EASEMENT
CENTERLINE OF TRACK
40m WIDE EASEMENT
HBT 3 (WAYPOINT 202)
LEGEND
PROPERTY BOUNDARY
FENCE
40m WIDE EASEMENT
VEGETATION AREA

SHEET EV05


HBT 3
(WAYPOINT 203)
1m
40m
EASEMENT
POWERLINE
EDGE OF VEGETATION
DETERMINED ON THE
BASIS OF SURVEY
CONDUCTED BY
GEOLYSE
40m
WIDE EASEMENT
LIMIT OF WORKS
CENTERLINE OF TRACK
HBT 3
(WAYPOINT 202)
LEGEND
PROPERTY BOUNDARY
FENCE
40m WIDE EASEMENT
VEGETATION AREA

SHEET EV06



LEGEND

- PROPERTY BOUNDARY
- FENCE
- 40m WIDE EASEMENT
- VEGETATION AREA

Vegetation clearing guidelines, including a protocol for hollow-bearing tree removal, are provided below. Whilst removal of HBT is not anticipated, a procedure is included in the event that a HBT not recorded during the environmental assessment process is found, and does need to be removed.

These procedures are also included to guide any pruning of the HBT.

Threatened Species

One nest site and a single family group of Grey Crowned Babblers have been recorded in the vicinity of the transmission line easement. The location of this nest site in relation to the transmission line easement is shown in figure 4.7 above, as extracted from the NGH Environmental EIS.

This nest site would not be impacted by the transmission line.

No EECs exist on, or adjacent to, the site.

7.3.6 Procedures

This section identifies methods to be adopted prior to, during and post construction to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the development.

Avoidance

- The extent of vegetation to be removed will be clearly marked by the Project Ecologist;
- Where possible, excavations and vehicle/machinery movements will occur outside the canopy drip line of mature trees; and
- Trees will be felled into the zone of disturbance to avoid damaging adjacent vegetation.

Hollow Bearing Tree (HBT) Removal Protocol (only if required)

A further review of the placement of the easement and the extent of clearing required in relation to the transmission line confirms that no HBTs are likely to require removal. Should it subsequently transpire that HBT removal is required, the following steps would apply:

- HBT removal will be conducted between January to March to avoid the breeding seasons of bats, birds and hollow-bearing dependant fauna;
- All non-hollow bearing vegetation will be removed prior to the removal of HBT that are to be removed;
- Pre-clearance surveys will be conducted by the Project Ecologist prior to felling HBTs. These surveys will include checking for animals in the zone of disturbance before clearing;
- HBTs will be left standing for at least one night after other clearing to allow any fauna the opportunity to remove themselves after site disturbance;
- Before felling of a HBT:
  - tap along the trunk to scare animals from the hollows
  - repeat several times
  - the aim of this is to ‘substantially’ shake the tree;
- For medium-large-HBTs which may contain arboreal mammals, section removal will be used with a suitably qualified ecologist/wildlife carer present. This person would ensure that any fauna found is safely located to nearby habitat;

- When using sectional removal, the non-hollow-bearing branches should be removed before the hollow-bearing branches;
- After felling, HBTs would be re-checked by the Project Ecologist to ensure no animals have become trapped or injured during clearing operations; and
- Hollows from felled HBTs will be salvaged and placed in trees within the north-south oriented strip of native vegetation that will run through the centre of the solar plant site (identified as Area 2 in the Figure above).

For each hollow salvaged, a nest box would also be installed in Area 2 to offset the loss of habitat.

Coarse Woody Debris (CWD)

- CWD, including logs, will be relocated into Area 2 to provide foraging habitat for species such as Grey-crowned Babblers and other ground dwelling fauna;
- CWD would be scattered evenly across Area 2, and not be piled or windrowed.

Grey Crowned Babbler

- The previously recorded presence of one nest site and a single family group of Grey-crowned Babblers in the vicinity of the transmission line easement shows that Grey-crowned Babblers will make nests in this area and it is possible that new nests may have been constructed since surveys were conducted.

  Accordingly the Project Ecologist will conduct pre-clearance surveys for Grey-crowned Babbler nests in the vicinity of the transmission line easement and verify that any nests found are inactive.

  This could be done at the same time as the hollow-bearing tree survey.

  The intent of Mitigation Measure 5 would be followed, notwithstanding this measure specifically relates to an adjacent area of vegetation.

  The intent of Mitigation Measure 5 is that removal of vegetation must be conducted outside of the breeding season of the Grey-crowned Babbler (June to February) unless the nests have been confirmed to be inactive; and
- Impacts on any Grey-crowned Babbler nests found will be avoided wherever possible.

General Induction Document

- Drivers accessing the site will be provided with induction training on the need to restrict vehicle movements to the access track and to limit speeds to minimise the potential for fauna collision.

Handling of Fauna

- The handling and relocation of all native fauna will be undertaken by an ecologist/wildlife carer who is suitably qualified and licensed, and in accordance with the procedures detailed below:

  <u>Native Fauna Handling and Rescue Protocol</u>

  Measures will be implemented to prevent animals entering active construction areas, however there remains a possibility that some animals will still manage to enter an active construction area. These animals could be found in the construction area by the construction team or by the ecologist/wildlife carer during daily trench searches or other duties.

Pre-Clearance Surveys

An ecologist/wildlife carer will search fauna habitats during pre-clearance surveys. All fauna habitat identified would be searched for resident fauna. If individuals are found they will be relocated to adjacent habitat along with their habitat i.e. logs, if possible. Arboreal mammals will be relocated to areas containing hollow-bearing trees, reptiles inhabiting fallen logs will be relocated along with the logs, any burrowing fauna will be relocated and their burrows filled in to prevent them returning to the construction area.

General Capture and Release Methods

The ecologist/wildlife carer will be present at all times during the clearance of native vegetation and/or fauna habitats. Animals that require handling will not be approached or handled until the ecologist/wildlife carer is present, unless in an emergency (e.g. when ecologist/wildlife carer is not on-site and where the failure to immediately intervene would place the animal at significant risk). In such an emergency, the Site Environmental Advisor may obtain over the phone instructions from the ecologist/wildlife carer to ameliorate the situation.

All native animals encountered would be treated humanely, ethically, and in accordance with relevant codes under the NSW Prevention of Cruelty to Animals Act 1979, including:

- Australian code of practice for the care of animals for scientific purposes (NHMRC 2004); and
- Animal ethics considerations and protocols outlined in this FFMP.

If an animal is considered at risk of injury or undue stress by the ecologist/wildlife carer, it will be encouraged to vacate the area via knocking, banging or gently shaking the area where the animal is sheltering, and the animal directed into secure adjoining habitat. Where deemed necessary by the ecologist/wildlife carer, the animal may be required to be captured and released. Capture and release operations will proceed via the following protocols:

- All construction activities that are considered by the ecologist/wildlife carer to be likely to increase the risk of injury, mortality or stress to the animal will be halted until the animal has been removed. Construction activities that do not contribute to the risk of injury, mortality or stress to the animal can continue (as determined by the ecologist/wildlife carer);
- Only the ecologist/wildlife carer (possessing appropriate licences and permits) is authorised to handle animals; and
- Animals will be captured by the ecologist/wildlife carer using a safe and ethical technique, as is appropriate for the particular species. Animals that are unable to depart of their own accord will be captured and held in a receptacle appropriate for that species until release. All captive-held animals will be provided with food, water and warmth as is appropriate for the species. Each receptacle will only hold one animal at a time and will be cleaned and disinfected between uses to avoid the spread of disease.

Appropriate Containers for Temporarily Holding Fauna

Animals that are unable to depart from the construction area of their own accord will be captured and held in an appropriate receptacle until their release. Appropriate containers for temporarily holding various types of animals are:

- Small calico bag (~20cm x 30cm with cord to secure the opening, turned inside out so that seams are on the outside of the bag): small lizards, dragons, micro-chiropteran bats. Bag then slung from beam in a holding box until the time of release;

- Large calico bag or pillow slip (~ 60cm x 90cm with cord to secure the opening, turned inside out so that seams are on the outside of the bag): snakes, medium-sized arboreal mammals. Bag then stored in a cardboard box with padding if required for transport;
- Cage trap (~30cm x 30cm x 60cm): medium sized arboreal and ground-dwelling mammals. Trap to be covered with bag to reduce stress;
- Elliot trap: small mammals (e.g. Antechinus) and reptiles (e.g. larger lizards); and
- Small box/open container with appropriate material for nestlings.

Management of Captured Native Animals - Uninjured

The following methods will be followed for the release of uninjured native fauna:

- Uninjured captured individuals will be immediately released at the nearest suitable habitat at a suitable distance away from the construction area;
- 'Suitable locations' will include habitats that are considered appropriate for the species, as determined by the ecologist/wildlife carer (e.g. sufficient protective cover, habitat features likely to support adequate food and water);
- If the ecologist/wildlife carer is not trained to handle snakes (or a particular snake species), then either another Specialist who is trained and experienced at handling snakes will be brought to the site, or a licensed snake handler will be engaged; and
- For particular species (e.g, nocturnal species), the ecologist/wildlife carer may also determine that it is beneficial to hold the animal/s safely in an appropriate receptacle until (or after) sunset to reduce risks to the animal such as disorientation or attack from predators. The receptacle will be kept in a shaded or otherwise suitable location during the day so that the temperatures experienced by the animals are well within its normal range. At all times, the receptacle will be kept in a secure location, under the supervision of the ecologist/wildlife carer.

Management of Captured Native Animals - Injured

The following methods will be followed for the management of injured native fauna:

- If an injured animal is found then the ecologist/wildlife carer will immediately take this animal to a nearby veterinarian for assessment;
- For animals whose injuries can be repaired and that stand a good chance of a successful return to the wild (as determined by the veterinarian), they will be placed into the care of a local and 'accredited party' if they are experienced in the care of that particular animal species. This may include WIRES carers;
- For particular species of injured animals where the local accredited party is not qualified in their care and recovery, alternative accredited party(s) will be arranged from a wider area;
- If there are animals for which no suitable accredited parties can be found, advice will be sought from OEH will be sought on an appropriate solution;
- When injured animals have recovered sufficiently, they will be released safely at the point of capture by the ecologist/wildlife carer in suitable habitat; and
- Animals whose injuries have a poor chance of repair or for which a successful return to the wild is considered unlikely (as determined by the veterinarian) will be euthanised humanely by the veterinarian.

Management of Captured Native Fauna – Deceased Animals

The ecologist/wildlife carer will offer deceased animals to the Australian Museum. If the Museum rejects some or all of the specimens, then the specimens will be offered to OEH.

If both parties reject the specimens, then the specimens will be disposed of thoughtfully and hygienically- either buried or securely wrapped and disposed of in the waste collection.

Reporting and Documentation

Records of all animals that are handled, or otherwise managed, will be maintained on a project register or database (including both dead and living individuals). Data to be recorded includes:

- Date and time of the sighting and details of the observer;
- Location of the sighting (including GPS coordinates);
- Species name;
- Number of individuals recorded;
- Condition of the animal (living/dead/injured/sick);
- Vegetation type in which the animal was recorded;
- Biological information (where possible) including the age, sex, breeding condition and size;
- Management action undertaken (e.g. captured, handled, taken to vet); and
- Results of any management actions (e.g. released, euthanised, placed with carer).

Records of all sightings will be supplied to OEH quarterly for inclusion on the NSW Wildlife Atlas database. Records of all handled, dead or injured animals will also be submitted to OEH and the Animal Welfare Branch of DPI NSW at the completion of the construction phase.

Records of Approved Clearing Methods

- The Site Environmental Adviser will oversee clearing, HBT removal, hollow relocation, nest box establishment and CWD placement in accordance with the above procedures.

Habitat Relocation

The EIS identified, in addition to the salvage and either pole or tree mounting of hollows from felled hollow bearing trees, supplementary nest boxes to be installed. However, given that no HBT's are now intended to be removed it is likely that nest boxes would not be required. In the event that nest boxes are idnentified by the Project Ecologlist as being required, the following details would apply.

- It is noted that OEH does not generally support use of nest boxes as a mitigation measure as:

  1) These are often used by pests such as honeybees and starlings that may prevent the occupancy of these artificial structures by target species.

  2) Different species have very different requirements and hence multiple sizes and designs may be needed.

  3) nest boxes do not last long and hence a program of maintenance and replacement is required which is costly.

  OEH has, in this instance, accepted the decision to use artificial nest boxes in conjunction with salvaged tree hollows.

  This acceptance is conditional on monitoring of artificial nest boxes to provide the following information:

  - The size and design of each nest box.
  - What species is using each nest box.

- Each nest box installed will be of a different design and size;
- Nest boxes and salvaged hollows remounted during the construction phase would be inspected on a monthly basis to check the integrity of the structures and remedy them if required, as well as record what species are utilising each; and
- If the nest boxes are found to be inhabited by introduced species such as honeybees or Starlings they will be removed.

Monitoring / Maintenance

CPP will retain responsibility for the initial establishment and monitoring of ground cover until such time as practical completion of the CPP element of the works. Upon practical completion, AGL will assume responsibility for monitoring and ongoing maintenance.

7.3.7 Records:

- Records of monthly inspections are maintained on **Form-F01**.
- Records of animal handling on **Form-F02**.

FORM-F01: Nest Box Monitoring Record

Date	Any evidence of bird strike on perimeter fence?		If yes, what location and species?	All nest boxes in place and secure? Are introduced species present?		Actions
	Yes	No		Yes	No	

To be completed monthly.

Photocopy form as required.

FORM – F02: ANIMAL HANDLING RECORD

No:	**Time:**
Date:	**Location:**

GPS coordinates:

Species name and number of individuals:

Condition of the animal: Living: ☐ Dead: ☐ Injured: ☐ Sick: ☐ Other: ☐

Other:

Vegetation type in which the animal was recorded:

Biological information (where possible) including age, sex, breeding condition and size:

Management action: Captured: ☐ Handled: ☐ Taken to vet: ☐ Other: ☐

Other or comment:

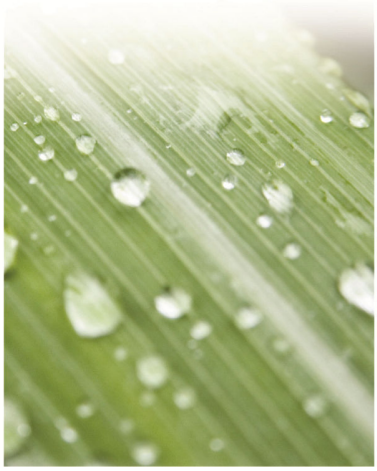
Result of management action: Released: ☐ Euthanised: ☐ Placed with carer: ☐ Other: ☐

Other or comment:

Recorded by:

Name: **Signature:**

ngh environmental



18 October 2013

Doug Landfear
Manager Solar Development
AGL Energy Limited
Locked Bag 1837
St Leonards NSW 2065
dlandfear@agl.com.au

bega
unit 1, 216 carp st
(po box 470)
bega nsw 2550
t 61 2 6492 8333

bathurst
room 15, 341 havanah st
po box 434
bathurst nsw 2795
t 0488 820 748

sydney
unit 18, level 3
21 mary st
surry hills nsw 2010
t 61 2 8202 8333

wagga wagga
suite 1, 39 fitzmaurice st
(po box 5464)
wagga wagga nsw 2650
t 61 2 6971 9696
f 61 2 6971 9693

canberra
unit 17, 27 yallourn st
(po box 62)
fyshwick act 2609
t 61 2 6280 5053
f 61 2 6280 9387

dunsborough
(po box 1037)
dunsborough wa 6281
t 61 8 9759 1985

ngh@nghenvironmental.com.au
www.nghenvironmental.com.au

Dear Doug,

RE – Nyngan solar plant overhead transmission line targeted flora surveys (our ref. 5317)

Within the Submissions Report for the Nyngan Solar Plant (**ngh**environmental June 2013), AGL Limited committed to conducting further targeted threatened flora survey within the proposed overhead transmission line easement south of the Barrier Highway:

1. *A supplementary survey during spring (early October) prior to the finalisation of the transmission line design would be conducted to confirm if threatened flora species including the Red-darling Pea and Pine Donkey Orchid inhabit the higher quality woodland vegetation south of the Barrier Highway. If these species are identified in areas proposed for impact, transmission infrastructure would be microsited with input from an ecologist to ensure a significant impact is avoided. If unavoidable, all areas of suitable habitat within the easement would be included as additional permanent impact areas and would be added to the total area required to be offset.*

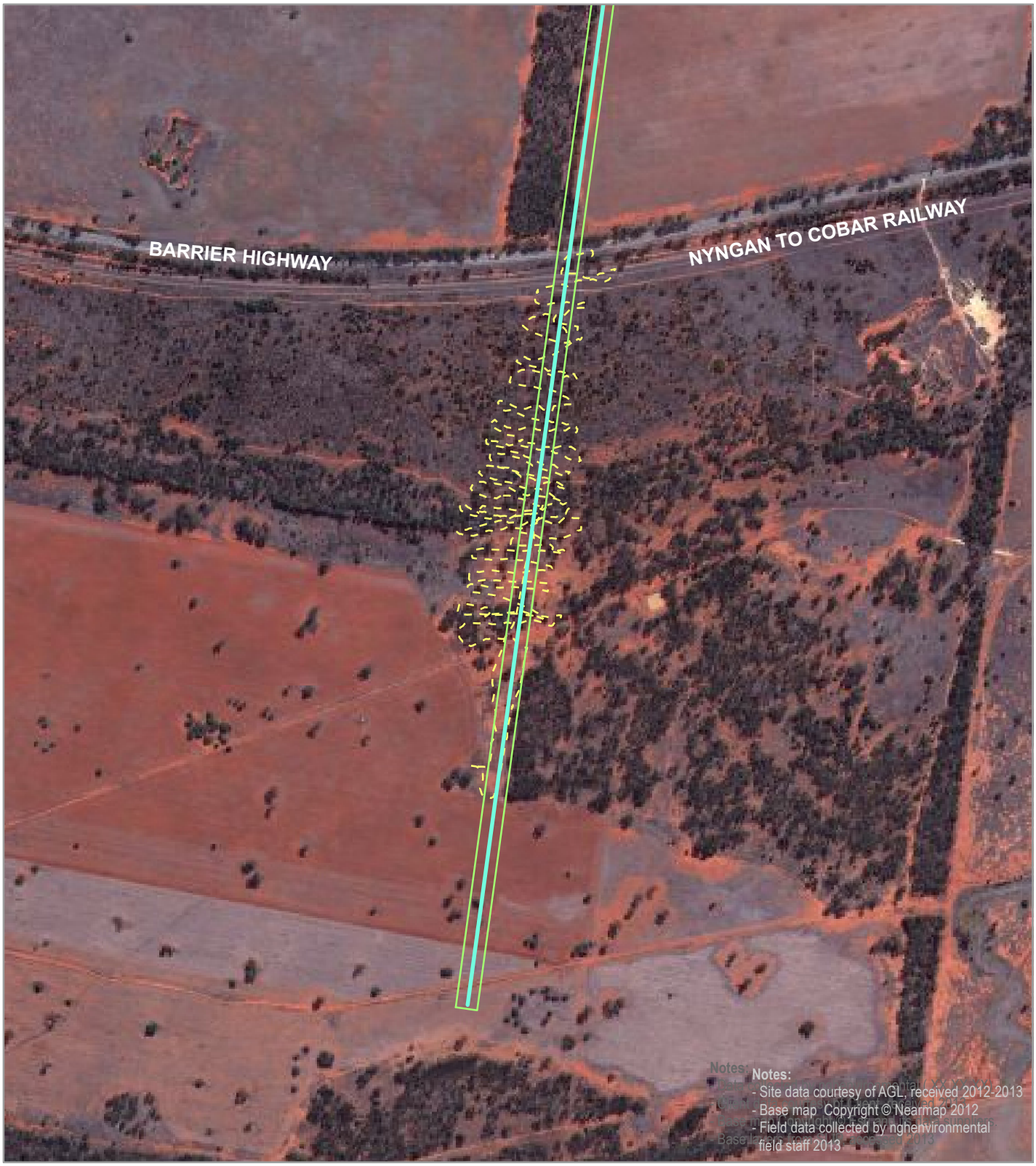
The supplementary survey was carried out on the 8 October 2013 by an **ngh**environmental Senior Ecologist. A survey of all suitable habitat for the Red-darling Pea and Pine Donkey Orchid within woodland areas within and immediately adjacent to the proposed 40 metre transmission line easement was conducted. East-west transects spaced approximately 5 – 20 metres apart (depending on visibility) were walked slowly on foot as shown on the attached map. A total of 3.25 hours was spent on the survey. As a precautionary measure, transects were also conducted within the north-south strip of good condition vegetation within the development site (0.5 person hours).

Neither the Red-darling Pea nor the Pine Donkey Orchid was detected within the survey area. Impacts to these species from the construction of the transmission line and establishment of the easement are therefore considered highly unlikely. No additional management or offsetting for these species is considered to be required.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Yours sincerely,

Dave Maynard
Senior Ecologist
Ph 02 6492 8311
nghenvironmental



Overhead transmission line targeted flora survey October 2013

Nyngan Solar Plant

- Proposed transmission line route
- Transmission line 40m easement
- Targeted search transect

0 100 200 400 Meters

A4 @ 1:10000
Ref: 5317 - 2
Author:

ngh environmental

www.nghenvironmental.com.au

7.3.8 Fauna Impacts

Development consent condition B17 of the Project Approval states:
The Applicant shall design, construct and operate any overhead transmission line connection to the electricity grid with consideration to reasonable and feasible mitigation measures that can be employed to minimise the risk of bird and bat strike into electricity wires.

CPP have designed a standard double circuit overhead line with twin earthwire. Bird strict mitigation is generally installed in instances where the line crosses the flight path of migratory birds. Bird injuries and mortalities may occur as a result of collisions with transmission line conductors and occasionally through electrocution (Henderson et al 1996). Waterbirds are particularly susceptible to collision with transmission lines (Bevanger 1998). The closest waterways are located approximately 4 km to the south-west, and 10km to the east. However, there are no wetlands in the study area and from an assessment of the larger area, it is unlikely that the transmission line is located on an important migratory route. As such, the transmission line is considered to only marginally increase the risk of bird collisions. Notwithstanding, CPP propose to provide flight diverters and insulation on conductors to reduce the likelihood of collision and electrocution risks.

7.3.9 Responsibilities

Project Manager

- Advising the AGL Project Manager of the actual areas impacted by construction to inform the *Biodiversity Offset Plan*.

Site Manager

- Completion of CPP's General Induction Document;
- Ensuring all clearing works are conducted in accordance with the above management procedures;
- Ensure HBT removal is conducted between January to March; and
- Control and monitoring of site disturbance extents.

WHSE & QA Manager

- Completion of CPP's General Induction Document.

Project Ecologist

- Oversee clearing, HBT removal, hollow relocation, nest box establishment and CWD placement in accordance with the above procedures;
- Monthly monitoring of next boxes (only if nay are required to be installed, which is not anticipated);
- Provide input relating to ecological obligations for CPP's General Induction Document;
- Conduct pre-clearance surveys prior to felling HBTs and be present on-site during HBT felling;
- Undertake any and all handling and relocation of native fauna;
- After felling, re-check HBTs to ensure no animals have become trapped or injured during clearing operations;
- Specifying the location for placement of salvaged hollows and coarse woody debris within the north-south oriented strip of native vegetation that will run through the centre of the solar plant site;

- Measure and record with GPS the exact areas impacted by construction to ensure that the actual, not estimated area is offset in the Biodiversity Offset Plan; and
- Design and locate nest boxes (if required) and undertake monthly monitoring.

Employees

- Completion of CPP's General Induction Document; and
- Ensuring all clearing works are conducted in accordance with the above management procedures.

Construction Crew and Contractors

- Completion of CPP's General Induction Document; and
- Ensuring all clearing works are conducted in accordance with the above management procedures.

7.4 Waste Management and Minimisation

7.4.1 Overview

It is noted that BSC raised concerns, as cited in the submissions report, about the quantities of waste potential entering the Nyngan Waste Disposal Facility.

7.4.2 Assessment

Conditions B11 to B13 of the Project Approval relate to waste management. These are reproduced as follows:

B11. All waste materials removed from the site shall only be directed to a waste management facility or premises lawfully permitted to accept the material

B12. Waste generated outside of the site shall not be received at the site for storage treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1977, if such a licence is required in relation to that waste.

B13. All liquid and non-liquid waste generated on the site shall be assessed and classified in accordance with Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2009), or any superseding document.

In addition to the above, Mitigation Measures 55 – 57 state:

55. A Waste Management Plan (WMP) would be developed to minimise wastes. It would include but not be limited to:

- *Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy;*
- *Quantification and classification of all waste streams;*
- *Provision for recycling onsite;*
- *Provision of toilet facilities for onsite workers and how sullage would be disposed of (i.e., pump out to local sewage treatment plant); and*
- *Provision of disposal at facilities permitted to accept the waste.*

56. Excess subsoil would be removed from the site and disposed of at an appropriate fill storage site.

57. Excess topsoil would be retained and used in site rehabilitation.

Compliance with the above matters is demonstrated through **Section 7.4** of this CEMP.

To effectively consider waste management and minimisation *FRM-G002 Waste Management and Minimisation Assessment* will be utilised.

This waste management and minimisation assessment will adopt the following principles:

Priority	Strategy	Action
1	Avoidance as top priority	Action to reduce waste generated by industry and government
2	Resource Recovery	Reuse, reprocessing, recycling and energy recovery
3	Disposal as last resort	Environmentally responsible management of disposal

7.4.3 Waste Types

The following waste types and estimated volumes are anticipated to be generated by the development:

Type	Estimated Volume
Mixed Putrescible Waste	6000kg (septic tank)
Dry Recyclables	900kg
Cardboard	600kg
Steel	700kg
Timber / Wood	3800kg
Electrical Wastes	800kg
Equipment Leaks mixed with Soil	50kg
Building Rubble	700kg
Vegetation	3000kg
Other mixed waste	7000kg

7.4.4 Waste Disposal

All of the above waste streams would be disposed of at the Nyngan Waste Disposal Facility. It is understood that capacity is potentially an issue at this facility, and in the event that insufficient capacity is available to accept waste, it would be diverted for disposal at a waste facility in the Narromine Shire Council area, such as Trangie or Narromine.

It is also understood that BSC currently operate a kerbside recycling program that collects and transfers recyclable goods to Gilgandra for sorting. A transfer cage is operational at the Nyngan WDF for those recyclable items dropped off at the WDF. Confirmation would be sought with BSC whether CPP could make use of this transfer service, or would make separate provision to transfer recyclables to either Gilgandra or one of the Narromine waste facilities.

7.4.5 Waste Tracking

All wastes from this project will be tracked using *FRM-C040 Waste Disposal Register*.

This register will identify the following as a minimum;

- Date and time that loads departed site;
- Who inspected the load and type of waste;
- Vehicle rego and load quantity;
- Disposal point;
- Disposal Certs; and
- Quantity of material recycled or reused.

7.4.6 Contaminated Materials and Wastes

FRM-G002 Waste Management and Minimisation Assessment will also determine the requirements for contaminated materials and wastes.

7.4.7 Sullage

Chemical toilets would be provided within the temporary construction compound, and as such there is no need to provide for removal of sullage.

7.4.8 Responsibilities

At the planning stage of this project, the Site Manager is responsible for identifying and planning methods for waste management and minimisation.

7.5 Weed Management

7.5.1 Overview

Mitigation Measure 12 of the EIS states:

A weed management plan would be developed for the site, guided by the measures set out in the Biodiversity Assessment.

The following sections satisfy this requirement.

The EIS prepared by NGH Environmental confirmed the existence of two noxious weeds found on the subject site, being the Bathurst Burr and Hunter Burr. Both species are class 4 noxious weeds.

7.5.2 Assessment

As part of the assessment process client's documentation such as REF, EIA, EIS and other similar documentation will be reviewed.

FRM-G008 Pre-Clearance Survey Assessment will be utilised to document this assessment.

It is proposed that the Project Ecologist would inspect weeds at pre-clearance stage and identify actions to manage existing weed issues on site. Actions may include but are not necessarily limited to herbicide control (focussing on areas that will be disturbed during the development of the temporary construction compound, substation compound and other works that required disturbance to topsoil).

7.5.3 During Construction

The following measures would be applied during construction to prevent the introduction of weeds.

7.5.3.1 Mobile Plant

All mobile plant required during the course of this project will both arrive and leave from site clean and free from mud, weeds etc.

All mobile plant required will be inspected prior to entering and exiting using this project using *FRM-S123 Mobile Plant Inspection Form*. Entering plant that is certified as free of weeds would receive a green sticker to confirm its status.

Visibly dirty vehicles, plant and equipment that need to travel on to the unsealed dirt sections of the site that do not possess a valid Weed Hygiene Declaration will not be permitted to enter the Nyngan solar plant construction site.

The person responsible for the arriving vehicle, plant and/or equipment will be advised of their responsibilities with respect to the spread of weeds and will be asked to remove the item from site until they are can provide a valid Weed Hygiene Declaration for the item.

Plant that is departing and is noted as visibly dirty would be cleaned in accordance with the principles set out in **Section 7.5.3.2**.

7.5.3.2 Plant Cleaning

Visibly dirty plant that is leaving site would be cleaned utilising the following equipment prior to leaving site.

- A shovel to remove large clods of soil before washing down;
- A yard broom to remove loose sediment before washing down;
- A high pressure air spray unit to remove small particles;
- Broom/dust pan for cleaning cabins;

7.5.4 Cleaning Procedure

- Place vehicle/machine in a safe position – stable and immobile;
- Stop engine, apply park brake, chock wheels and lower all implements or secure/chock them if they are required up for cleaning;
- Ensure the area is free of obstructions/objects that may cause injury (power lines etc.);
- Examine the item for cleaning to determine extent of mud, dust and plant material build up;
- Identify any points that require specific attention, e.g. behind guards and protective plates, radiators, spare tyres etc.;
- Remove necessary guards/belly plates to access areas for cleaning;
- Clean under guards and underneath machinery/vehicle and then do the cabin, upper body and implements;
- Tool boxes and storage compartments may also require cleaning;
- Move vehicle/machine with caution. Avoid re-contamination, clean remaining mud etc off tyres/tracks;
- Carry out final inspection to ensure all areas have been cleaned;
- Replace guards; and
- When moving machinery, plant or vehicles out of cleaning area, move directly toward and across entry grid to the site to ensure the vehicle remains decontaminated.

7.5.5 General Procedures

The following general notes and maintenance requirements will be implemented by the Site Manager;

- If mobile plant is particularly muddy (e.g. during periods of high rainfall) then the mud will also be scraped from the machinery, to ensure all soil and vegetable matter is removed;
- All imported fill will be certified Virgin Excavated Natural Material; and
- Imported blue gravel will be free from weeds and other organic matter that may be a source of weed propagation.

7.5.6 Responsibilities

The Project and Site Managers have responsibility to ensure that the above measures are disseminated to all employees and contractors via the General Induction.

Employees and contractors to follow the above steps.

7.6 Air Quality Management

7.6.1 Background

The EIS prepared in relation to the project included an assessment of anticipated air quality impacts in the context of the identified air environment. Likely impacts to air quality are identified as:

- dust caused by soil disturbance (eg, from excavation or vehicle traffic); and
- emissions from vehicles and machinery.

The EIS notes that air quality in Nyngan is generally good and is typical of that found in the rural setting across NSW. The area is characterised by low population and distance from industrial pollution sources. The two major industries in the locality that contribute to air quality pollution are the Hermidale and Girilambone Mines, located a minimum of 30 kilometres from the project site. The EIS notes that no significant impacts associated with the solar plant or transmission line are anticipated.

7.6.2 Assessment

FRM-S141 Environmental and Health Surveillance Form will be used to document this assessment.

7.6.3 Air Quality and Mobile Plant

Mobile plant will be inspected by the Site Manager using *FRM-S123 Mobile Plant Inspection Form*. Mobile plant will then be registered in *FRM-S124 Mobile Plant Register*. At this stage the Site Manager will determine if the mobile plant is fit for purpose.

The Site Manager will request maintenance records (last service record as a minimum). This process will ensure exhaust emissions are minimised.

7.6.4 Air Quality Management Plan

7.6.4.1 Requirement

This Air Quality Management Plan has been prepared to meet applicable requirements of:

- Development consent condition B6;
- Development consent condition C2(n);
- Mitigation measure 42; and
- Mitigation measure 63.

Condition B6 states:

The Applicant shall construct and operate the development in a manner that minimises dust generation from the site, including wind-blown and traffic-generated dust as far as practicable. All development related activities on the site shall be undertaken with the objective of preventing visible emissions of dust form the site. Should visible dust emissions attributable to the development occur during construction and operation, the Applicant shall identify and implement all practicable dust mitigation measures, including cessation of the relevant works during construction, planting ground covers, using dust suppressants as appropriate, such that emissions of visible dust cease.

Condition C2(n) states:

The CEMP must include measures to monitor and manage dust emissions including dust generated by traffic on unsealed public roads and unsealed internal access tracks.

Mitigation Measure 42 states:

Air quality impacts would be addressed via the development of:

- *Protocols to guide vehicle and construction equipment use, to minimise emissions; and*
- *Protocols to minimise and treat dust (water carts or similar).*

Mitigation Measure 63 states:

Dust suppression activities would be undertaken during construction and commissioning.

7.6.4.2 Objectives

The objectives of this Air Quality Management Plan are to:

- Minimise and prevent negative impacts from construction activities on air quality.
- Ensure construction related dust and emissions do not cause harm or environmental nuisance.

7.6.4.3 Actions:

Measures to control dust generation.

- All site personnel will be advised via CPP's General Induction Document of the requirement to minimise dust generation including an enforced speed limit on unsealed roads;
- Monitor weather conditions on a daily basis;
- Minimise dust generating activities during periods of high wind and dry conditions;
- In dry windy conditions, working areas, spoils and stockpiles will be kept sufficiently damp to prevent dust generation;
- Water carts will be used as necessary;
- Limit areas disturbed by construction to the minimum area necessary for the safe conduct of the work involved;
- Undertake progressive rehabilitation in accordance with the Revegetation and Rehabilitation Program;
- A speed limit of 40 km/hour will apply to all unsealed roads and construction tracks. A speed limit of 15 km/hour will apply around construction site offices and laydown areas;
- Traffic movement will be restricted, as far as possible, to formed access roads and construction tracks. These will be watered as required to control dust generation;
- Use load covers where available and maintain a minimum 300mm freeboard on all loads; and
- Ensure loaded vehicles leaving the site are cleaned of dirt, sand and other material before leaving the site.

Measures to control air emissions.

- All site personnel will be advised via CPP's General Induction Document of the requirement to minimise air emissions;
- Construction equipment will be properly maintained to ensure exhaust emissions comply with Clean Air regulations;
- Vehicles and construction equipment shall be switched off when not in use (where practicable) to avoid unnecessary emissions;

- Cleared vegetation, building/demolition materials and other combustible waste will not be burnt on site; and
- Prompt action will be taken to extinguish fires in accordance with the Bush Fire Management Plan.

Actions in the event of excessive dust generation.

The following actions shall be undertaken in the event of excessive visible dust generation or in response to a dust complaint from an external party:

- The work/activity causing the dust generation will be identified and will immediately cease;
- An Incident Report shall be prepared;
- Where practicable, the area will be watered using the on-site water tanker;
- Work shall not recommence until the area has been sufficiently treated to avoid excessive dust generation. The area will be visually monitored following recommencement of work to ensure the dust control measure is effective; and
- If the area cannot be watered, the activity will not recommence until conditions are conducive to minimal dust generation or work practices modified as required.

Inspections and Monitoring

- The works and construction area will be monitored daily by the Construction Manager and weekly by the Site Environmental Advisor to identify non-compliance with the mitigation measures in the CEMP;
- Records of weekly inspection shall be maintained; and
- Dust and air quality will be monitored visually to ensure wind borne particulates do not become a nuisance.

7.6.5 Responsibilities

The Project and/or Site Manager will determine air quality requirements at the commencement of this project. The Site Manager would be responsible for the implementation of the measures outlined in the preceding sections.

7.7 Dewatering

7.7.1 Assessment

This assessment will be documented using *FRM-G012 Dewatering Assessment*.

This assessment will identify dewatering methods to ensure the environment is not harmed.

Dewatering areas will be identified in *FRM-G001 Erosion and Sediment Control Plan*

7.7.2 Water Quality

FRM-G012 Dewatering Assessment will be utilised to determine if water treatment during the dewatering process is required.

7.7.3 Dewatering Requirements

All dewatering areas will be assessed using *FRM-G012 Dewatering Assessment*. If additional dewatering areas are identified during construction, FRM-G012 will be revisited. Identified dewatering areas will be recorded in *FRM-G001 Erosion and Sediment Control Plan*.

Discharge of water to the environment should not cause any of the following environmental impacts;

- Erosion at the discharge location or in receiving environments;
- Erosion of structures or services;
- Harm to native vegetation; and
- Sediment build-up in drains, waterways or wetlands.

The following should also be considered;

- Energy dissipation must be provided at the surface of all dewatering discharge outlets e.g. concrete aprons, geofabric, shade cloth, gabions, turkey nests; and
- The preference discharge location should be given to locations with established stable drainage.

7.7.4 Responsibilities

During construction there may be a requirement to dewater stormwater and infiltrated groundwater from excavations and low lying areas of the project.

To effectively determine dewatering requirements a dewatering assessment will be conducted by the Site Manager at the commencement of the project.

7.8 Spill Management

7.8.1 Assessment

Spill management requirements for this project will be assessed utilising *FRM-G006 Spill Response Equipment Selection Assessment*.

Spill incidents are likely to be related to occasional on site refuelling of plant from small mobile tankers.

7.8.2 Spill Response Equipment Inspection

Spill Kits will be formally examined at the commencement of a project and on a 6 monthly basis thereafter by the Site Manager or their delegate using *FRM-G003 Spill Response Kit Checklist*.

The location of spill kits on this project will be identified in *FRM-G001 Erosion and Sediment Control Plan*.

7.8.3 Emergency Spill Response

Following the assessment outlined above the Site Manager will prepare spill response procedures and document in *FRM-G004 Emergency Spill Response Plan*.

See emergency response procedure for further details on trials and effectiveness of response plans.

7.8.4 Spill Assessment

As noted in **Section 6.5**, only one hazardous material would be stored on site, SF6 (sulphur hexafluoride) for use in being Oil-Filled HV Trfr Circuit-Breakers, stored in the transformer yard. For the avoidance of doubt, it is not intended that any fuels would be stored on site, however, as noted, some mobile tankers would likely be on site to refuel plant, and there is the potential for spill hazard associated with this.

7.8.5 Spill Management

The above spill risk would be managed using *FRM-G004 Spill Response Plan*.

Spill kits would be provided and maintained for all mobile refuelling plant

In a general sense, the following measures would be employed:

- clear the affected area;
- check for any persons involved;
- if persons involved, administer first aid;
- isolate the spill (if safe to do so) utilising the spill kit provided;
- contact the Project Manager for high risk spills;
- contact the Site Manager for low risk spills;
- gather any information possible, ie identify the material and quantity, gather relevant MSDS and assess any immediate risks.

The primary concern is to protect health and safety no action should be taken during an emergency response that directly or indirectly puts human health and safety at risk.

7.8.6 Responsibilities

It is the responsibility of the Site Manager to oversee the above measures are appropriately applied and recorded throughout the construction period. Any incidents would be reported in accordance with the measures set out in **Section 6.6**.

7.9 Noise Management Plan

7.9.1 Background

The EIS prepared to support the project application incorporated an assessment of noise impacts and also contained a list of relevant mitigation measures to ameliorate any impacts associated with noise. The noise assessment separately assessed noise impacts associated with the development of the substation and transmission line, and the development of the solar farm itself. The works proposed by CPP are limited to the construction of the transmission line and substation, and this is therefore the focus of this CEMP.

The noise assessment noted that there are three nearby potentially sensitive noise receivers located nearby to the construction area. Of these, the closest receiver is located at a distance of 1800 metres.

Potential noise impacts associated with construction of the substation, transmission line and substation are noted to include:

- Noise from construction vehicles and plant;
- Associated construction noise; and
- Increased road traffic noise.

The EIS notes:

Construction of the transmission line and main access road are likely to be shorter in duration than solar plant construction works and impacts are likely to be intermittent as works would be undertaken at different parts of the site for varied periods.

In relation to the above impacts, it is considered that noise associated with construction vehicles and plant and associated construction noise would be the primary forms of noise impact. It is noted that construction vehicles would lead to some increase in traffic flows on the Barrier Highway however this is not considered significant enough to warrant specific mitigations – refer **Section 7.9.1.1**.

Sections 7.9.2onwards of this CEMP set out the means by which noise impacts would be assessed, the relevant project consent conditions and the proposed mitigation measures to limit noise impacts.

7.9.1.1 Road Traffic Noise

To determine the impact of road traffic noise increases, the appropriate policy is the *Road Noise Policy (RNP).* The RNP sets noise criteria for assessing such impacts. The Project is classified under the *RNP* as a project/land use "Existing residences affected by **additional traffic** on existing local roads generated by land use development". The *RNP* states that in all cases, traffic arising from a development should not lead to an increase in existing noise levels of more than 2dBA.

The TMP prepared in respect of CPP operations identifies a construction period of January – July 2014, including enabling works, and totalling 155 construction days (assuming five and half working days per week). During this period peak movements would be limited to 35 vehicles per day and 15 vehicles per hour. Given the very low level of additional traffic associated with the CPP portion of the project, it is not anticipated that traffic noise arising from the development would lead to an increase in existing noise levels of more than 2 dB(A). As such, further consideration of road traffic noise impacts are not considered within this CEMP. It is noted that AGL is to amend the staging report to account for slippages to date in terms of construction commencement.

7.9.2 Assessment

FRM-S141 Environmental and Health Surveillance Form will be used to document this assessment and will determine the following requirements;

- Suitable noise suppression or abatement measures; or
- Noise and vibration monitoring;

7.9.3 Requirements

This Construction Noise Management Plan has been prepared to meet the requirements of:

- Development consent condition C3(d);
- Development consent condition B 22;
- Development consent condition B 23;
- Development consent condition B 24;
- Development consent condition B 25 and
- Mitigation measure 26-36.

Development consent condition C3(d) states:

> *A Construction Noise Management Plan to manage noise impacts during construction and to identify all feasible and reasonable mitigation measures. The Plan shall include, but not necessarily be limited to:*
>
> *(i) details of construction activities and an indicative schedule for construction works;*
>
> *(ii) identification of construction activities that have the potential to generate noise impacts on surrounding land uses, particularly residential areas;*
>
> *(iii) detail the requirements for Noise Impact Statements (NIS) for discrete work areas, including construction site compounds;*
>
> *(iv) detail what reasonable and feasible actions and measures would be implemented to minimise noise impacts;*
>
> *(v) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity, as well as procedures for dealing with and responding to noise complaints;*

(vi) an out-of-hours-work (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined in Condition B22 of this consent, including a risk assessment process under which an Environmental Representative may approve out-of-hour construction activities deemed to be of low environmental risk and refer high risk works for the Director-General's approval. The OOHW protocol shall detail standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, and detail a standard protocol for referring applications to the Director-General; and

(vii) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, the locations where monitoring would take place, how the results of this monitoring would be recorded and reported; and, if any exceedance is detected how any non-compliance would be rectified.

Development consent condition B22 states:

Construction activities associated with the development shall be undertaken during the following standard construction hours:

(a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive;

(b) 8:00 am to 1:00 pm Saturdays; and

(c) at no time on Sundays or public holidays.

Except unless otherwise provided in condition B23.

Development consent condition B23 states:

Construction works outside of the standard construction hours identified in condition B22 may be undertaken in the following circumstances:

(a) construction works that generate noise that is:

(i) no more than 5 dB(A) above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and

(ii) no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or

(b) for the delivery of materials required outside those hours by the NSW Police Force or other authorities for safety reasons; or

(c) where it is required in an emergency to avoid the loss of life, property and/or to prevent environmental harm;

(d) works as approved through the out-of-hours works protocol outlined in the Construction Noise Management Plan required under condition C3(d).

Development consent condition B24 states:

Any activities resulting in impulsive or tonal noise emission (such as rock breaking, rock hammering, pile driving) shall only be undertaken:

(a) between the hours of 8:00 am to 5:00 pm, Mondays to Fridays;

(b) between the hours of 8:00 am to 1:00 pm Saturdays; and

(c) in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.

For the purposes of this condition, 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.

Development consent condition B25 states:

The Applicant shall implement all reasonable and feasible measures to minimise noise generation from the construction of the development consistent with the requirements of the Interim Construction Noise Guideline (DECC, July 2009) including noise generated by heavy vehicle haulage and other construction traffic associated with the development.

7.9.4 Mitigation Measures:

General Induction Document

Employees and contractors will be informed of noise management measures, construction hours and nearest sensitive receptors (Mitigation Measure 26).

Scheduling

- Where necessary, noisy activity would be carried out in the least sensitive time periods: to be determined through community consultation (Mitigation Measure 29).

Community Consultation

Targeted community consultation in the form of written correspondence and direct visits (as necessary) by the Project Manager would be ongoing for residences within close proximity to the works. Advice and visits would be supplied no less than 5-14 days in advance of the works commencing. The information would include details of:

- the proposed works;
- the duration and nature of the works during construction;
- what works are expected to be noisy;
- what is being done to minimise noise;
- when respite periods would occur; and
- regular updates on progress of the works.

Plant and Equipment Maintenance

- Equipment and plant will be operated and maintained in accordance with the manufacturer's instructions including replacement of engine covers, repair of defective silencing equipment, tightening rattling components, repair of leakages in compressed air lines and shutting down equipment when not in use (Mitigation Measure 32).
- Where feasible and reasonable install multi-frequency alarms and smart alarms on vehicles, taking into account the requirements of Work Health and Safety legislation (Mitigation Measures 35).

Avoiding Sensitive Areas

- Avoid the operation of noisy equipment near noise-sensitive areas and where possible, loading and unloading would be conducted away from sensitive areas (Mitigation Measure 33).
- Position plant and equipment on-site in a position that provides the most acoustic shielding from buildings and topography. Plant known to emit noise in one direction will be orientated where practicable to screen the emissions (Mitigation Measure 34).

- Truck drivers will be informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling) (Mitigation Measure 36).

7.9.5 Notification of Residents

Adjacent residents shall be notified of construction activities by the Site Manager prior to commencement using *FRM-G009 Notification of Works*. Initial contact by CPP with landowners has occurred and correspondence confirming this is provided overleaf.

CONSOLIDATED POWER PROJECTS AUSTRALIA PTY LTD
Adelaide | Sydney | **Melbourne**

Melbourne Office: Level 6, 141 Flinders Lane
MELBOURNE VIC 3000
ABN: 18 075 411 219

Telephone: (03) 9289 9800
Facsimile: (03) 9289 9801

Web: www.conpower.com.au
Email: mail@conpower.com.au

Michael Woolley
15 Hastings Parade
Bondi Beach
2026
Sydney
NSW

Friday, 7th February 2014

Nyngan Solar Farm Connection Works – Request for construction works outside of hours specified in Development Consent:

Dear Michael,

According to condition B23 (d) of the Development Consent, CPP would like to place a request for construction work to occur outside of the construction hours which have been specified to AGL.

CPP's intention for the out-of-hours work is to enable the construction work for this development to progress in an efficient manner with low or zero impact to the community and environment, whilst meeting our contractual requirements with our client AGL.

The proposed out-of-hours civil work is to occur on the Nyngan Solar Farm Connection substation bench during the weekend hours of 1pm to 6pm on Saturday's and 7am to 6pm on Sunday's commencing from Saturday, 8th February 2014 until Sunday 2nd March 2014.

Substation Bench and Borrow Pit Preparation:

- Stripping the top soil to 200mm below the ground level, and placing it within our top soil storage area involving an excavator, water truck and side loader;
- Backfilling of borrow pit using aggregate sourced from the First Solar site;
- Backfilling and compaction of the substation bench using a hard aggregate sourced off-site;
- Trenching and backfilling for substation earth grid.

It is our opinion that the proposed out-of-hours work would not affect the landowner and neighbouring landowners. CPP consulted with both stakeholders regarding this construction works

The following landowners have given us verbal consent to proceed with the construction works since the work will pose low risk or low impact to the landowners in question:

- James Dedman @ 14h00, 06/02/2014;
- Will Carter @ 14h15, 06/02/2014.

CPP are also able to issue formal letters to both landowners if AGL deem this is necessary. We are also able to contact landowners on a weekly basis to advise regarding planned weekend work if AGL deem this is necessary.

I hope you find this information in order.

Yours faithfully,

Edwin Munian

Project Manager – Nyngan Solar Farm Connection

7.9.6 Works Outside Standard Construction Hours

Works can be undertaken outside the standard construction hours, contingent on CPP satisfying one of the following criteria.

> *Noise is no more that 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009), and no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers.*
>
> **OR**
>
> *For the delivery of materials required outside those hours by the NSW Police Force or other authorities for safety reasons.*
>
> **OR**
>
> *Where it is required in an emergency to avoid the loss of life, property and/or to prevent environmental harm.*
>
> **OR**
>
> *Works as approved through the out-of-hours works protocol.*

Subject to operation in accordance with the Out of House Works Protocol in **Section 7.9.7**, CPP propose to undertake works 7 days per week, between the hours of 7am and 6pm. In order to ensure that condition B23(a)(i) and (ii) is met, it is proposed that noise monitoring would be undertaken as outlined in **Section 7.9.8**.

7.9.7 Out of Hours Work Protocol (OOHW)

The Environmental Representative may approve out-of-hour construction activities deemed to be of low environmental risk and refer high risk works for the Director-General's approval.

This OOHW protocol details standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, and details a standard protocol for referring applications to the Director-General.

The protocol for identifying low risk out-of-hour works will include CPP providing the Environmental Representative with details of the:

1. location, nature, timing and duration of the out-of-hours works proposed; and
2. clarification of buffer distances to receptors; and
3. a justification for the request;
4. either:
    a. evidence that potentially affected residents to not object to the works; or
    b. a Noise Impact Statement demonstrating that the applicable noise performance criteria can be complied with.

In preparing the information in respect of the above, the Project Manager will be responsible for the carrying out of a risk assessment in accordance with the protocol provided in **Section 7.9.7.1**.

If, after consideration of the above, the Environmental Representative does not agree that works are low risk, CPP will (only with the permission of AGL) formalise a request for a Consent Modification to be lodged with the Department of Planning and Infrastructure.

7.9.7.1 OOHW Risk Assessment

A risk assessment of the proposed out of hours work must be carried out and a record of the assessment kept.

The risk assessment must:

1. Identify all foreseeable hazards arising from the work
2. Assess the risk(s) of each hazard
3. Eliminate or control the hazard/risks to a level that is acceptable (reasonably practicable)

The person carrying out the risk assessment must identify the level of risk for each hazard in the task or process eg negligible, minor, moderate, major, critical – refer **Section 6.13** This rating is used to determine:

- Whether authorization can be granted
- the type of authorisation required
- the level of supervision required
- any additional training or controls
- additional support/communication requirements

The following issues must be considered as part of the risk assessment process for any after-hours work:

- the possible increase in risk because of reduced immediate assistance eg emergency services
- competency and level of experience, skill and training of the individual/s undertaking the work;
- the number of people, and their level of experience, working in the area after-hours (this might vary on a day-to-day basis);
- supervision required for workers to complete the task or process;
- whether the substance, equipment or work is too hazardous or dangerous to be used or done after-hours;
- consequences of unattended experiments or equipment during after- hours work;
- requirement of a “buddy” or backup support/communication or access to a method of communication (landline phone, mobile phone, or duress alarm);
- the journey to and from where the work is being conducted and the mode of transport.
- any pre-existing medical condition of the worker/s
- the level of emergency assistance available after-hours in the event of an incident;

All risk assessments must be documented and include any additional controls and requirements. Risk controls must be reviewed on a regular basis, when new information becomes available, if there is an incident or when something changes in relation to the work.

The decision on the appropriate risk level is to be determined by reference to the matters identified within **Section 6.12**of this CEMP.

Suggested Types of Approval by Risk Level

Out of Hours Risk Level	Suggested Type of Approval Required
Negligible	Approval is not necessary
Minor	Approval is necessary and is to be determined on a case by case basis by the Project Manager
Moderate	Approval is necessary and is to be determined on a case by case basis by the Project Manager with the Project Environmental Representative
Major	Approval is required and is to be determined by the DoPI in co-ordination with the Project Environmental Representative.
Critical	Approval is required but unlikely to be granted

7.9.8 Monitoring Performance

Community consultation and the absence of complaints will be used as the de-fault indicator of the effectiveness of the measures adopted to avoid adverse noise impacts to neighbours. This monitoring would be continual. Given the scale of the project and the distance to potentially affected receivers, this standard of monitoring is considered acceptable.

Any complaint received regarding noise impacts would be investigated and physical noise monitoring would be undertaken with either attended or un-attended loggers. Precisely how the monitoring would be performed, where, for how long, and with what sort of equipment, would be determined on a case by case basis. The justification for the monitoring regime undertaken would be documented, and the results reported to the Environmental Representative.

If works could not be undertaken in compliance with the noise levels specified in the consent conditions, then these works would cease until adequate mitigation strategies are developed.

7.9.9 Corona and Aeolian Noise

Development consent condition B27 states that the applicant shall ensure that the overhead transmission line is designed, constructed and operated to minimise the generation of corona and Aeolian noise as far as reasonable and feasible at nearest sensitive receptors.

7.9.9.1 Corona discharge.

The calculations show a conductor surface voltage gradient of 11.1 kV/cm can be expected and the corona inception voltage gradient is 85 kV/cm. AS7000 section 3.13 “Corona Effects” states the surface voltage gradient on a conductor should be limited to less than 16kV/cm to limit the generation of corona discharge. It is therefore anticipated that corona is not likely to require specific management measures via this CEMP.

7.9.9.2 Aeolian Vibration

The Nitrogen AAAC/1120 conductor is to be installed at 17% CBL on the Nyngan 132 kV line. With reference to AS7000 Table Z1, we are using a Type C clamp category and the terrain on site is Type 1. If we assume no dampers are installed, the recommended tension is 15% CBL (base case) + 2.5% (Clamp Cat.) + 0 (terrain) = 17.5% CBL. This is higher than the tension proposed at Nyngan. Note that dampers are being installed on the Nyngan line and hence Aeolian vibration is mitigated.

7.9.10 Responsibilities

A health and surveillance assessment will be conducted by the Project Manager or Site Manager at the commencement of the project to determine noise and vibration requirements.

The Project Manager would have overarching responsibility for ensuring compliance with the specific provisions of the CEMP, including noise specific noise mitigation measures. The Project Manager would also be responsible for public consultation relating to any noise related matters.

The Site Manager would have responsibility for ensuring day to day compliance with noise mitigation measures as identified within this CEMP including reporting and restorative measures to address any non-compliance.

The ER would have responsibility for monitoring and reporting on condition compliance to the Client and the Director-General.

7.10 Heritage Management

7.10.1 Consultation

An Aboriginal Heritage Management Plan was prepared by New South Wales Archaeology Pty Ltd and a copy of this supplied to the NSW Office of Environment and Heritage for review.

OEH confirmed by email dated 11 September 2013 (refer **Appendix C**) that the AHMP was considered acceptable and accorded with OEH's own findings that the area was considered to have low Aboriginal cultural heritage sensitivity.

The following sections of this report are provided in reference to the AHMP.

7.10.2 Management of Identified Aboriginal Heritage

Three identified Aboriginal objects have been located in the area impacted by the project. One of these objects is located in proximity to the transmission line.

This object (recorded as SU2/L1) is a stone artefact adjacent to the fenceline. The recorded artefact is a good quality milky quartz flake fragment measuring 34 x 30 x 10 mm. Retouch/edge damage extends along 30 mm of one edge.

The *Aboriginal Heritage Management Plan* requires that this object (as with the other two recorded in the area of the solar arrays) be salvaged before impacts, and transferred to a safe place nearby and outside any impact areas.

The identified Aboriginal objects will be salvaged by Tommy Ryan, representing Nyngan Local Aboriginal Land Council and Doug Landfear, AGL, in consultation with Julie Dibden.

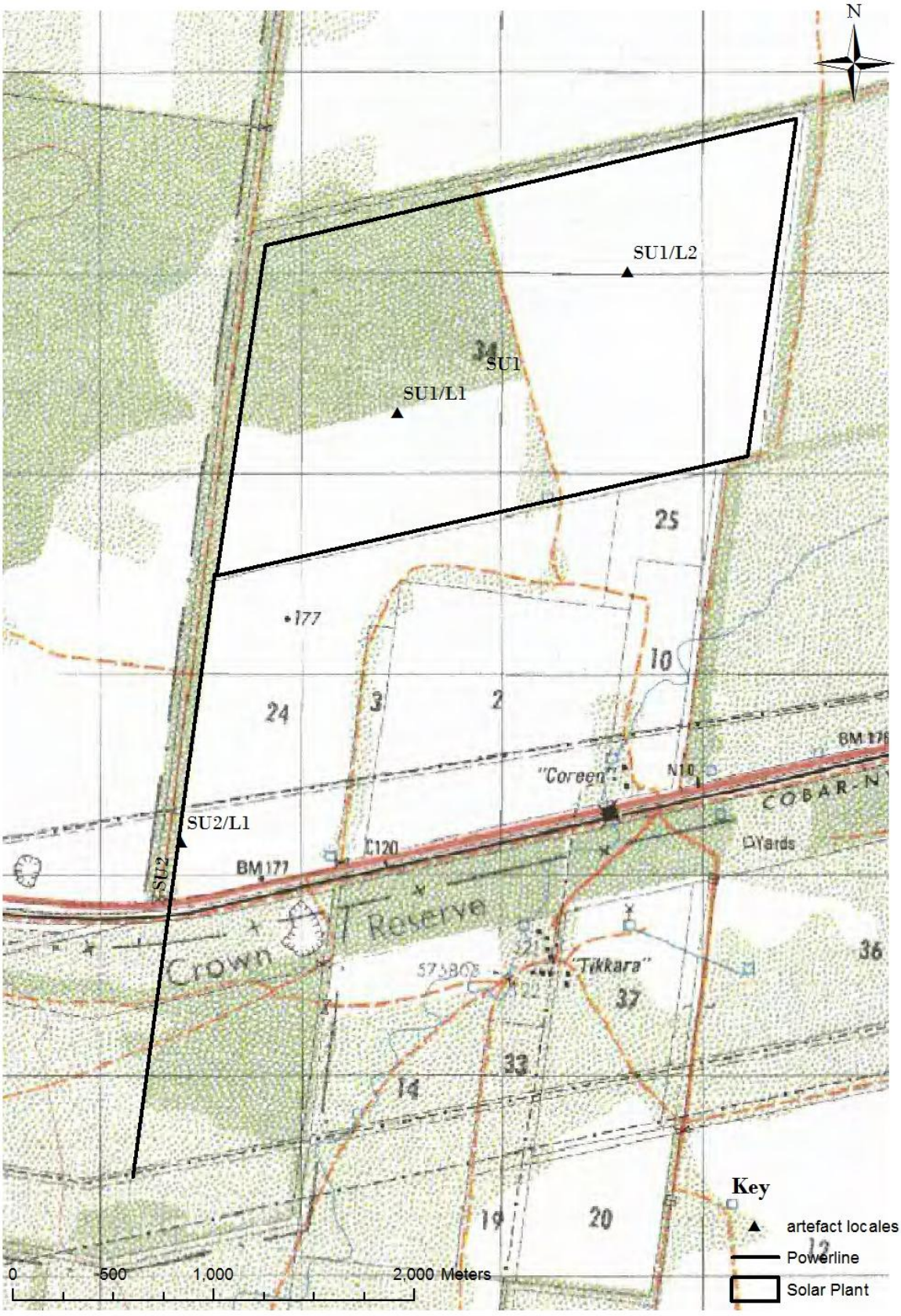


Figure 2 Location of Survey Units and Aboriginal object locales recorded in the proposal area.

If the object is not able to be re-located with reasonable effort, it will not be salvaged and relocated.As stated within Section 5.2 of the Aboriginal Heritage Management Plan, prepared by New South Wales Archaeology Pty Ltd, an Aboriginal Site Impact Recording Form will be completed and submitted to NSW OEH following the salvage of the three Aboriginal objects.

7.10.3 Management of Unidentified Aboriginal Objects and/or Burials

Should any previously unidentified Aboriginal object or site be revealed during construction, then work in the area must cease and the local vicinity of the find should be cordoned off until confirmed by a qualified archaeologist. If the object or site is Aboriginal in origin, a NSW OEH representative and the Registered Aboriginal Parties (RAPs) should be contacted to discuss how best to proceed.

Should suspected ancestral remains be encountered, the following process should be adhered to:

- Do not further disturb or move the remains;
- Immediately cease work in the vicinity and cordon are off;
- Notify the NSW Police;
- Notify the NSW OEH Environment Line on 131 555 as soon as practicable and provide available details of the remains and their locations; and
- Do not recommence work in the area unless authorised in writing by NSW OEH.

FRM-G010 Cultural Heritage Find Record will be used as a record of their discovery.

7.10.4 Aboriginal Heritage Induction

In order for site workers and contractors to be able to identify Aboriginal objects and burials, and to know what processes to follow if required, they would be provided with induction training.

An appropriately qualified person has been engaged to conduct induction training on the following matters:

- The identification of Aboriginal objects and skeletal material;
- Aboriginal cultural awareness;
- The AHMP procedures to be followed during the operational life of the project and in the event of a discovery of an Aboriginal object or burial.

Information will be disseminated to all employees and contractors via the General Induction.

Members of the construction team, including sub-contractors, machine operators and truck drivers, etc should undergo site induction concerning Aboriginal cultural heritage issues, prior to working on the site. This would preferably be undertaken by an individual who has a good working knowledge of Aboriginal sites and of the legislation protecting them. This induction should inform workers/contractors of the location of sites within the Project Area, and of their legislative protection under Section 90 of the NSW National Parks and Wildlife Act 1974. Those workers attending such inductions will sign a register indicating their understanding of the cultural heritage importance and legislative requirements to protect Aboriginal sites. Such inductions assist greatly in avoiding inadvertent impact to Aboriginal sites.

Contractors would be advised that in the event of any identification of any unidentified Aboriginal Objects, the Site Manager should immediately advise AGL. AGL would be responsible for further onward referral, as per **Section 7.10.4**.

7.10.5 Protocol for Continued Aboriginal Community Consultation

For the purpose of further and ongoing consultation, the AHMP suggests that a member of each RAP be appointed to an Aboriginal Working Group.

In the event that any of the following incidents occur, AGL will contact NSW OEH and the RAPs as precondition B32 of the Planning Consent within 24 hours:

- If any inadvertent impacts occur to sites beyond that which is agreed to in the AHMP;
- If any previously unrecorded Aboriginal sites/objects are located in the vicinity; or
- If any areas are to be impacted that have not as yet been surveyed for the presence of Aboriginal sites.

7.10.6 Management of Unidentified Historical Relics

If during the course of construction CPP becomes aware of any unexpected historical relic(s), all work likely to affect the relic(s) will cease immediately and the Heritage Office notified in accordance with the Heritage Act 1977.

Works will not recommence until the CPP receives written authorisation from the Heritage Office.

7.10.7 Responsibilities

The Project and Site Manager will assume responsibility for the implementation of required safeguards and procedures detailed in the approved *Aboriginal Heritage Management Plan* – Nyngan Solar Plant (NSW Archaeology Pty Ltd, 1 November 2013).

These requirements include, and the associated required actions to be followed, are summarised below.

- Management of identified Aboriginal Heritage,
- Management of Unidentified Aboriginal Objects and/or Burials
- Aboriginal Heritage Induction
- Protocol for Continued Aboriginal Community Consultation

7.11 Site Rehabilitation Management

7.11.1 Requirement

Development Consent Condition B21 which states;

The Applicant shall implement a revegetation and rehabilitation program for all areas of the development footprint which are disturbed during the construction of the development but which are not required for the ongoing operation of the development including temporary construction facility sites and sections of constructions access roads. The Applicant shall ensure that all revegetation measures are implemented progressively where possible and in all cases within six months of the cessation of construction activities at the relevant area. Unless otherwise agreed to by the Director-General, the Applicant shall monitor and maintain the health of all revegetated areas until such time that the plantings have been verified by an independent and suitably qualified expert (whose appointment has been agreed to by the Director-General) as being well established, in good health and self-sustaining.

In addition to the above, MM 39 states:

All areas disturbed by the construction of the proposed transmission line and solar plant would be allowed to naturally regenerate and be monitored to ensure that regeneration has occurred. Where natural regeneration is unsuccessful, revegetation would be undertaken.

7.11.2 Background

A FFFMP has been prepared and is contained within **Section 7.3** of this CEMP.

The EIS prepared in relation to the project contained a biodiversity assessment setting out the existing environment and the anticipated extent of impacts.

The transmission line, which forms by far the largest portion of CPP's element of the works, is identified as affecting 14 hectares of land. Affected vegetation consists of approximately 30% of native Poplar Box Woodland vegetation. The extent of clearing associated with the transmission line is explained in **Section 7.3**.

As per MM39, disturbed areas would first be allowed to naturally regenerate. Monitoring would take place to ensure that this has occurred. Where natural regeneration does not occur, further rehabilitation would be undertaken progressively, to ensure that soils are stabilised as soon as practical. This would minimise weed infestation, sedimentation and erosion, which degrade habitat.

The area as identified in **Figure 2** would be the subject of on-site works by CPP. The substation would not require rehabilitation due to its ongoing use. The area of the temporary construction compound would be rehabilitated post construction works via the measures set out in **Section 7.11.3.1**.

Project Manager will be responsible for all activities to ensure successful rehabilitation.

7.11.3 Actions

7.11.3.1 Rehabilitation Measures

All areas of the development footprint which are disturbed during construction but which are not required for the ongoing operation will be rehabilitated, including the areas in the south of the easement that have previously been cropped

The rehabilitation will include scarifying these areas to prepare a suitable soil profile for subsequent sowing with an appropriate ground cover mix.

Discussions with a qualified ecologist with experience in the Nyngan region has resulted in a recommended mix of seeds to be used in rehabilitation works. The ecologist confirms that the mix should include one or more of the following forbs (10 percent) and three or more of the following native grasses. The red highlighted grasses are favoured, but the others would also be suitable.

FORBS
- *Medicago laciniata* Cut-leaf Medic
- *Medicago truncatula* Barrel Medic
- *Medicago polymorpha* Burr Medic

GRASSES
- *Austrodanthonia setacea* Small-flowered Wallaby Grass
- *Bothriochloa macra* Red-stem Grass
- *Chloris truncata* Windmill Grass
- *Chloris ventricosa* Tall Windmill Grass
- *Dichanthium sericeum* Queensland Bluegrass
- *Enteropogon acicularis* Curly Windmill Grass
- *Panicum laevinode* Pepper Grass
- *Paspalidium constrictum* Knotty Butt Grass

The grasses are all species recorded from the site and able to cope with the soils and environment. For the avoidance of doubt, no exotic species are proposed to be used in rehabilitation.

Planting rates should be 1 to 2 kg of seed per hectare.

Either a commercial contractor would be used for sowing, although in small areas hand operated seeders would be adequate.

Where and when practicable, these revegetation measures will implemented progressively. All revegetation works will, however, be completed within six months of the cessation of construction activities.

As the groundcover plantings are undertaken, the date of sowing and a record of the seed mix applied will be recorded. A photographic log will also be recorded at this time. The locations of all rehabilitated areas will also be recorded on a site plan.

7.11.3.2 Monitoring

CPP will retain responsibilities for monitoring and maintenance of all revegetation works around the substation and in relation to the transmission line until practical completion. After that time AGL will assume these responsibilities.

Post sowing, all revegetated areas will be monitored (photographed) and maintained throughout the growing season until these areas are well established, in good health and self-sustaining.

At this point, a suitably qualified expert (whose appointment has been agreed to by the Director-General – as required by the Development consent condition) will be invited to inspect these sites to verify the success of the rehabilitation program.

7.11.4 Responsibilities

Where natural revegetation is unsuccessful, the Project and Site Manager will identify requirements to progressively rehabilitate the project. This would ensure that ongoing impacts to nearby residents, livestock, crops and native flora and fauna are minimised.

7.12 Landscape Plan

CPP responsibilities in respect of the project are the development of the transmission line and substation. Condition C3(c) of the development consent relates to the requirement to develop a landscape plan to minimise visual impacts associated with the solar plant. Additionally, mitigation measure 37 states:

> *To break up views of infrastructure, screening vegetation would be planted or allowed to regenerate in areas identified in Figure 6.1 of the Visual Impact Assessment. Maintenance requirements of the planting would be considered within the operational management plan to ensure that plants are watered as required and that dead plants are replaced.*

The transmission line requires a 40 m wide easement that must, for reasons of risk management (principally bushfires), be kept clear of tall vegetation.

There was never an intent, nor a capacity to provide for landscape plantings to try and screen the transmission line. This is not practicable. As per MM41, the transmission line would be developed utilising the following techniques to minimise visual impacts to landscape:

- setting poles as far back as possible from the road where the transmission line crosses the road;
- arranging the poles so that the transmission line crosses roads at right angles; and
- locating poles where they can be screened from view by existing vegetation (and adding in screening vegetation where needed).

CPP will minimise visual impacts through restricting vegetation removal to the minimum possible. That is, whilst clearing of overstorey vegetation will be necessary, groundcover vegetation within the easement will be mostly retained.

No specific landscaping is proposed in relation to the substation as this will benefit from broader site landscaping to be installed, monitored and maintained by First Solar (initially) and AGL (ongoing). Refer to the First Solar CEMP for specific details as to how this requirement is addressed, particularly in relation to the southern boundary.

8 COMPLIANCE TRACKING PROGRAM

By virtue of condition C16 of approval SSD_5355 AGL, as the applicant, are obligated to develop a compliance tracking program to satisfactorily demonstrate compliance with development consent conditions.

CPP, as a contractor the project, commit to the provision of such information to AGL as is required to enable AGL to fully comply with Condition C16. In this respect, the following sections identify the key mechanisms within this CEMP that would ensure that the necessary information is accurately gathered.

Provisions for periodic reporting of compliance status to the Director-General including at least prior to the commencement of construction of the development, prior to the commencement of operation of the development and within two years of operation commencement;

The following sections of this CEMP provide reporting mechanisms in respect of the project:

- **Section 6.4** provides for the preparation of reporting in relation to bushfire management;
- **Section 6.6** provides the mechanisms for incident management reporting, both internal and external;
- **Section 6.8** provides mechanisms and templates for weekly and monthly construction reporting;
- **Section 6.12** provides mechanism for reporting around risk management and hazards;
- The Traffic Management Plan contains auditing requirements in accordance with AGL Environmental Management Systems;
- **Section 7.3.7** contains mechanisms for reporting fauna handling; and
- **Section 7.9.8** contains mechanisms for reporting of noise monitoring in response to any noise complaints received.

A number of project form (templates) have been developed to simply reporting of incidents, hazards etc. These forms are provided in **Appendix E** of the CEMP. All reports generated will be filed in the project folder.

A program of independent environmental auditing in accordance with AS/NZ ISO 19011:203 – Guidelines for Quality and/or Environmental Management Systems Auditing;

The WHSE and QA Manager would be responsible for performing a range of functions, including conducting environmental audits in accordance with relevant policies, procedures, CEMPs, safe work method statements and related registers and documents with legislative and corporate requirements. The specific responsibilities of the WHSE and QA Manager is identified in **Section 4.3** of this CEMP.

Procedures to rectifying any non-compliance identified during environmental auditing or review of compliance;

The WHSE and QA Manager would be responsible for performing a range of functions, including conducting audits to identify any non-conformance or non-compliance within project functions. The Manager would ensure that all registers of non-conformance/compliance are maintained up to date and analysed on a monthly basis for trends. Non-conformance items would also be discussed at monthly meetings involving the Project Manager, Site Manager, Subcontractors Site Manager and where possible WHSE and QA Manager/Coordinator.

Mechanisms for recording environmental incidents and actions taken in response to those incidents;

Section 6.6 sets out the key mechanism for internal and external incident management and reporting.

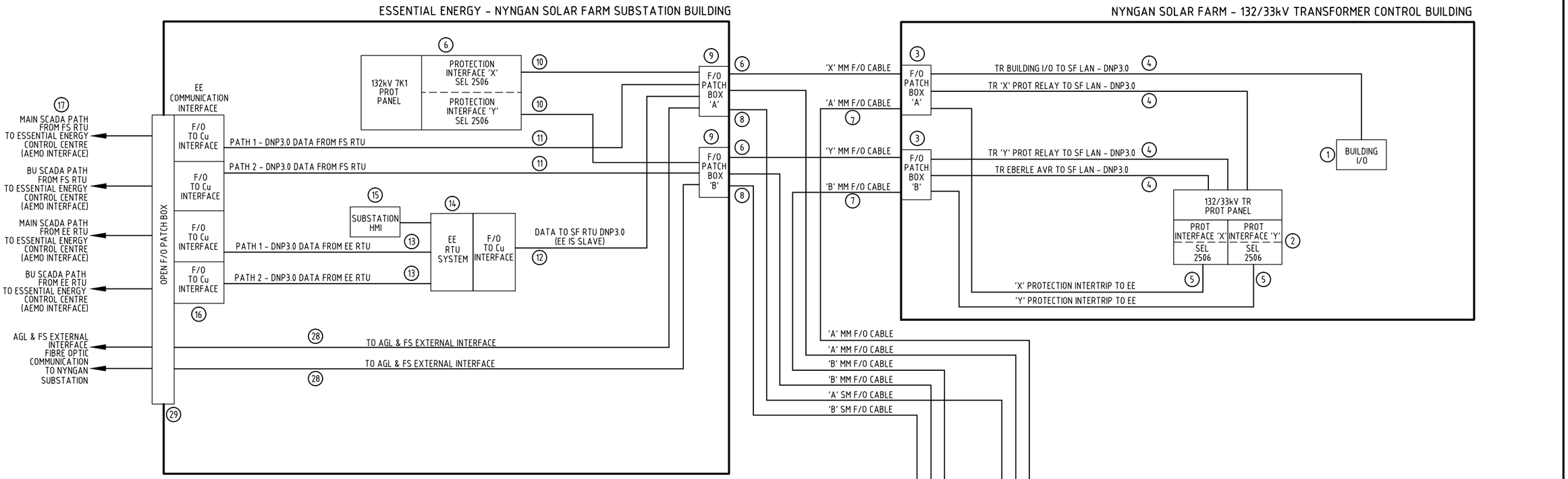
Provisions for reporting environmental incidents to the Director-General during construction and operation;

All reporting arising from internal or external incidents would be forwarded to AGL on a periodic basis and would be otherwise maintained in the project file.

Provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.

Training of all staff would be a key output of the CEMP with the broad responsibility resting with the Project Manager, and thereon down to all levels of management, employees and contractors. **Section 4** of the CEMP sets out key responsibilities in this regard.

9 DRAWINGS



ITEM	RESPONSIBILITY	DESCRIPTION
1	CPP	DESIGN, INSTALL AND COMMISSION AN I/O MODULE INSIDE THE AGL 132/33kV TRANSFORMER CONTROL BUILDING. THE I/O MODULE MONITORS THE BUILDING ALARMS INCLUDING THE AC BOARD AND BATTERY CHARGERS. THE I/O MODULE INTERFACE DIRECTLY TO THE FS LAN SYSTEM VIA A FIBRE OPTIC CABLE. THE I/O MODULE COMMUNICATES TO THE FS SCADA SYSTEM USING THE DNP3.0 PROTOCOL. CPP TO PROVIDE THE I/O MODULE DATA POINTS LIST TO FS IN AN EXCEL FORMAT.
2	CPP	DESIGN, INSTALL AND COMMISSION A PROTECTION PANEL INSIDE THE AGL 132/33kV TRANSFORMER CONTROL BUILDING. THE PROTECTION PANEL INTERFACES TO FS LAN AND EE PROTECTION SYSTEM.
3	CPP	SUPPLY AND INSTALL 'X' AND 'Y' FIBRE OPTIC BOXES INSIDE THE AGL 132/33kV TRANSFORMER CONTROL BUILDING. THESE FIBRE OPTIC BOXES INTERFACE TO THE TWO FS FIBRE OPTIC BOXES AND ALSO THE TWO EE FIBRE OPTIC BOXES.
4	CPP	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE I/O MODULE, TWO PROTECTION RELAYS, AVR CONTROLLER AND THE FIBRE OPTIC BOXES INSIDE THE AGL 132/33kV TRANSFORMER CONTROL BUILDING.
5	CPP	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE SEL2506 PROTECTION INTERFACES AND THE FIBRE OPTIC BOXES INSIDE THE AGL 132/33kV TRANSFORMER CONTROL BUILDING.
6	CPP	SUPPLY, INSTALL, TERMINATE AND TEST TWO 12 CORE MULTI MODE FIBRE OPTIC CABLES BETWEEN THE AGL 132/33kV TRANSFORMER CONTROL BUILDING TO THE EE CONTROL BUILDING.
7	CPP	SUPPLY, INSTALL, TERMINATE AND TEST TWO 12 CORE MULTI MODE FIBRE OPTIC CABLES BETWEEN THE AGL 132/33kV TRANSFORMER CONTROL BUILDING TO THE FS CONTROL BUILDING. FS FIBRE OPTIC BOXES TO BE INSTALLED AND READY FOR TERMINATION WHEN CPP TERMINATORS ARE PERFORMING THE WORKS.
8	CPP	SUPPLY, INSTALL, TERMINATE AND TEST TWO 12 CORE MULTI MODE FIBRE OPTIC CABLES AND TWO 12 CORE SINGLE MODE FIBRE OPTIC CABLES BETWEEN THE FS CONTROL BUILDING AND EE CONTROL BUILDING. FS FIBRE OPTIC BOXES TO BE INSTALLED AND READY FOR TERMINATION WHEN CPP TERMINATORS ARE PERFORMING THE WORKS.
9	CPP	SUPPLY AND INSTALL 'X' AND 'Y' FIBRE OPTIC BOXES INSIDE THE EE CONTROL BUILDING. THESE FIBRE OPTIC BOXES INTERFACE TO THE TWO FS FIBRE OPTIC BOXES AND ALSO THE TWO AGL TRANSFORMER BUILDING FIBRE OPTIC BOXES.
10	CPP	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE SEL2506 PROTECTION INTERFACES AND THE FIBRE OPTIC BOXES INSIDE THE EE CONTROL BUILDING.
11	CPP	SUPPLY AND INSTALL **MULTI MODE FIBRE** OPTIC PATCH LEADS BETWEEN THE EE COMMUNICATION INTERFACE AND THE FIBRE OPTIC BOXES INSIDE THE EE CONTROL BUILDING.
12	CPP	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE EE RTU INTERFACE AND THE FIBRE OPTIC BOXES INSIDE THE EE CONTROL BUILDING.
13	CPP	SUPPLY AND INSTALL **MULTI MODE FIBRE** OPTIC PATCH LEADS BETWEEN THE EE RTU INTERFACE AND THE EE COMMUNICATION INTERFACE INSIDE THE EE CONTROL BUILDING.
14	EE	SUPPLY, INSTALL AND COMMISSION A SUBSTATION RTU INSIDE THE EE CONTROL BUILDING. PROVIDE DATA POINTS LIST TO EE CONTROL CENTRE. PROVIDE DATA POINTS LIST TO FS - THESE ARE THE POINTS FROM THE EE RTU TO BE DISPLAYED ON THE FS HMI. (FS TO PROVIDE THE SOLAR FARM DATA POINTS LIST TO EE CONTROL CENTRE AND AEMO - SEE POINT 21 BELOW)
15	EE	SUPPLY, INSTALL AND COMMISSION A SUBSTATION HMI INSIDE THE EE CONTROL BUILDING.
16	EE	SUPPLY, INSTALL AND COMMISSION A COMMUNICATION SYSTEM BETWEEN NYNGAN SUBSTATION AND NYNGAN SOLAR FARM SUBSTATION. EE TO PROVIDE DETAILS OF THE COMMUNICATION SYSTEM. EE TO PROVIDE FIBRE OPTIC TO COPPER INTERFACE UNITS AT EE END - EE TO PROVIDE DETAILS OF THESE UNIT TO FS - FS TO INSTALL THE SAME UNITS AT FS SIDE.
17	EE/FS	EE: COMMISSION COMMUNICATION PATHES FROM EE SUBSTATION TO EE CONTROL CENTRE. EE: COMMISSION EE RTU TO EE CONTROL CENTRE. FS: COMMISSION FS RTU TO EE CONTROL CENTRE AND AEMO.
18	FS	SUPPLY AND INSTALL 'A' AND 'B' FIBRE OPTIC BOXES INSIDE THE FS CONTROL BUILDING - EACH BOX MUST BE CAPABLE TO TERMINATE 48 F/O CORES. THESE FIBRE OPTIC BOXES INTERFACE TO THE TWO EE FIBRE OPTIC BOXES AND ALSO THE TWO AGL TRANSFORMER BUILDING FIBRE OPTIC BOXES.
19	FS	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE FS LAN AND THE FIBRE OPTIC BOXES INSIDE THE FS CONTROL BUILDING. (INTERFACE TO TR BUILDING I/O MODULE, TWO PROTECTION RELAYS, AVR CONTROLLER)
20	FS	SUPPLY, INSTALL AND COMMISSION A LAN SYSTEM INSIDE THE FS CONTROL BUILDING - AGL TRANSFORMER PROTECTION AND CONTROL EQUIPMENT INTERFACE TO THIS LAN VIA MULTI MODE FIBRE OPTIC.
21	FS	SUPPLY, INSTALL AND COMMISSION A RTU SYSTEM INSIDE THE FS CONTROL BUILDING. AGL TRANSFORMER PROTECTION AND CONTROL EQUIPMENT TO BE COMMISSIONED TO THIS RTU SYSTEM BY FS - CPP TO ASSIST FROM TRANSFORMER SIDE. FS TO COMMISSION THE RTU SYSTEM TO EE CONTROL CENTRE AND AEMO. FS TO COMMISSION REQUIRED DATA POINTS FROM THE EE RTU TO THE FS RTU. FS TO PROVIDE SOLAR FARM DATA POINTS LIST TO EE CONTROL CENTRE AND AEMO.
22	FS	SUPPLY, INSTALL AND COMMISSION COMMUNICATION PATHES FROM FS RTU SYSTEM TO EE COMMUNICATION INTERFACE. FS INTERFACE TO BE SIMILAR TO THE INTERFACE EQUIPMENT SUPPLIED BY EE - SEE POINT 16 ABOVE. FS TO CONSULT WITH EE COMMUNICATION PERSONNEL TO ESTABLISH COMMUNICATION THROUGH TO EE CONTROL CENTRE.
23	FS	SUPPLY AND INSTALL MULTI MODE FIBRE OPTIC PATCH LEADS BETWEEN THE FS RTU INTERFACE AND THE FIBRE OPTIC BOXES INSIDE THE FS CONTROL BUILDING.
24	FS	SUPPLY, INSTALL AND COMMISSION ALL TRANSFORMER DATA TO THE FS HMI - CPP TO ASSIST FROM TRANSFORMER BUILDING SIDE. COMMISSION EE SUBSTATION INFORMATION TO THE FS HMI - CPP TO ASSIST FROM EE BUILDING SIDE.
25	FS	COMMISSION ALL FS EQUIPMENT INSIDE BUILDING.
26	FS	COMMISSION ALL FS SOLAR FARM EQUIPMENT.
27	FS	COMMISSION ALL SCADA TO AGL CONTROL CENTRE. PROVIDE ENGINEERING ACCESS FROM AGL & FS.
28	CPP	SUPPLY, INSTALL & COMMISSION FIBRE OPTIC PATCH LEADS BETWEEN TO F/O PATCH BOXES & THE OPGW PATCH BOX INSIDE THE EE CONTROL BUILDING.
29	CPP	SUPPLY & INSTALL A PATCH BOX INSIDE THE EE CONTROL BUILDING TO TERMINATE THE OPGW F/O CABLES.

NOTE: MM F/O = MULTIMODE FIBRE OPTIC CABLE
SM F/O = SINGLE MODE FIBRE OPTIC CABLE

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B	24.09.13	RE-ISSUED FOR REVIEW	SC	DD	EW
A	09.09.13	PRELIMINIARY ISSUE	SC	DD	EW

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DRAWN	SC	DATE	09.9.13
DESIGN	DD	DATE	
CHECKED		DATE	
APPR		DATE	

cad DO NOT AMEND MANUALLY

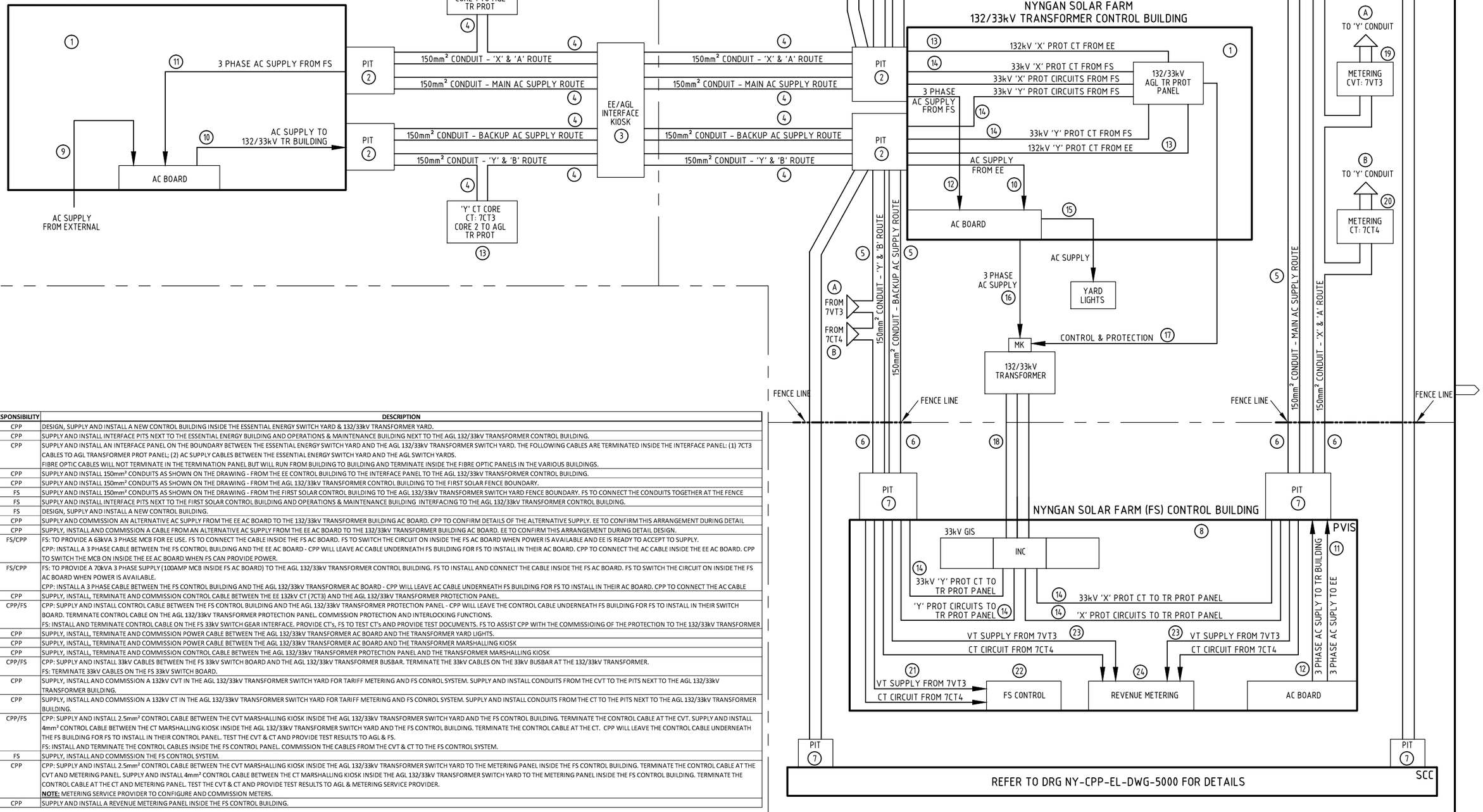
PRELIMINARY
DRAWING STATUS

SCALE NTS

NYNGAN SOLAR FARM CONNECTION

NYNGAN SOLAR FARM SUBSTATION INTERFACE & RESPONSIBILITY FLOW CHART DIAGRAM

A1	NY-CPP-EL-DWG-5000	C
	PREFIX NUMBER SHEET	AMDT



ITEM	RESPONSIBILITY	DESCRIPTION
1	CPP	DESIGN, SUPPLY AND INSTALL A NEW CONTROL BUILDING INSIDE THE ESSENTIAL ENERGY SWITCH YARD & 132/33kV TRANSFORMER YARD.
2	CPP	SUPPLY AND INSTALL INTERFACE PITS NEXT TO THE ESSENTIAL ENERGY BUILDING AND OPERATIONS & MAINTENANCE BUILDING NEXT TO THE AGL 132/33kV TRANSFORMER CONTROL BUILDING.
3	CPP	SUPPLY AND INSTALL AN INTERFACE PANEL ON THE BOUNDARY BETWEEN THE ESSENTIAL ENERGY SWITCH YARD AND THE AGL 132/33kV TRANSFORMER SWITCH YARD. THE FOLLOWING CABLES ARE TERMINATED INSIDE THE INTERFACE PANEL: (1) 7CT3 CABLES TO AGL TRANSFORMER PROT PANEL; (2) AC SUPPLY CABLES BETWEEN THE ESSENTIAL ENERGY SWITCH YARD AND THE AGL SWITCH YARDS. FIBRE OPTIC CABLES WILL NOT TERMINATE IN THE TERMINATION PANEL BUT WILL RUN FROM BUILDING TO BUILDING AND TERMINATE INSIDE THE FIBRE OPTIC PANELS IN THE VARIOUS BUILDINGS.
4	CPP	SUPPLY AND INSTALL 150mm² CONDUITS AS SHOWN ON THE DRAWING - FROM THE EE CONTROL BUILDING TO THE INTERFACE PANEL TO THE AGL 132/33kV TRANSFORMER CONTROL BUILDING.
5	CPP	SUPPLY AND INSTALL 150mm² CONDUITS AS SHOWN ON THE DRAWING - FROM THE AGL 132/33kV TRANSFORMER CONTROL BUILDING TO THE FIRST SOLAR FENCE BOUNDARY.
6	FS	SUPPLY AND INSTALL 150mm² CONDUITS AS SHOWN ON THE DRAWING - FROM THE FIRST SOLAR CONTROL BUILDING TO THE AGL 132/33kV TRANSFORMER SWITCH YARD FENCE BOUNDARY. FS TO CONNECT THE CONDUITS TOGETHER AT THE FENCE
7	FS	SUPPLY AND INSTALL INTERFACE PITS NEXT TO THE FIRST SOLAR CONTROL BUILDING AND OPERATIONS & MAINTENANCE BUILDING INTERFACING TO THE AGL 132/33kV TRANSFORMER CONTROL BUILDING.
8	FS	DESIGN, SUPPLY AND INSTALL A NEW CONTROL BUILDING.
9	CPP	SUPPLY AND COMMISSION AN ALTERNATIVE AC SUPPLY FROM THE EE AC BOARD TO THE 132/33kV TRANSFORMER BUILDING AC BOARD. CPP TO CONFIRM DETAILS OF THE ALTERNATIVE SUPPLY. EE TO CONFIRM THIS ARRANGEMENT DURING DETAIL
10	CPP	SUPPLY, INSTALL AND COMMISSION A CABLE FROM AN ALTERNATIVE AC SUPPLY FROM THE EE AC BOARD TO THE 132/33kV TRANSFORMER BUILDING AC BOARD. EE TO CONFIRM THIS ARRANGEMENT DURING DETAIL DESIGN.
11	FS/CPP	FS: TO PROVIDE A 63kVA 3 PHASE MCB FOR EE USE. FS TO CONNECT THE CABLE INSIDE THE FS AC BOARD. FS TO SWITCH THE CIRCUIT ON INSIDE THE FS AC BOARD WHEN POWER IS AVAILABLE AND EE IS READY TO ACCEPT TO SUPPLY. CPP: INSTALL A 3 PHASE CABLE BETWEEN THE FS CONTROL BUILDING AND THE EE AC BOARD - CPP WILL LEAVE AC CABLE UNDERNEATH FS BUILDING FOR FS TO INSTALL IN THEIR AC BOARD. CPP TO CONNECT THE AC CABLE INSIDE THE EE AC BOARD. CPP TO SWITCH THE MCB ON INSIDE THE EE AC BOARD WHEN FS CAN PROVIDE POWER.
12	FS/CPP	FS: TO PROVIDE A 70kVA 3 PHASE SUPPLY (100AMP MCB INSIDE FS AC BOARD) TO THE AGL 132/33kV TRANSFORMER CONTROL BUILDING. FS TO INSTALL AND CONNECT THE CABLE INSIDE THE FS AC BOARD. FS TO SWITCH THE CIRCUIT ON INSIDE THE FS AC BOARD WHEN POWER IS AVAILABLE. CPP: INSTALL A 3 PHASE CABLE BETWEEN THE FS CONTROL BUILDING AND THE AGL 132/33kV TRANSFORMER AC BOARD - CPP WILL LEAVE AC CABLE UNDERNEATH FS BUILDING FOR FS TO INSTALL IN THEIR AC BOARD. CPP TO CONNECT THE AC CABLE
13	CPP	SUPPLY, INSTALL, TERMINATE AND COMMISSION CONTROL CABLE BETWEEN THE EE 132kV CT (7CT3) AND THE AGL 132/33kV TRANSFORMER PROTECTION PANEL.
14	CPP/FS	CPP: SUPPLY AND INSTALL CONTROL CABLE BETWEEN THE FS CONTROL BUILDING AND THE AGL 132/33kV TRANSFORMER PROTECTION PANEL - CPP WILL LEAVE THE CONTROL CABLE UNDERNEATH FS BUILDING FOR FS TO INSTALL IN THEIR SWITCH BOARD. TERMINATE CONTROL CABLE ON THE AGL 132/33kV TRANSFORMER PROTECTION PANEL. COMMISSION PROTECTION AND INTERLOCKING FUNCTIONS. FS: INSTALL AND TERMINATE CONTROL CABLE ON THE FS 33kV SWITCH GEAR INTERFACE. PROVIDE CT's, FS TO TEST CT's AND PROVIDE TEST DOCUMENTS. FS TO ASSIST CPP WITH THE COMMISSIOING OF THE PROTECTION TO THE 132/33kV TRANSFORMER
15	CPP	SUPPLY, INSTALL, TERMINATE AND COMMISSION POWER CABLE BETWEEN THE AGL 132/33kV TRANSFORMER AC BOARD AND THE TRANSFORMER YARD LIGHTS.
16	CPP	SUPPLY, INSTALL, TERMINATE AND COMMISSION POWER CABLE BETWEEN THE AGL 132/33kV TRANSFORMER AC BOARD AND THE TRANSFORMER MARSHALLING KIOSK
17	CPP	SUPPLY, INSTALL, TERMINATE AND COMMISSION CONTROL CABLE BETWEEN THE AGL 132/33kV TRANSFORMER PROTECTION PANEL AND THE TRANSFORMER MARSHALLING KIOSK
18	CPP/FS	CPP: SUPPLY AND INSTALL 33kV CABLES BETWEEN THE FS 33kV SWITCH BOARD AND THE AGL 132/33kV TRANSFORMER BUSBAR. TERMINATE THE 33kV CABLES ON THE 33kV BUSBAR AT THE 132/33kV TRANSFORMER. FS: TERMINATE 33kV CABLES ON THE FS 33kV SWITCH BOARD.
19	CPP	SUPPLY, INSTALL AND COMMISSION A 132kV CVT IN THE AGL 132/33kV TRANSFORMER SWITCH YARD FOR TARIFF METERING AND FS CONROL SYSTEM. SUPPLY AND INSTALL CONDUITS FROM THE CVT TO THE PITS NEXT TO THE AGL 132/33kV TRANSFORMER BUILDING.
20	CPP	SUPPLY, INSTALL AND COMMISSION A 132kV CT IN THE AGL 132/33kV TRANSFORMER SWITCH YARD FOR TARIFF METERING AND FS CONROL SYSTEM. SUPPLY AND INSTALL CONDUITS FROM THE CT TO THE PITS NEXT TO THE AGL 132/33kV TRANSFORMER BUILDING.
21	CPP/FS	CPP: SUPPLY AND INSTALL 2.5mm² CONTROL CABLE BETWEEN THE CVT MARSHALLING KIOSK INSIDE THE AGL 132/33kV TRANSFORMER SWITCH YARD AND THE FS CONTROL BUILDING. TERMINATE THE CONTROL CABLE AT THE CVT. SUPPLY AND INSTALL 4mm² CONTROL CABLE BETWEEN THE CT MARSHALLING KIOSK INSIDE THE AGL 132/33kV TRANSFORMER SWITCH YARD AND THE FS CONTROL BUILDING. TERMINATE THE CONTROL CABLE AT THE CT. CPP WILL LEAVE THE CONTROL CABLE UNDERNEATH THE FS BUILDING FOR FS TO INSTALL IN THEIR CONTROL PANEL. TEST THE CVT & CT AND PROVIDE TEST RESULTS TO AGL & FS. FS: INSTALL AND TERMINATE THE CONTROL CABLES INSIDE THE FS CONTROL PANEL. COMMISSION THE CABLES FROM THE CVT & CT TO THE FS CONTROL SYSTEM.
22	FS	SUPPLY, INSTALL AND COMMISSION THE FS CONTROL SYSTEM.
23	CPP	CPP: SUPPLY AND INSTALL 2.5mm² CONTROL CABLE BETWEEN THE CVT MARSHALLING KIOSK INSIDE THE AGL 132/33kV TRANSFORMER SWITCH YARD TO THE METERING PANEL INSIDE THE FS CONTROL BUILDING. TERMINATE THE CONTROL CABLE AT THE CVT AND METERING PANEL. SUPPLY AND INSTALL 4mm² CONTROL CABLE BETWEEN THE CT MARSHALLING KIOSK INSIDE THE AGL 132/33kV TRANSFORMER SWITCH YARD TO THE METERING PANEL INSIDE THE FS CONTROL BUILDING. TERMINATE THE CONTROL CABLE AT THE CT AND METERING PANEL. TEST THE CVT & CT AND PROVIDE TEST RESULTS TO AGL & METERING SERVICE PROVIDER. **NOTE:** METERING SERVICE PROVIDER TO CONFIGURE AND COMMISSION METERS.
24	CPP	SUPPLY AND INSTALL A REVENUE METERING PANEL INSIDE THE FS CONTROL BUILDING.

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APPR		DATE	

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NYNGAN SOLAR FARM CONNECTION

NYNGAN SOLAR FARM SUBSTATION INTERFACE & RESPONSIBILITY CONDUIT ROUTES

A1	NY-CPP-EL-DWG-5001	C
	PREFIX NUMBER SHEET	AMDT

Nyngan Solar Farm - Protection & Interlock Hardwired Signals - Interface Signal Between 33kV Switch Gear and 132/33kV Transformer Bay: FS and CPP Hardwired Interface Signals

Item	Signal and circuits from First Solar (FS) 33kV Switch Board to 132/33kV Transformer Bay (CPP)	Comment
FS-AC 1	33kV 'X' CT Circuit	FS to provide CT details
FS-AC 2	33kV 'Y' CT Circuit	FS to provide CT details
FS-AC 3	33kV 'X' Bus Voltage	FS to provide VT details
FS-AC 4	33kV 'Y' Bus Voltage	FS to provide VT details
FS-TP 1	33kV 'X' Busbar Protection Trip (INC CB Fail INIT)	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC trip wetting voltage.
FS-TP 2	33kV INC CB Fail 'X' Trip	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC trip wetting voltage.
FS-TP 3	33kV 'Y' Busbar Protection Trip (INC CB Fail INIT)	FS to provide a voltage free contact - 132/33kV TR 'Y' Prot to provide the 125VDC trip wetting voltage.
FS-TP 4	33kV INC CB Fail 'Y' Trip	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC trip wetting voltage.
FS-ST 1	33kV INC CB Closed Status	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC wetting voltage. (CB Fail Check Prot)
FS-ST 2	33kV INC CB Closed Status	FS to provide a voltage free contact - 132/33kV TR 'Y' Prot to provide the 125VDC wetting voltage. (CB Fail Check Prot)
FS-ST 3	33kV INC CB Open Status	FS to provide a voltage free contact - 132/33kV TR 'Y' Prot to provide the 125VDC wetting voltage. (Status)
FS-ST 4	33kV INC CB Closed Status	FS to provide a voltage free contact - 132/33kV TR 'Y' Prot to provide the 125VDC wetting voltage. (Status)
FS-ST 5	33kV INC E/SW Open Status	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC wetting voltage. (Status)
FS-ST 6	33kV INC E/SW Closed Status	FS to provide a voltage free contact - 132/33kV TR 'X' Prot to provide the 125VDC wetting voltage. (Status)
FS-ST 7	33kV INC E/SW Open Status	FS to provide a voltage free contact - 132/33kV TR 'Y' 125VDC wetting voltage. (Interlock 132kV Isol 7L2)
FS-ST 8	33kV INC Isol Open Status	FS to provide a voltage free contact - 132/33kV TR 'Y' 125VDC wetting voltage. (Interlock 132kV E/SW 7E11)

Item	Signal and circuits from 132/33kV Transformer Bay (CPP) to First Solar (FS) 33kV Switch Board	Comment
CPP-TP 1	132/33kV TR 'X' Protection Trip (Trip FS 33kV INC 'X' Prot)	CPP to provide a voltage free contact - FS 33kV INC 'X' Prot to provide the 48VDC trip wetting voltage
CPP-TP 2	132/33kV TR 'Y' Protection Trip (Trip FS 33kV INC 'Y' Prot)	CPP to provide a voltage free contact - FS 33kV INC 'Y' Prot to provide the 48VDC trip wetting voltage
CPP-TP 3	33kV CB - CB Fail 'X' Protection Trip (Trip FS 33kV 'X' Buszone)	CPP to provide a voltage free contact - FS 33kV BZ 'X' Prot to provide the 48VDC trip wetting voltage
CPP-TP 4	33kV CB - CB Fail 'Y' Protection Trip (Trip FS 33kV 'Y' Buszone)	CPP to provide a voltage free contact - FS 33kV BZ 'Y' Prot to provide the 48VDC trip wetting voltage
FS-ST 1	132kV Disconenctor 7L2 Open Status - Possible Interlocking - T.B.C	CPP to provide a voltage free contact - FS can use the contact for interlocking if requied.
FS-ST 2	132kV E/SW 7E11 Open Status - Possible Interlocking - T.B.C	CPP to provide a voltage free contact - FS can use the contact for interlocking if requied.

APPENDICES

Appendix A – Environmental Policy

Environmental Statement

Consolidated Power Projects Australia Pty Ltd (CPP) acknowledges that environmental conservation is an important issue confronting the community.

At all stages of our operations it is our objective to avoid, reduce or control pollution and environmental impact. We will proactively identify and monitor the natural environment and implement sound and viable protection measures for our operational processes and deliverables.

We are therefore committed to conducting all aspects of our business in a responsible manner with an Environmental Management System that:

- Complies with the requirements of ISO 14001, applicable laws, regulations and standards;
- Recognizes the need for ecological and resource sustainability;
- Promotes a strong environmental ethic as part of the organisational culture; and
- Minimizes the impact of our activities on the environment.

This policy applies to all workplaces where CPP conducts its operations.

Environmental Objectives

Working with customers, employees and other stakeholders, CPP stands by its commitment to responsible environmental management by:

- Providing a framework for setting and reviewing measurable objectives and targets as the basis of continuous improvement to the company's Environmental Management System;
- Developing, implementing and maintaining the requirements of the Environmental Management System;
- Ensuring the availability of resources and the allocation of responsibilities;
- Effectively identifying and responding to environmental concerns and sensitivities by having safeguards and emergency/contingency plans in place;
- Establishing initiatives to avoid, reduce or control pollution; and conserve resources and minimise waste;
- Monitoring and improving processes and activities to protect the environment;
- Communicating openly with customers, regulatory bodies and the community generally on environmental issues;
- Giving preference to suppliers or service providers who adopt responsible environmental management practices; and
- Providing training for all personnel involved in CPP operations to encourage individual environmental responsibility and ownership of the company environmental policy.

This policy will be provided and explained to CPP employees and subcontractors. The policy will be periodically reviewed to ensure it remains relevant to CPP's operations.

Charles Wright

General Manager

Consolidated Power Projects Australia Pty Ltd

24th September 2012

Appendix B –Reference Documents

The following documents were researched and referenced during the preparation of this Work Health Safety and Environmental Plan

National WHS Acts and Regulations	WHS Act 2011 (NSW, Queensland, Australian Capital Territory and Northern Territory)	WHS Regulation 2011 (NSW, Queensland, Australian Capital Territory and Northern Territory)
	WHS Act 2012 (South Australia and Tasmania)	WHS Regulation 2012 (South Australia and Tasmania)

National WHS Codes of Practice	Construction Work	Construction Work Managing Electrical Risks at the Workplace
	How to Manage Work Health and Safety Risks	Managing Risks of Plant in the Workplace
	Hazardous Manual Tasks	Safe Design of Buildings and Structures
	Managing the Risks of Falls at Workplaces	Excavation Work
	Labelling of Workplace Hazardous Chemicals	Demolition Work
	Confined Spaces	Welding and Allied Processes
	Managing Noise and Preventing Hearing Loss at Work	Preventing and Managing Fatigue in the Workplace (Approved Code of Practice for Working Hours - South Australia)
	Managing the Work Environment and Facilities	Preventing and Responding to Workplace Bullying
	Work Health and Safety Consultation Cooperation and Coordination	Spray Painting and Powder Coating
	How to Safely Remove Asbestos	Abrasive Blasting
	How to Manage and Control Asbestos in the Workplace	Managing Risks of Hazardous Chemicals

AUSTRALIAN STANDARDS		
Confined Spaces	AS 2865-2009 Confined Spaces	
Electrical Equipment	AS/NZS 3017 Electrical installations – Testing and inspection guidelines	AS 3760 In-service safety inspection and testing of electrical equipment
	AS/NZS 3000 – Wiring Rules	AS/NZS 3199 – Cord Extension Sets
Hazardous Substances and Dangerous Goods	AS1940 The Storage and Handling of Flammable and Combustible Liquids	AS3780 The storage and handling of corrosive substances
	AS1596 The Storage and handling of LP Gas.	AS4332 Storage and handling of gas in cylinders
Mechanical Lifting	AS 2550:5 - Cranes Hoists & Winches – Safe Use – Mobile Cranes	AS1666.2 - Wire ropes
	AS 1418.8 - Cranes Hoists & Winches – Special Purpose Appliances	AS4497.1 - Synthetic Slings
	AS 1418:5 - Cranes, Hoists & Winches – Mobile Cranes	AS4991-2004 - Lifting Jigs & Gripping Devices
	ISO/TR 19961 - Cranes – Safety Code on Mobile Cranes	AS2741 - Shackles
	AS3775.2 - Chain Slings	
Management Systems	AS/NZ 4801: Occupational Health and Safety Management Systems	AS/NZ ISO 14001: Environmental Management Systems
	AS/NZS ISO 9001: Quality Management Systems	
Personal Protective Equipment	AS/NZS 1801 – Occupational protective helmets	AS/NZS 1338.2 – Filters for eye protectors
	AS/NZS 1337 – Eye protectors for industrial applications	AS/NZS 4602 – High visibility safety garments
	AS/NZS 1269.3: – Occupational noise management – Hearing protector program	AS 3795 – Clothing for protection against hazardous chemicals
	AS/NZS 2604 – Sunscreen products	AS/NZS 1716 – Respiratory protective devices
	AS1067.2 – Sunglasses and fashion spectacles	AS/NZS 1715 – Selection, use and maintenance of respiratory protective devices
	AS/NZS 1336 – Recommended practices for occupational eye protection	AS/NZS 2161 – Occupational protective gloves
	AS/NZS 1337 – Eye protectors for industrial applications	
Project Signage	AS1319 – Safety signs for the occupational environment	
Underground Services	AS 4799 Installation of underground utility services and pipelines	
Other Standards	National Approach to Traffic Control at Worksites	RTA – Traffic Control at Work Sites (RMS NSW)
	The Code of Technical Requirements (DPTI South Australia)	The Building Code of Australia
	Vic Roads	

Appendix C - Agency Stakeholder Consultation

Office of Environment and Heritage

A copy of the Flora and Fauna Management Plan (FFMP) was submitted to OEH 27 November 2013.

OEH provided advice for consideration on 12 December 2013 (see attached).

This advice has been accepted by CPP and incorporated into the FFMP: specifically:

- Scope of FFMP in relation to Operational Environmental Management Plan and the Decommissioning Plan – refer **Section 7.3.3**; and
- Grey Crowned Babbler – refer **Section 7.3.6**.

NSW Office of Water

A copy of the CEMP was submitted to NSW Office of Water 2 December 2013.

Correspondence from the NSW Office of Water (received 4 December 2013) is attached; indicating no specific comment. Correspondence makes reference to NOW letter sent to First Solar in respect of their CEMP. The matters raised in that letter are discussed in **Section 7.2** of this CEMP.

Rural Fire Service

A copy of the CEMP was submitted to Rural Fire Service 2 December 2013. RFS requested that contact details for a CPP representative (available 24/7) be included in the CEMP.

This detail has been incorporated in **Section 6.4.2** and a copy sent to the Rural Fire Service.

Rural Fire Service confirmed by e-mail 11 December 2013 (see attached) that it agreed with the amended plan and appreciated the consultation which had taken place.

Bogan Shire Council

A copy of the CEMP was submitted to Bogan Shire Council 2 December 2013.

Council responded by e-mail 11 December 2013 (see attached) that it had no objection to the Consolidated Power Project – CEMP.

Office of Environment & Heritage

NSW GOVERNMENT

Date: 12th December 2013
Your reference: FRM-C009_CEMP-s7.3
Our reference: DOC13/91786
Contact: Terry Mazzer 6883 5302

Andrew Brownlow
Project Manager CEnvP
Geolyse Pty Ltd
PO Box 1963
Orange NSW 2800

Dear Mr Brownlow

RE: Flora and Fauna Management Plan for Nyngan Solar Plant Grid Connection (SSD 5355)

I refer to your letter dated 27th November 2013 seeking comment from the Office and Environment and Heritage (OEH) on the Flora and Fauna Management Plan (FFMP) for the Grid Connection Nyngan Solar Plant Project. OEH has reviewed the FFMP and the following advice is provided for your consideration.

Scope of the FFMP

The scope of the FFMP is exclusively on measures required to be adopted during the construction phase of the project. While the FFMP is directly related to the Biodiversity Offset Management Package (consent condition C5), its relationship to other plans required under the conditions of consent has not been stated. The connections between the FFMP and the Operation Environmental Management Plan (OEMP) (consent condition C4) and the Decommissioning Management Plan (DMP) (consent condition C6) should be included as part of the FFMP. To maintain consistency this should be done in a similar way to that of the FFMP for the Nyngan Solar PV Power Station.

Grey-crowned Babbler

The FFMP states that *"One nest site and a single family group of Grey-crowned Babblers have been recorded in the vicinity of the transmission line easement"* and that *"This nest site would not be impacted by the transmission line".* This shows that Grey-crowned Babblers will make nests in this area and it is possible that new nests may have been constructed since surveys were conducted.

The FFMP should state that impacts on any Grey-crowned Babbler nests subsequently found will be avoided wherever possible. The FFMP should add the following responsibility to that of the Project Ecologist, along the lines of; "Conduct pre-clearance surveys for Grey-crowned Babbler nests in the vicinity of the transmission line easement and verify that any nests found are inactive". This could be done at the same time as the hollow-bearing tree survey. The intent of Mitigation Measure 5 (no removal of active nests) should be followed here, even though this measure specifically relates to an adjacent area of vegetation.

Should you require further information regarding these matters please contact Terry Mazzer, Conservation Planning Officer on (02) 6883 5302 or email terry.mazzer@environment.nsw.gov.au.

Yours sincerely,

SONYA ARDILL
Senior Team Leader Planning, North West Region
Regional Operations

Department of Primary Industries
Office of Water

Contact Tim Baker
Phone 02 6841 7403
Mobile 0428 162 097
Fax 02 6884 0096
Email Tim.Baker@water.nsw.gov.au

Our ref ER21946

Andrew Brownlow
Geolyse Pty Ltd
PO Box 1963
ORANGE NSW 2800

Dear Andrew

NYNGAN SOLAR PROJECT – CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

I refer to your email dated the 2nd December 2013 requesting comments from the NSW Office of Water in relation to the draft Construction Environment Management Plan (CEMP) for the Nyngan Solar Plant Project. It is recognised this request is in accordance with Schedule 2, Part C, Condition C2 of Project Approval SSD-5355.

The NSW Office of Water has reviewed the document and has no specific comments. Reference however is made to comments made by the NSW Office of Water in a letter dated 26 November 2013 to Steph Froggatt (First Solar Australia) regarding the CEMP Soil and Water Management Plan. It is recommended the comments in this letter be considered in finalising the overarching CEMP.

Should you have any further queries in relation to this submission please do not hesitate to contact Tim Baker on (02) 6841 7403.

Yours sincerely

Mitchell Isaacs
Manager Strategic Stakeholder Liaison
4 December 2013

Latisha Ryall

From: Greg Sim <Greg.Sim@rfs.nsw.gov.au>
Sent: Wednesday, 11 December 2013 6:49 PM
To: Andrew Brownlow
Subject: Re: 213340 - Nyngan Solar Plant (Transmission Line Connection) Rural Fire Service
Attachments: image001.jpg; image002.png

Hi Andrew

Thanks for the conversation today. I agree with the amended plan and appreciate the consultation which has taken place.

Regards

Greg Sim
Manager
North West Zone/Bogan District
NSW Rural Fire Service
P: 6822 4422<tel:6822%204422>
M: 0428 253 224<tel:0428%20253%20224>
E: Greg.Sim@rfs.nsw.gov.au<mailto:Greg.Sim@rfs.nsw.gov.au>

On 11 Dec 2013, at 3:31 pm, "Andrew Brownlow" <abrownlow@geolyse.com<mailto:abrownlow@geolyse.com>> wrote:

Greg

Thanks again for your time today. As requested, I have updated the section of the CEMP dealing with bush fire management to include the name and contact details for 24/7 access to the CPP contact person. This is included in the red text in Section 6.4.2. As discussed, confirmation that you are OK with this plan and that you have been consulted is required by virtue of consent conditions. A short e-mail would suffice for this purpose. Again, I recognise it is a busy time of year for you and CPP is appreciative of your input and feedback in such a timely manner. Hope you have a quiet and uneventful season.

Regards

Andrew

Andrew Brownlow
Project Manager CEnvP
Geolyse Pty Ltd
154 Peisley St
PO Box 1963
Orange NSW 2800
Ph: 02 6393 5000
Fx: 02 6393 5050
Mob: 0417 210 253
Email: abrownlow@geolyse.com<mailto:abrownlow@geolyse.com>
Web: www.geolyse.com<http://www.geolyse.com>

Facebook<https://www.facebook.com/pages/Geolyse-Pty-Ltd/136079453130271> |
LinkedIn<http://www.linkedin.com/groups/Geolyse-3865253>
.....
IMPORTANT

From: Greg Sim [mailto:Greg.Sim@rfs.nsw.gov.au]
Sent: Tuesday, 3 December 2013 1:08 PM
To: Andrew Brownlow
Subject: RE: 213340 - Nyngan Solar Plant (Transmission Line Connection) Rural Fire Service

Hi Andrew

I have received your email, I am in the process of seeking clarification on a couple of things with our development branch in Head Office, I will get back to you as soon as I can.

Regards

<image001.jpg>

<image002.png>

Greg Sim
Manager North West
NSW Rural Fire Service
Coonamble FCC | Lot 3 Buckley Drive Coonamble NSW 2829 Mail | PO Box 370 Coonamble NSW 2829 m 0428 253 224 | p 02 6822 4422 | f 02 6822 4203 | email: greg.sim@rfs.nsw.gov.au<mailto:greg.sim@rfs.nsw.gov.au>

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Monday, December 02, 2013 11:27 AM
To: Greg Sim
Cc: 'Orange Document Control'; 'Edwin Munian'
Subject: 213340 - Nyngan Solar Plant (Transmission Line Connection) Rural Fire Service

Zone Manager
North West Zone
Inspector Greg Sim

Greg

Geolyse has worked with Consolidated Power Projects (CPP) in preparing a Construction Environmental Management Plan for CPP's part of the works associated with AGL's Nyngan Solar Plant project. AGL (the proponent) has awarded works to two principal contractors. First Solar are building the farm arrays, whilst CPP is constructing the sub-station (within the approved farm site) and the overhead transmission line connection. The CEMP attached is for CPP and concentrates on those specific works which it will be undertaking (ie. zone sub-station and overhead line).

You may recall we previously prepared a Bushfire Plan for the First Solar activities. We have now prepared controls for minimising bushfire risks for CPP's activities. The Minister's Consent Conditions require preparation of a CEMP for submission and sign-off to the Department of Planning. Within this consent conditions, there is reference to the need to prepare the CEMP in consultation with the Rural Fire Service. Specifically, conditions B3 and B4 state:

B3. The Applicant shall ensure that all development components on site are designed, constructed and operated to minimise ignition risks, provide for asset protection consistent with relevant NSW Rural Fire Services (RFS) design guidelines (Planning for Bushfire Protection 2006 and Standards for Asset Protection, undarted) and provide for necessary emergency management including appropriate fire fighting equipment and water supplies on site to respond to a bush fire.

B4: Throughout the operational life of the development, the Applicant shall regularly consult with the local RFS to ensure its familiarity with the development, including the construction timetable and final location of all infrastructures on the site. The Applicant shall comply with any reasonable request of the local RFS to reduce the risk of bushfire and to enable fast access in emergencies.
) measures to monitor and manage soil and water impacts in consultation with NOW including: control measures for works close to or involving waterway crossings (including rehabilitation measures following disturbance

We have also been advised that the Department requests evidence that consultation has occurred. To this end, please see attached a copy of the CEMP provided for your comment. The section in the CEMP dealing with bush fire is Section 6.4. We have, however, provided the full CEMP so that you can see the context and scope of coverage within the CEMP.

Finally, and acknowledging this is no doubt one of may things on your plate, the construction program has a January start and to this end any comment you may have would be greatly appreciated as soon as is possible at your end. Of course if there is anything further we can provide that may help expedite the consultation process please do not hesitate to give me a call.

With thanks and regards

Andrew

Andrew Brownlow
Project Manager CEnvP
Geolyse Pty Ltd
154 Peisley St
PO Box 1963
Orange NSW 2800
Ph: 02 6393 5000
Fx: 02 6393 5050
Mob: 0417 210 253
Email: abrownlow@geolyse.com<mailto:abrownlow@geolyse.com>
Web: www.geolyse.com<http://www.geolyse.com>

Facebook<https://www.facebook.com/pages/Geolyse-Pty-Ltd/136079453130271> |
LinkedIn<http://www.linkedin.com/groups/Geolyse-3865253>
.....

Latisha Ryall

From: Tim Riley <timothy.riley@bogan.nsw.gov.au>
Sent: Wednesday, 11 December 2013 4:11 PM
To: Andrew Brownlow
Subject: RE: 213340 - Consolidate Power Projects - CEMP

Good afternoon Andrew
Council raises no objection to the Consolidate Power Project – CEMP.

Timothy J Riley
Manager Development & Environmental Services

Ph: 02 68359000
Fax:02 68359011
Mobile: 0419607401
email: timothy.riley@bogan.nsw.gov.au
Web Site: www.bogan.nsw.gov.au

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Wednesday, 11 December 2013 3:07 PM
To: Tim Riley
Subject: FW: 213340 - Consolidate Power Projects - CEMP

Andrew Brownlow
Project Manager CEnvP
Geolyse Pty Ltd
154 Peisley St
PO Box 1963
Orange NSW 2800
Ph: 02 6393 5000
Fx: 02 6393 5050
Mob: 0417 210 253
Email: abrownlow@geolyse.com
Web: www.geolyse.com

Facebook | LinkedIn

.....

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Monday, 2 December 2013 11:11 AM

To: 'timothy.riley@bogan.nsw.gov.au'
Cc: 'Orange Document Control'; 'Edwin Munian'
Subject: 213340 - Consolidate Power Projects - CEMP

Mr Timothy Riley
Manager Development and Environmental Services
Bogan Shire Council

Tim

Geolyse has worked with Consolidated Power Projects (CPP) in preparing a Construction Environmental Management Plan for its part of the works associated with AGL's Nyngan Solar Plant project. AGL (the proponent) has awarded works to two principal contractors. First Solar are building the farm arrays, whilst CPP is constructing the sub-station (within the approved farm site) and the overhead transmission line connection. The CEMP attached is for CPP and concentrates on those specific works which it will be undertaking (ie. zone sub-station and overhead line).

The Minister's Consent Conditions required preparation of a CEMP for submission and sign-off to the Department of Planning. Within this consent conditions, there is reference to the need to prepare the CEMP in consultation with NOW. Specifically, condition C2 states:

> *The Applicant shall prepare and implement a Construction Environmental Management Plan in consultation with Council ……*

We have also been advised that the Department requests evidence that this consultation has occurred. To this end, please see attached a copy of the CEMP provided for your comment. Please also note that in addition to Council the CEMP must be prepared in consultation with a range of other state government agencies. Consultation with these agencies is underway in parallel.

Finally, and acknowledging this is no doubt one of may things on your plate, the construction program has a January start and to this end any comment you may have would be greatly appreciated as soon as is possible at your end. Of course if there is anything further we can provide that may help expedite the consultation process please do not hesitate to give me a call.

Please also note that the Traffic Managment Plan for CPP's works must also be prepared in consultation with Council. We are working on this TMP and will forward to Council as soon as it is ready.

With thanks and regards

Andrew

Andrew Brownlow
Project Manager CEnvP
Geolyse Pty Ltd
154 Peisley St
PO Box 1963
Orange NSW 2800
Ph: 02 6393 5000
Fx: 02 6393 5050
Mob: 0417 210 253
Email: abrownlow@geolyse.com
Web: www.geolyse.com

Facebook | LinkedIn

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Appendix D – Register of Project Forms

The table below provides a list of all the documents referenced in this Work Health Safety and Environmental Management Plan.

These documents are provided below. The completed forms, templates, plans, registers, etc. prepared for this project will be filed in the project folder.

FRM-A003 Meeting Agenda Template 43
FRM-C014 Weekly Construction Report Template 43
FRM-C028 Client Monthly Report Template 44
FRM-C040 Waste Disposal Register 66, 97
FRM-C041 Weekly Environmental Review Log 68
FRM-C063 Site Weekly Review Log 25
FRM-G001 Erosion and Sediment Control Plan 65, 66, 68, 102, 103
FRM-G002 Waste Management and Minimisation Assessment 65, 97, 98
FRM-G003 Spill Response Kit Checklist 103
FRM-G004 Emergency Spill Response Plan 27, 104
FRM-G005 Project Environmental Rules 45
FRM-G006 Spill Response Equipment Selection Assessment 103
FRM-G008 Pre-Clearance Survey Assessment 98
FRM-G009 Notification of Works 108
FRM-G010 Cultural Heritage Find Record 116
FRM-G012 Dewatering Assessment 102, 103
FRM-H002 Training Request Form 52
FRM-M002 Continuous Improvement Notice 26, 44
FRM-S001 Incident Investigation Report Form 40
FRM-S002 Hazard Report Form 47
FRM-S003 Witness Report 40
FRM-S018 Hot Work Permit 36
FRM-S020 Hazardous Substance and Dangerous Goods Assessment 38, 39
FRM-S027 Daily SWMS Review Log 46, 47
FRM-S031 Hazard and Risk Assessment Register 26, 37
FRM-S108 Emergency Response Plan-Elevated Work Platforms 27
FRM-S109 Emergency Response Plan-Plant from Electrical Conductors 27
FRM-S110 Emergency Response Plan-Personnel from Electrical Conductors 27
FRM-S111 Emergency Response Plan-From Site 27
FRM-S112 Emergency Response plan-Travelling to and From Site 27
FRM-S113 Emergency Response Plan-Bush Fire 27, 29, 37
FRM-S114 Emergency Response Plan-Confined Spaces 27

FRM-S115 Emergency Response Review 27
FRM-S117 Emergency Contact Details 36, 37
FRM-S123 Mobile Plant Inspection Form 98, 100
FRM-S124 Mobile Plant Register 100
FRM-S135 Project Specific Induction 52
FRM-S136 Project Induction Declaration 23, 52, 53
FRM-S137 Project Induction Register 53
FRM-S141 Environmental and Health Surveillance Form 100, 105
FRM-S142 Emergency Requirements Assessment Form 26, 36
FRM-S145 Fire Fighting Equipment Inspection Register 36
FRM-S149 Hot Work Permit Register 36
REG-G001 Aspects and Impacts Register 45
REG-G002 Environmental Legislative Library 42
REG-H002 Qualifications and Training Matrix 52
REG-H003 Competency Register 52
REG-M004 Audit Register 25
REG-M005 Continuous Improvement Notice Register 26
REG-S002 Master Register of Substances 38

Appendix E - Traffic Management Plan

TRAFFIC MANAGEMENT PLAN
NYNGAN SOLAR PLANT
SUB-STATION AND TRANSMISSION LINE CONNECTION WORKS

PREPARED FOR
CONSOLIDATED POWER PROJECTS

JANUARY 2014

TRAFFIC MANAGEMENT PLAN

NYNGAN SOLAR PLANT

SUB-STATION AND TRANSMISSION LINE CONNECTION WORKS

PREPARED FOR:

CONSOLIDATED POWER PROJECTS

JANUARY 2014

GEOLYSE

POSTAL ADDRESS PO BOX 1963 ORANGE NSW 2800
LOCATION 154 PEISLEY STREET ORANGE NSW 2800
TELEPHONE 02 6393 5000 **FACSIMILE** 02 6393 5050
EMAIL ORANGE@GEOLYSE.COM **WEB SITE** WWW.GEOLYSE.COM

Report Title:	*Traffic Management Plan*
Project:	*Nyngan Solar Plant*
Client:	*Consolidated Power Projects*
Report Ref.:	*213340_REO_001H.docx*
Status:	*Final*
Issued:	*7 January 2014*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report is prepared for the exclusive use of Consolidated Power Projects for the land described herein and is not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

TABLE OF CONTENTS

INTRODUCTION 1

1.1 BACKGROUND 1
1.2 PROJECT APPROVAL 2
1.3 PURPOSE OF REPORT 2
1.4 RELATIONSHIP TO FIRST SOLAR TMP 3
1.5 LEGISLATION 3
1.6 CONSULTATION 3
1.6.1 RMS AND BOGAN SHIRE COUNCIL 3
1.6.2 BSC TRAFFIC COMMITTEE 3

TRAFFIC DETAILS 4

2.1 PROJECT SITE ACCESS 4
2.2 VEHICLE TRAFFIC TYPES 4
2.3 TRAFFIC VOLUMES 4

MANAGEMENT MEASURES 8

3.1 MANAGEMENT AND COORDINATION OF VEHICLES 8
3.2 HAULAGE VEHICLE SCHEDULING 11
3.3 DETAILS OF INTERSECTION IMPROVEMENT WORKS 13
3.4 STATUTORY RESPONSIBILITIES 13
3.4.1 ROADS ACT 1993 13
3.4.2 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007 13
3.4.3 NSW ROAD NOISE POLICY 13
3.5 MEASURES TO MINIMISE INTERACTIONS 14
3.6 SCHOOL BUS SAFETY 14
3.7 REDUCTION OF CONSTRUCTION TRAFFIC 14
3.8 SCHEDULING OF CONSTRUCTION TRAFFIC OUTSIDE SCHOOL BUS HOURS 14
3.9 SAFETY OF LIVESTOCK 14
3.10 SPEED LIMITS 14
3.11 DRIVER BEHAVIOURAL REQUIREMENTS 14
3.12 RESTRICTED ACCESS VEHICLES 15

PLAN OPERATION 16

4.1 ROLES AND RESPONSIBILITIES 16
4.2 TRAFFIC MANAGEMENT PLAN AUDIT 16
4.3 TRAFFIC MANAGEMENT PLAN REVIEW 16
4.4 COMPETENCE TRAINING AND AWARENESS 16

CUMULATIVE IMPACTS 17

5.1 INTRODUCTION 17
5.2 CUMULATIVE IMPACTS 17

REFERENCES 20

FIGURES

Figure 1: Proposed Site and Intersection Locations 1
Figure 2: Expected Truck Route- Adelaide to Site 10
Figure 3: Expected Truck Route- Sydney to Site 10
Figure 4: Expected Truck Route- Newcastle to Site 11
Figure 5: First Solar Monthly Vehicle Movements 18
Figure 6: CPP Monthly Vehicle Movements 19
Figure 7: Cumulative Monthly Vehicle Movements 19

TABLES

Table 2.1a – Traffic Volumes 5
Table 2.1b – Peak Traffic Movements consolidated by Type and Direction 6
Table 2.2 – Total Traffic Generation 7
Table 3.1 – Summary of School Bus Pick-Up and Drop-Off Hours 9
Table 4.1 – Traffic Management Plan Implementation 16
Table 5.1 – Cumulative Monthly Construction Vehicle Movements 18

APPENDICES

APPENDIX A
Signed RMS Response

Introduction

1.1 BACKGROUND

The Nyngan Solar Plant project site is located in western NSW, approximately 10 kilometres west of the township of Nyngan. The project site is located within the Bogan Shire Council (BSC) local government area and is comprised of rural land. The project site is located on a land parcel north of the Barrier Highway (Lot 34, DP 751328). See **Figure 1** below for the location of the project site and the proposed intersection on the Barrier Highway.

During both construction and operation the project site will be accessed from the Barrier Highway. The Barrier Highway is an important east-west link in outback NSW, which commences in Nyngan and continues through to the South Australian border.

The Barrier Highway, which is a sealed single carriageway public road, is suitable for use by heavy vehicles. The construction and operation of the proposed solar plant is not anticipated to have any significant impact on traffic flows on the Barrier Highway, given that there would be a minimal increase in traffic volumes from construction and delivery vehicles. Other public roads in the study area are local roads that carry only minor volumes of traffic.

The information contained in this report refers specifically to the construction of the electrical sub-station and overhead transmission line connection.

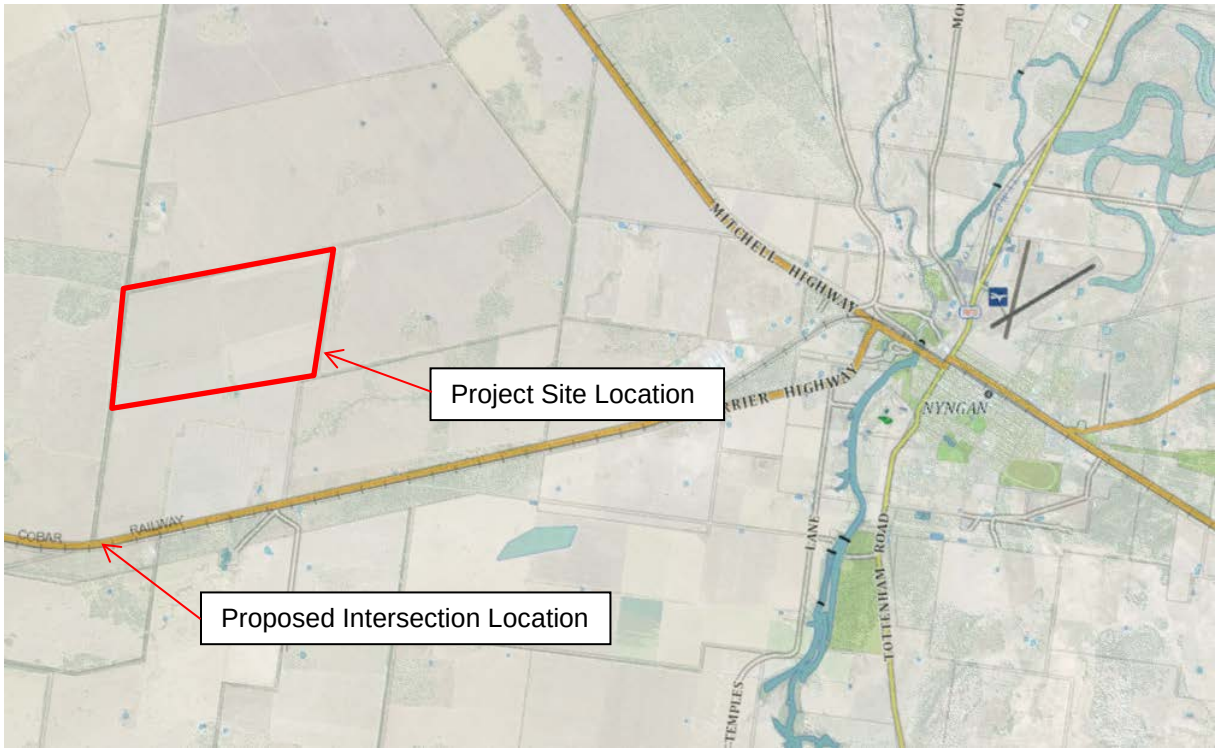


Figure 1: Proposed Site and Intersection Locations

1.2 PROJECT APPROVAL

The Nyngan Solar Plant was granted Project Approval by the NSW Department of Planning and Infrastructure (Application No.: SSD – 5355) on July 15 2013. The Condition C3 (e) of the Development Consent requires a Traffic Management Plan (TMP) to be prepared and implemented as part of the Construction Environmental Management Plan (CEMP).

Schedule 1, Part C Environmental Management, Reporting and Auditing Clause C3 (e) of the Project Development Consent states:

"a Traffic Management Plan to manage traffic conflicts that may be generated during construction. In preparing the Plan, the Applicant shall consult with the Council and RMS. The Plan shall address the requirements of the relevant road authority and shall include, but not necessarily be limited to:*

i. *the origin, number, size, frequency and final destination of vehicles entering/exiting the site;*
ii. *loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles;*
iii. *the management and coordination of the movement of construction and personnel vehicles to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables (particularly the Miandetta to Nyngan route);*
iv. *scheduling of haulage vehicle movement to minimise convoy length or platoons. Consideration should be given to minimise the route length for road transport of all size and over mass loads to minimise the impact on traffic;*
v. *details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS Supplements;*
vi. *demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with;*
vii. *details of measures to minimise interactions between the development and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc;*
viii. *procedures to manage construction traffic to ensure the safety of the school bus and its passengers, inclusive of driver training and procedures to ensure the adequacy of the management measures;*
ix. *implement all reasonable and feasible measures to reduce the construction related traffic on the Barrier Highway and public roads between the site and the highway;*
x. *schedule construction vehicle movements on site to occur outside school bus hours;*
xi. *procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock;*
xii. *speed limits to be observed along routes to and from the site and within the site and access road; and*
xiii. *details of the expected behavioural requirements for vehicle drivers travelling to and from the site and within the site.*

*RMS refers to Roads and Maritime Services.

1.3 PURPOSE OF REPORT

The TMP has been prepared to provide details and procedures to manage traffic conflicts that may be generated during activity associated with the construction of the sub-station and overhead transmission line connection. The works described above are to be undertaken by Consolidated Power Projects (CPP).

It will ensure that traffic generated during this construction effort will move in a safe manner with least impact on other road users.

The implementation of the TMP will minimise the traffic related risks for the project employees, contractors, the general public and other vehicle operators on the wider road network surrounding the site. Specific detail regarding traffic flow and traffic management measures is detailed in **Section 2** and **Section 3** of this report.

1.4 RELATIONSHIP TO FIRST SOLAR TMP

Works associated with the Nyngan Solar Plant are to be undertaken by two principal contractors.

First Solar (Australia) Pty Ltd will be constructing the solar arrays and associated infrastructure. Consolidated Power Projects (CPP) is responsible for construction of the sub-station and overhead transmission line connection servicing the solar farm.

A TMP was prepared for First Solar's works and was approved by RMS (refer **Appendix A**).

This TMP has been prepared for CPP's construction activities associated with the sub-station and overhead transmission line connection. Vehicle movements associated with these activities are presented in **Section 2**.

For a short period (January to July 2014) both First Solar and CPP construction activities on the Nyngan Solar Plant site will occur simultaneously. For this reason, **Section 5** of this TMP provides traffic data that captures the cumulative impact of these simultaneous construction works over this six month period.

The data presented demonstrates that traffic movements associated with First Solar's construction activities are significantly higher than Consolidated Power Project's traffic and in this context; the CPP TMP is supplementary to the First Solar TMP.

1.5 LEGISLATION

In NSW the *Road Transport Act 2013* (the Act), governs the safe management of road transport and will be complied with and referred to during construction of the project.

In addition to the Act the following Standards and Guidelines will guide traffic management for the project:

- Austroads Guide to Road Design;
- RMS Supplements to Austroads Guide to Road Design; and
- Australian Standard AS1742- Manual of Uniform Traffic Control Devices.

1.6 CONSULTATION

1.6.1 RMS AND BOGAN SHIRE COUNCIL

The TMP has been developed in consultation with Roads and Maritime Services (RMS) and Bogan Shire Council.

1.6.2 BSC TRAFFIC COMMITTEE

Proposed details of the Traffic Management signage to be installed as part of this plan will be forwarded to the BSC Traffic Committee for discussion.

Traffic Details

2.1 PROJECT SITE ACCESS

The site access will be constructed off the Barrier Highway. Vehicle access to the site will be via two (2) routes:

i. To/from Nyngan via the Barrier highway; and

ii. To/from Cobar via the Barrier Highway.

An intersection is to be constructed on the Barrier Highway to provide project site access off the Barrier Highway. The Barrier Highway (National Route A32) is a two lane two way sealed road under the control of RMS. The Barrier Highway is signposted at 110km/hr in this section. The Nyngan-Cobar Railway line runs parallel to the Barrier Highway on the southern side of the Highway at the site access location.

The overhead transmission line is to be constructed from the proposed sub-station within the Nyngan Solar Plant site south across the Barrier Highway and Nyngan-Cobar Railway line to the existing transmission line approximately 1.3km south of the Barrier Highway. Transmission line construction works south of the Nyngan-Cobar Railway line will access that area from either Neeroc Road or Rutherglen Road. Based on the number of proposed power poles south of the railway line relative to the total number of power poles to be installed, it is expected that approximately 40% of construction vehicle movements related to the overhead power line construction will not use the proposed intersection on the Barrier Highway.

2.2 VEHICLE TRAFFIC TYPES

The vehicle types accessing the site during construction would include:

- Light vehicles such as passenger vehicles and light delivery trucks;
- Heavy vehicles such as large rigid trucks and semi–trailers; and
- Oversize and overweight vehicles used for the delivery of major plant and infrastructure.

2.3 TRAFFIC VOLUMES

The anticipated traffic generated by the construction of the sub-station and transmission line is summarised in **Table 2.1a** below whilst **Table 2.1b** provides a consolidation of peak movements by vehicle type and direction of approach. The total numbers of trucks listed in **Tables 2.1a&b** represent the expected maximum volume of traffic movements for each component. The total vehicle movements listed in **Table 2.1a&b** represent the expected maximum volume of traffic movements for each component.

The approved site hours, for standard construction, are between 0700 hours and 1800 hours Monday to Friday and 0800 hours to 1300 hours on Saturday. The peak hourly traffic volumes are expected between 0600 and 0700 hours and 1800 and 1900 hours Monday to Friday and 0700 and 0800 and 1300 to 1400 on Saturday. Standard work hours and the types of vehicles that will be travelling in this period are outlined further in **Section 3.1.**

Table 2.1a – Traffic Volumes

Type	Origin	Size/Type of Vehicle	Heading to Site *(Turn-in)*	Heading from Site (Turn-out)	Average Daily Frequency	Total Number of Trucks
Utility (1 tonne)- to/from site	Adelaide	Light vehicle with GVM <4.5t	Eastbound *(Left)*	Westbound *(Right)*	0.04vpd/0.08vmpd	NA
Utility (1 tonne)- to/from site	Nyngan	Light vehicle with GVM <4.5t	Westbound *(Right)*	Eastbound *(Left)*	12vpd/24vmpd*	NA
Light Truck- to/from site	Nyngan	20t max	Westbound *(Right)*	Eastbound *(Left)*	3vpd/6vmpd	930
CPP Taxi Truck	Site/Dubbo	20t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.28vpd/0.57vmpd	44
Semi-Trailer	Site/Dubbo	42.5t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.19vpd/0.39vmpd	30
Concrete Truck	Nyngan	30t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.10vpd/0.20vmpd	16
Low Loader Float	Dubbo	40t max <19m	Westbound *(Right)*	Eastbound *(Left)*	2vpd/4vmpd over 5 day mobilisation and de-mobilisation periods	10
OD Float (>45tonne)	Sydney/Adelaide	>45t >19m	Westbound *(Right)*/Eastbound *(Left)*	Eastbound *(Left)*/ Westbound *(Right)*	0.04vpd/0.08vmpd	6
Peak Daily Movements (based on the sum of Deliveries (0.67), Employees/Staff (30) and Construction Equipment (4)). **Peak Hourly Movements** (based on 12x Utilities and 3x Light trucks).					**35vmpd** **15vph**	

Source: Consolidated Power Projects. *vpd-vehicles per day, vmpd- vehicle movements per day, vph- vehicles per hour

Table 2.1b – Peak Traffic Movements consolidated by Type and Direction

Type	Origin	Size/Type of Vehicle	Heading to Site *(Turn-in)*	Heading from Site (Turn-out)	Average Daily Frequency	Total Number of Vehicle Movements
Peak Daily Movements						
	Adelaide	Light vehicle with GVM <4.5t	Eastbound *(Left)*	Westbound *(Right)*	0.04vpd/0.08vmpd	36vmpd
	Adelaide	>45t >19m	Eastbound *(Left)*	Westbound *(Right)*	0.02vpd/0.04vmpd	
				Total (Eastbound)	**0.06vpd/0.12vmpd**	
	Nyngan	Light vehicle with GVM <4.5t	Westbound *(Right)*	Eastbound *(Left)*	12vpd/24vmpd*	
	Nyngan	20t max	Westbound *(Right)*	Eastbound *(Left)*	3vpd/6vmpd	
	Site/Dubbo	20t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.28vpd/0.57vmpd	
	Site/Dubbo	42.5t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.19vpd/0.39vmpd	
	Nyngan	30t max <19m	Westbound *(Right)*	Eastbound *(Left)*	0.10vpd/0.20vmpd	
	Dubbo	40t max <19m	Westbound *(Right)*	Eastbound *(Left)*	2vpd/4vmpd over 5 day mobilisation and de-mobilisation period	
	Sydney	>45t >19m	Westbound *(Right)*	Eastbound *(Left)*	0.02vpd/0.04vmpd	
				Total (Westbound)	**17.59vpd/35.18vmpd**	
Peak Hourly Movements						
6-7am	Nyngan	Utility (1 tonne)- to/from site	Westbound *(Right)*	N/A	12vpd	15vmpd
	Nyngan	Light truck	Westbound *(Right)*	N/A	3vpd	
6-7pm	Site	Utility (1 tonne)- to/from site	N/A	Eastbound *(Left)*	12vpd	15vmpd
	Site	Light truck	N/A	Eastbound *(Left)*	3vpd	

The current project schedule has construction commencing in January 2014 and completion in July 2014 giving an expected maximum of 155 construction days (assuming five and a half working days per week).

It should be noted that heavy vehicle movements will be scheduled outside of the hours of peak daily movements to minimise interaction between staff/employee movements and deliveries.

The total expected traffic generation is detailed in **Table 2.2** below.

Table 2.1 – Total Traffic Generation

Vehicle Type	Total Movements
Light vehicle with GVM <4.5t	3,726
20t max <19m	974
30t max <19m	16
40t max <19m	10
42.5t max <19m	30
>45t >19m	6
Total	**4,762**

Management Measures

3.1 MANAGEMENT AND COORDINATION OF VEHICLES

Standard work hours are expected to be Monday to Sunday, 7am to 6pm. This section outlines how CPP intends to manage the transport of deliveries and employees so as to minimise vehicle movements and reduce the impact to the Nyngan town. The expected movements of construction vehicles, subcontractor vehicles and personnel vehicles are shown in **Table 2.1a** above. Construction personnel will arrive in Nyngan by private or work vehicle. Workers will then travel to and from the site on a day to day basis by light vehicle.

The Risk Mitigation for journeys to and from the site includes:

- Systems shall be in place to ensure that risks associated with vehicle journeys are identified managed and controlled, including Journey Management Plan (JMP) when applicable.

- The JMP shall include but not be limited to an effective communication system, journey monitoring at both ends of the journey, environmental risks, fatigue management and competency

Employee Transport to Site

The majority of CPP construction workers and subcontractors will be accommodated at the Nyngan Caravan Park.

As CPP will have a work force of 9 people and our subcontractors will have a work force of 25 people, we don't expect to impact on the local traffic flow. Thirty three out of thirty four CPP staff will be living at the caravan park. This will allow for convenient carpooling, which will maximise CPP vehicle usage and will therefore reduce the number of vehicles on the road.

CPP employees will typically complete a maximum shift of 21 days on site, after which they rotate out of town and return home. The CPP workforce will be supplied via a fly-in-fly-out (FIFO) arrangement from Dubbo Airport. However, it should be noted that several CPP staff members will relocate with their families to Nyngan for the duration of the project, they therefore they will not be making this journey.

CPP intends on utilizing a local Dubbo Civil Contractor for the civil works and Over Head Line Construction. The Civil Contractor will work a 5.5 day roster per week and drive back to Dubbo for their rest days.

CPP will manage the transport of workers and subcontractors and minimise the vehicle movements by using carpooling, carpooling will maximise the number of people per vehicle movement and limit the number of vehicles on the road:

1. Workers will be responsible for their own breakfast and dinner within their caravan's / cabins. All workers will bring a packed lunch to site, so as to maximise tool time and minimise vehicle movements to and from site.

2. Vehicle movements to and from the construction site (0630 to 0645 and 1800-1815) will be via 12 utilities and 3 light trucks.

3. Vehicle movements to and from the Dubbo airport will be company vehicles.

4. Our civil contractors will drive back to Dubbo in their company vehicles.

CPP staff and management will be responsible for four vehicles, in which three will be kept in the caravan park, the other vehicle will be kept at the Site Managers residence. Our subcontractors will keep their 8 utilities and 3 light trucks at the caravan park and they will be parked in their designated parking spots associated with their accommodation.

School Bus Route and Schedule

The vehicles that will ferry personnel to and from site will be scheduled to occur outside of the school bus pick-up and drop-off hours. Two school bus operators have been identified in the Nyngan area, per **Table 3.1**.

Table 3.1 – Summary of School Bus Pick-Up and Drop-Off Hours

Operator	Service	School Pick-Up/Drop-Off Hours
Mr Rex Vane	Nyngan – Miandetta via Barrier Highway	7:50am to 8:35am 3:25pm to 4:10pm
WW, DT and JL Powell	Nyngan – Gilgai Road via Barrier Highway	8.15am to 8:30am 3.30pm to 3:45pm

Harvest Trucks Schedule

CPP's expected delivery schedule proposes that most of the equipment will be delivered between March-April 2014. CPP's peak construction movements are expected to occur between 6-7am and 6-7pm. As a result CPP do not believe our construction traffic movements will have an impact on harvest vehicles.

Major Suppliers

CPP has finalized the material delivery schedule for this project with all Long-Lead time materials already having been procured. It is anticipated that our major deliveries will fall within March-April 2014.

Our major material delivery schedule is as follows:

- Power Transformer (Procured from Thailand, will be transported from Newcastle to Nyngan. Delivery in April);
- Current Transformer and Voltage Transformers (Procured from Spain, will be transported from Sydney to Nyngan. Delivery in April);
- Dead-Tank Circuit-Breakers (Procured from Germany, will be transported from Sydney to Nyngan. Delivery in March);
- Isolators (Procured from Sydney); and
- Control Buildings (Procured from Adelaide).

The expected routes for truck movements from Adelaide, Sydney and Newcastle to site are shown below in **Figures 2, 3 and 4** respectively.

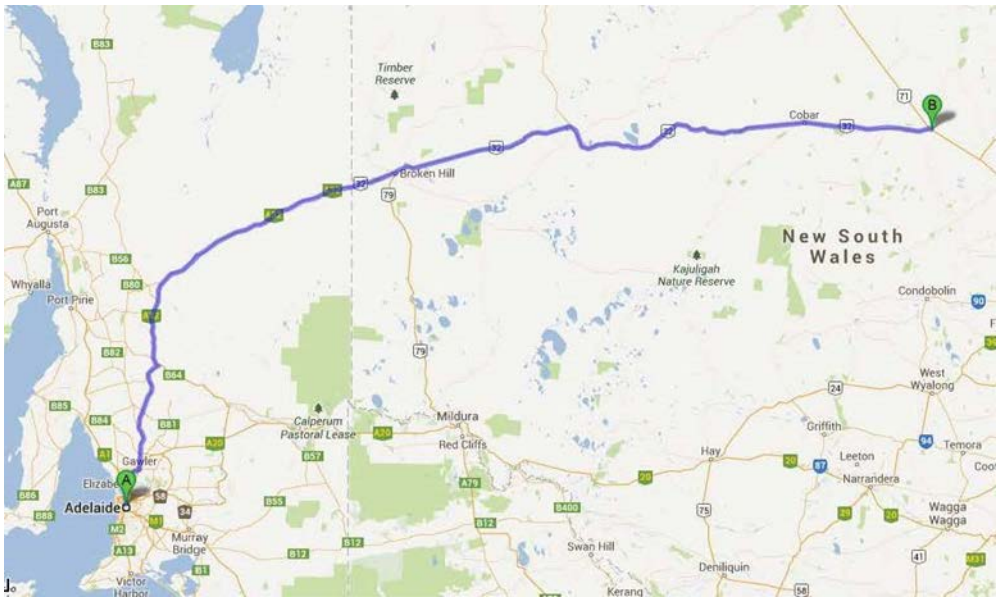


Figure 2: Expected Truck Route- Adelaide to Site

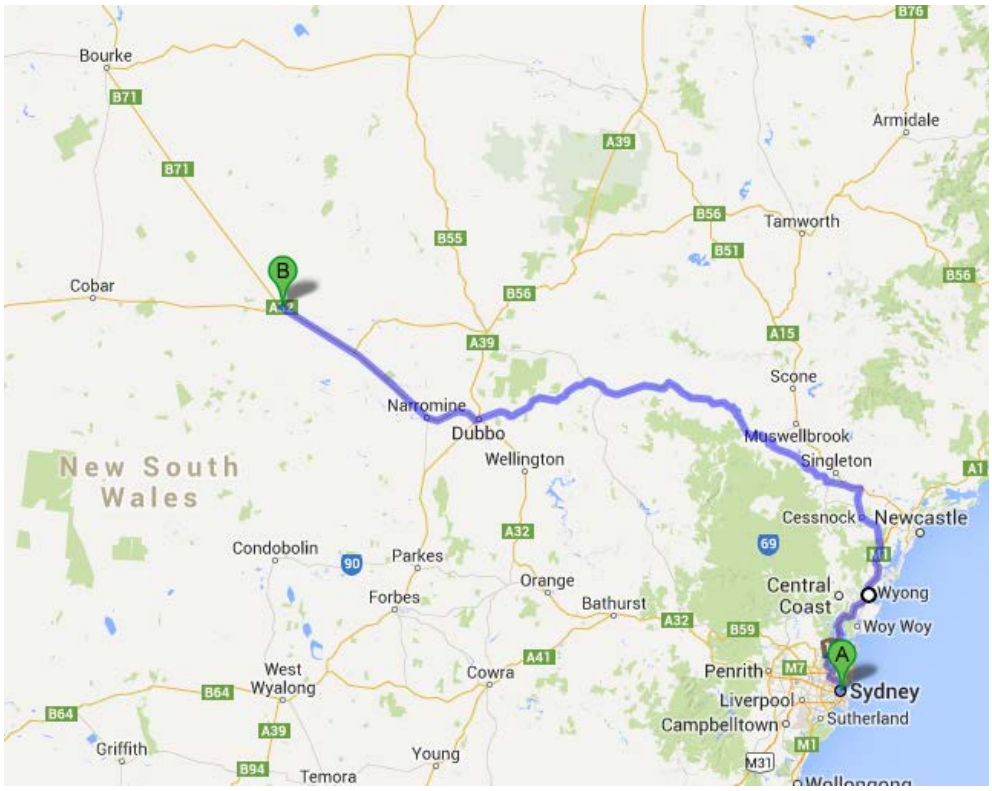


Figure 3: Expected Truck Route- Sydney to Site

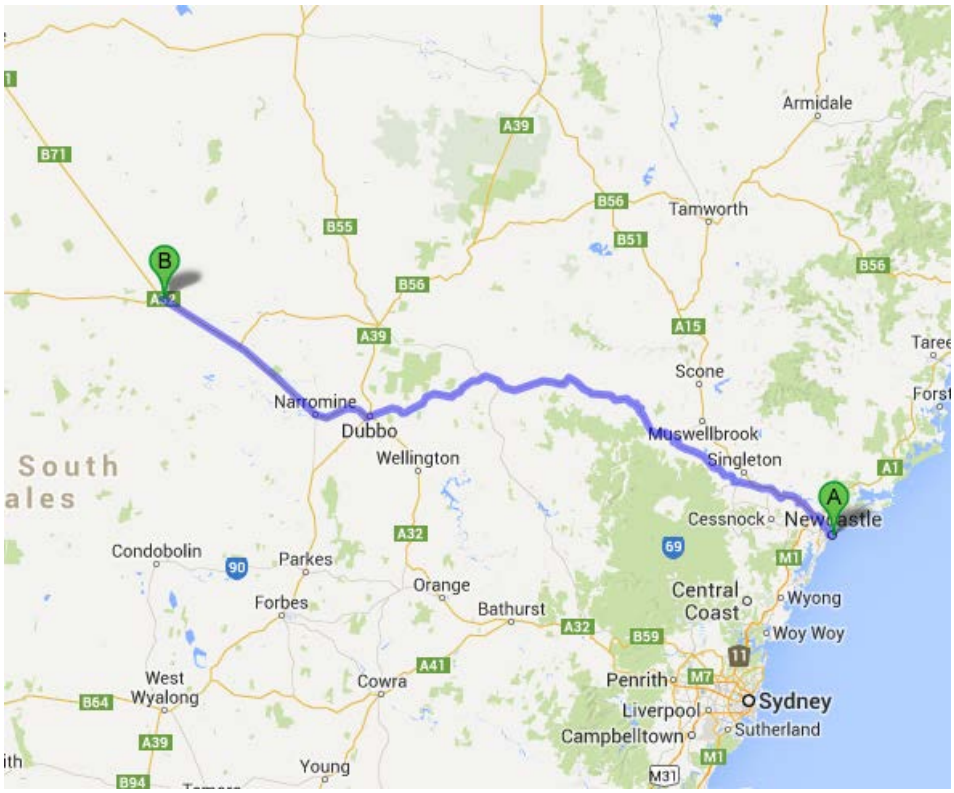


Figure 4: Expected Truck Route- Newcastle to Site

Vehicle Logistics and Co-Ordination to Site

CPP are experienced Project Managers and will ensure all of our vehicles will arrive to site in an orderly manner both on a daily basis and in meeting the scheduled material delivery timeframes.

CPP scheduled peak traffic movements will not have an impact on other motorists or emergency vehicles.

3.2 HAULAGE VEHICLE SCHEDULING

Haulage of materials and equipment to the site will be scheduled to arrive and depart from the construction site at different times coinciding with the construction program. The limited number of deliveries to site (62 in total) equates to 0.4 deliveries on average per day over the construction period. As a result the possibility of convoys or platoons forming is considered to be very low.

Logistics of Site Deliveries

As mentioned above, CPP are experienced Project Managers and we are very familiar with the suppliers we use as well as the various transportation options which are available for transportation of our goods. CPP will aim to ensure that all our equipment is procured from a select group of suppliers thereby synergizing our relationship with transportation companies and suppliers which will in turn link our supply chain and maximize transportation volumes, which inevitably results in fewer transportation loads and lower costs.

All of the suppliers used by CPP ensure that our quality requirements are met by transporting our equipment safely, efficiently and on time since CPP ensure our suppliers coordinate themselves efficiently with the transportation companies to ensure the goods are transported safely to site within the required timeframes.

Driver Code of Conduct and Site Induction

The driver code of conduct is regulated by the NSW Code of Practice for Long Haul Drivers. CPP Logistics will schedule the acceptance of freight, but CPP does not hire drivers and relies on the freight companies to manage their drivers with legislative requirements, log book entries, verification of licenses and so on.

CPP has driver behavioural expectations and a site delivery process, which includes:

- Engagement of local drivers to ensure familiarity with the roads;
- Planned layover areas defined in advance by Project Management;
- Directions of approach to site are documented and specified in advance to the freight companies;
- Arrival at pre-determined and approved time with logistics;
- Driver site induction, including security gate process; and
- Logistics will escort all delivery vehicles to laydown areas.

An example of a typical CPP site induction for delivery drivers is summarized below.

Requirements Prior to Accessing Site

Prior to accessing site, the Non-Inducted Delivery Driver's site contact shall complete the following with the driver:

- Site Visitor's induction;
- Pre-task hazard assessment (e.g. JHA) and implementation of controls; and
- Communication of the intended travel route on site, speed limits and road rules, site contact/escort name and contact number, and any work area specific hazards.

General Requirements

The non-inducted delivery driver shall be escorted at all times when travelling to and from the site access point to any pick up or drop off point.

The completed visitor induction and attached pre-task hazard assessment and access/escort details shall be recorded and retained on the project site.

A load/unload plan and pre-task hazard assessment (e.g. JHA) shall be completed for loading and unloading tasks on site and relevant controls implemented prior to the commencement of these tasks.

The non-inducted transport driver's licensing and competence to operate vehicle or vehicle mounted equipment shall be checked.

On arrival at the pick-up/drop off point, Non-inducted Delivery Drivers shall exit the vehicle and remain in a pre-defined safe area whilst loading and unloading of freight is occurring, unless they are performing one of the tasks as outlined below.

Non-inducted Transport Drivers shall not perform any tasks other than:

- Driving to the designated drop-off or pick-up location;
- Indicating the load distribution to CPP personnel;
- Operating vehicle and vehicle mounted loads for which they are competent, including discharge of material if required;
- Performing release of load restraints on incoming loads;
- Performing restraint of outgoing loads; and
- Completing any required paperwork.

Note: This process does not apply to: Persons delivering or collecting cash, mail or packages and/or conducting similar brief transactions

3.3 DETAILS OF INTERSECTION IMPROVEMENT WORKS

The intersection of the site access road and the Barrier Highway will undergo improvement works as specified by RMS and Council. RMS has specified that a minimum of 350m sight distance will be required in both directions on the Barrier Highway at the site entrance.

A Technical Note prepared by SKM (dated 10th December 2013) has detailed the proposed construction traffic during the enabling works and proposes the staged upgrade of the intersection on the Barrier Highway. At the time of preparing this plan SKM is preparing detailed design drawings in accordance with RMS requirements as shown in **Appendix A**.

3.4 STATUTORY RESPONSIBILITIES

The Environmental Impact Statement prepared in relation to the consent application for the proposed solar facility identified the relevant statutory framework within which the application was considered. Of relevance to the preparation of this TMP are the following statutory documents.

3.4.1 ROADS ACT 1993

The Barrier Highway is a classified road by virtue of section 47 of the *Roads Act 1993* (Roads Act) and therefore the RMS is the relevant roads authority for any works proposed to the highway. It is understood that AGL is directly liaising with RMS to provide the relevant design details for the upgrade of the construction site access intersection, as required by virtue of clause (e)(v) of Part C to Schedule 1 of the Project Approval.

Section 138 of the Roads Act provides that any works in, over or under a public road require the consent of the appropriate roads authority. AGL continue to liaise directly with RMS in relation to this consent.

3.4.2 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

The EIS identified clause 104 of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) relates to the traffic generating developments, which require further referral to the Roads and Maritime Services. The EIS concludes, on the basis that the development does not result in 200 or more motor vehicles per day, that clause 104 did not apply.

Table 2.1 of this TMP provides an updated summary of the predicted traffic volumes relating to the development. As traffic volumes are now lower than the numbers assessed in the EIS it follows that the triggers identified in clause 104 and Schedule 3 to the ISEPP for traffic generating do not apply to the development.

There is therefore no obligation to refer the matter to RMS in the context of traffic generating developments.

3.4.3 NSW ROAD NOISE POLICY

The EIS contains an assessment of the proposed development by reference to the NSW Road Noise Policy (RNP). This assessment concluded that, for the one potentially affected non-involved residence, exceedance of levels identified within the RNP is unlikely. The preparation of this TMP has not revealed any matters that require the review of this conclusion.

3.5 MEASURES TO MINIMISE INTERACTIONS

The intersection of the site access road and the Barrier Highway will undergo improvement works to minimise the impact of construction vehicles entering and exiting the site on other road users. During construction of the intersection upgrade works traffic will operate under a Road Occupancy Licence and a Traffic Control Plan (TCP). The TCP will include all signage, barriers, traffic controllers, traffic diversions and lighting required and will be developed in consultation with RMS and Council. The TCP will be prepared in accordance with Traffic Control at Worksites Manual by a suitably qualified and accredited person.

3.6 SCHOOL BUS SAFETY

All construction traffic movements will be scheduled outside of school bus hours (0750-0835 and 1525-1610), as per **Table 3.1**. In addition to this all personnel driving construction vehicles to and from the site will undergo a project induction which will include information on the management of traffic related issues (including school buses and passengers) while travelling to and from the site. A log will be kept at the site entrance detailing all traffic movements to and from the site. A regular review of the log will be undertaken to identify any vehicle movements during school bus hours.

3.7 REDUCTION OF CONSTRUCTION TRAFFIC

To reduce construction traffic on the Barrier Highway and surrounding public roads the following measures will be implemented:

- Workers will car pool in light vehicles to and from the site; and
- Heavy vehicles will be generally be used for transport of materials and equipment.

3.8 SCHEDULING OF CONSTRUCTION TRAFFIC OUTSIDE SCHOOL BUS HOURS

As mentioned above all construction traffic movements will be scheduled outside of school bus hours.

3.9 SAFETY OF LIVESTOCK

The construction site will be fenced with stock proof fencing; hence no interaction between construction traffic and livestock is expected.

3.10 SPEED LIMITS

As mentioned above all personnel driving vehicles to and from the site will undergo a project induction which will include information on the management of traffic related issues while travelling to and from the site. The induction will include the following points:

- Consideration and courtesy are essential when driving on public roads; and
- Speed limits must be strictly adhered to.

3.11 DRIVER BEHAVIOURAL REQUIREMENTS

As mentioned above all personnel driving vehicles to and from the site will undergo a project induction which will include information on behavioural requirements while travelling to and from the site. The induction will include the following points:

- Consideration and courtesy are essential when driving on public roads;

- Speed limits must be strictly adhered to;
- Drivers must adhere to any directions given by site personnel; and
- Drivers must adhere to maximum continuous driving times and rest breaks.

3.12 RESTRICTED ACCESS VEHICLES

Restricted Access Vehicles (RAV) will need to deliver plant and construction equipment to the site. Delivery of plant and equipment to the site using an RAV will need to consider the following:

- Appropriate permits being issued by RMS and the NSW Police;
- Use of escort vehicles as required;
- Provision of traffic controllers as required;
- Restriction of RAV deliveries to daylight hours (outside of school bus hours); and
- The delivery of large equipment will be coordinated with any known vehicular activity on the Barrier Highway or in the township of Nyngan.

Plan Operation

4.1 ROLES AND RESPONSIBILITIES

The roles and responsibilities for the implementation of the TMP are indicated in **Table 4.1** below.

Table 4.1 – Traffic Management Plan Implementation

Entity Role	Responsibility
Consolidated Power Projects	Implementation of the Traffic Management Plan during construction
All personnel	Follow all guidelines and Project Rules with respect to traffic management
Nyngan Solar Plant Manager	Implementation of the Traffic Management Plan during operation

4.2 TRAFFIC MANAGEMENT PLAN AUDIT

The TMP will be audited in accordance with the AGL Environmental Management Systems.

4.3 TRAFFIC MANAGEMENT PLAN REVIEW

The TMP will be reviewed in accordance with the AGL Environmental Management Systems.

4.4 COMPETENCE TRAINING AND AWARENESS

All personnel working on the project will undergo a project induction which will include information on the management of traffic related issues while travelling to and from the site. The induction will include the following points:

- Consideration and courtesy are essential when driving on public roads and the worksite;
- All employees will be required to comply with the onsite Vehicle Movement Plan (VMP) being prepared by Consolidated Power Projects; and
- Speed limits must be strictly adhered to.

After completing the induction workers will sign a statement of attendance and records of this will be kept in the site office.

Cumulative Impacts

5.1 INTRODUCTION

As noted in **Section 1.4**, for a short period (January to July 2014) both First Solar and CPP construction activities will occur simultaneously. This section of the TMP provides traffic data that captures the cumulative impact of these simultaneous construction works over this six month period.

5.2 CUMULATIVE IMPACTS

Total construction vehicle movements during the period January to July 2014 were collated for both First Solar and CPP. CPP vehicle movements were totalled on a monthly basis using the project program and vehicle information provided by CPP.

First Solar vehicle movements were provided by First Solar. First Solar staff car movements are expected to ramp up over the first 5 months of the construction phase, reaching a peak from June 2014 through to January 2015, and then ramping down in the final 5 months of the construction phase.

The cumulative monthly vehicle movements for the construction of the Nyngan Solar Plant are provided in **Table 5.1** below. The First Solar, CPP and cumulative monthly vehicle movements are also shown graphically in **Figures 5, 6 and 7** below.

The cumulative monthly vehicle movements peak in June 2014 with an expected total of 2,521 movements, translated to peak daily movements this equates to 84. The expected cumulative total construction vehicle movements for CPP and First Solar is 31,139.

The addition of CPP construction vehicle movements for the construction of the Nyngan Solar Plant result in an increase in peak daily movements during the period that both First Solar and CPP are on site. The combination of CPP and First Solar movements is not expected to have a significant impact on vehicle movements on the Barrier Highway or the surrounding road network.

Table 5.1 – Cumulative Monthly Construction Vehicle Movements

Month	CPP Heavy Vehicle Movements	CPP Light Vehicle Movements	First Solar Heavy Vehicle Movements	First Solar Light Vehicle Movements	Total Monthly Vehicle Movements
January-14	821	596	102	140	1659
February-14	159	596	198	840	1793
March-14	149	596	268	900	1913
April-14	149	596	322	1240	2307
May-14	149	596	512	1200	2457
June-14	149	596	536	1240	2521
July-14	214	149	550	1200	2113
August-14	0	0	548	1240	1788
September-14	0	0	538	1240	1778
October-14	0	0	550	1240	1790
November-14	0	0	534	1240	1774
December-14	0	0	524	1160	1684
January-15	0	0	546	1240	1786
February-15	0	0	474	1120	1594
March-15	0	0	308	1240	1548
April-15	0	0	180	900	1080
May-15	0	0	212	620	832
June-15	0	0	142	580	722

Source: CPP and First Solar

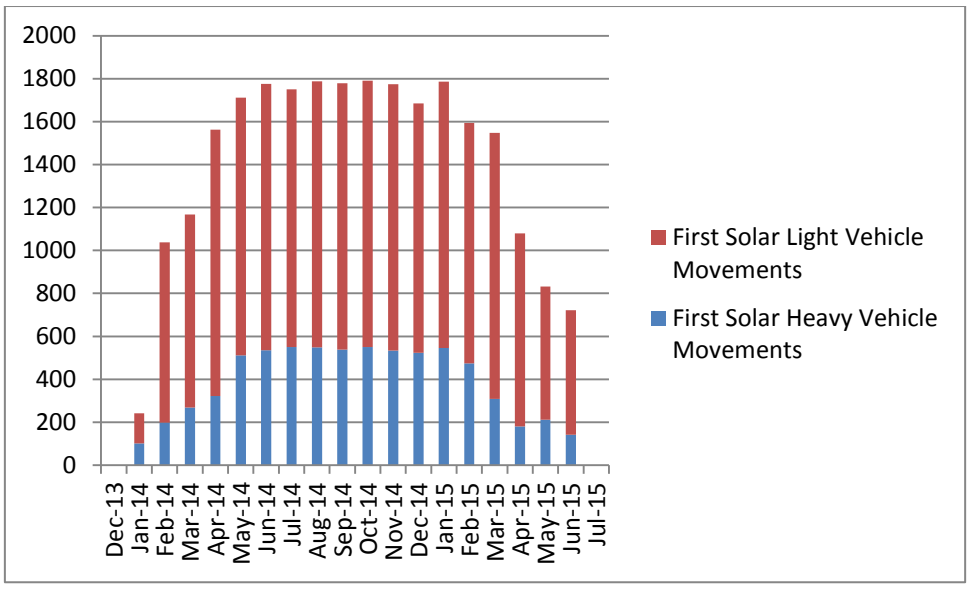


Figure 5: First Solar Monthly Vehicle Movements

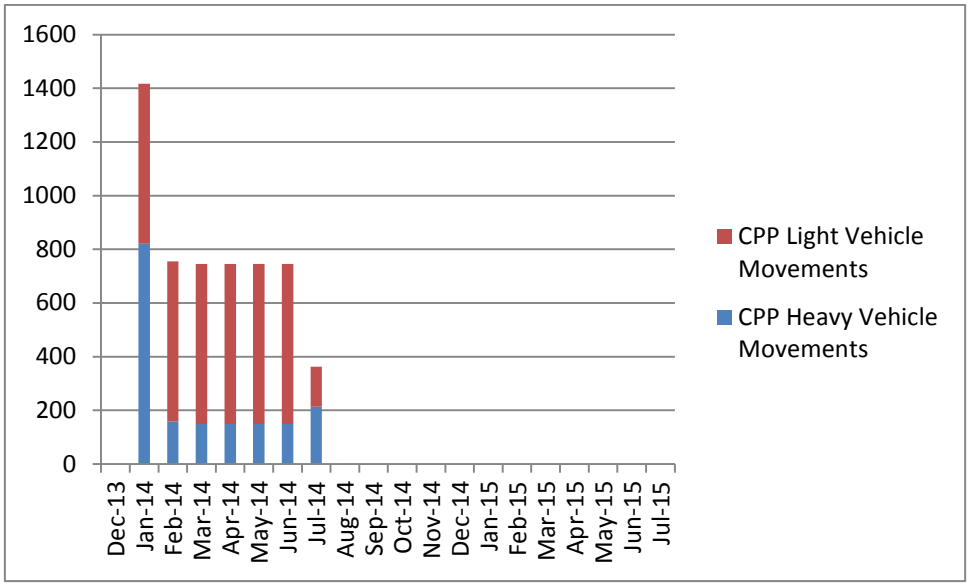


Figure 6: CPP Monthly Vehicle Movements

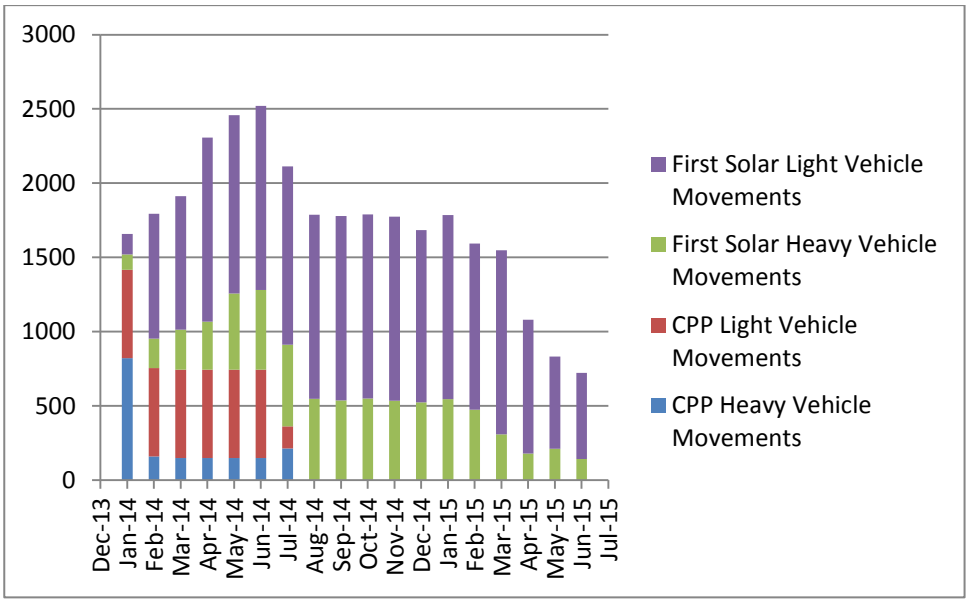


Figure 7: Cumulative Monthly Vehicle Movements

References

Nyngan Solar Plant Environmental Impact Statement, October 2012, NGH Environmental
Traffic Control at Worksites Manual- Issue I:2000 Roads and Traffic Authority of NSW
AUSTROADS Guide to Traffic Engineering Practice – Local Area Traffic Management
Guide to Traffic Generating Developments Roads and Traffic Authority of NSW
Traffic Management Plan Nyngan Solar Plant issued for First Solar Geolyse Pty Ltd, amended per AGL's instructions 9th December 2013.
RMS Letter (WST12/00103/10) Addressed to Mr Adam Mackett
NGH Environmental, December 2013. *Nyngan Solar Plant Staging Report*.
SKM Technical Note. Project No. HA01732.200 Rev 3. Dated 10th December 2013.

Appendix A

SIGNED RMS RESPONSE

WST12/00103/10

Mr Adam Mackett
Manager Power Development
AGL Energy Ltd
Level 22/101 Miller Street
NORTH SYDNEY NSW 2060

Dear Mr Mackett

SSD5355: Nyngan Solar Power Plant Project Transport Management Plan

Thank you for your email on 18 December 2013 forwarding a revised Transport Management Plan (TMP) prepared by Geolyse dated 18 December 2013 for the Nyngan Solar Plant Project to Roads and Maritime Services.

Roads and Maritime is disappointed that the revised TMP does not provide peak hour heavy vehicle movements or make intersection recommendations. The Technical Note prepared by SKM Consultants attached to the email recommends that any intersection provided include channelised left and right turning lanes, however this level of treatment is not supported by Roads and Maritime.

Notwithstanding the above and taking into consideration the revised traffic volumes, additional information and a Staging Report prepared by ngh Consultants dated December 2013, Roads and Maritime requires the following intersection treatments to be constructed prior to the commencement of each of the following stages provided in the above-mentioned staging report:

Stage 0

- The proposed access from the Barrier Highway to the Nyngan Solar Plant site shall be constructed in accordance with *Austroads Guide to Road Design: Part 4 Figure 7.4 'standard rural property access'* (copy attached) and any relevant Roads and Maritime Supplements. The access shall be sealed a minimum of 40 metres from the edge of the travel lane in the Barrier Highway, match existing road levels and not interfere with existing road drainage.

- Size C Gateway Truck (crossing or entering) Signs (W5-22) with 300 metre distance plates shall be provided 300 metres either side of the proposed access. The signs shall be erected and visible during construction and decommissioning stages and removed from the road reserve outside of these periods.

Stage 1

- Rural Channelised T-junction (Short) – [CHR(S)] is to be provided in accordance with Figure 7.6 of *Austroads Guide to Road Design 2010 - Part 4A: Unsignalised and Signalised Intersections* and *Roads and Maritime Supplements.*

  Note: The storage length of the protected right turn lane will need to accommodate the combine storage length of a 36.5 metre long road train and a standard passenger sedan.

- A basic left (BAL) turn treatment as shown in Figure 8.2 of the *Austroads Guide to Road Design: Part 4A* (copy attached) shall be provided at the access. The BAL facility will also need to be sealed.

- The width of the access road at the approach and connection to the Barrier Highway shall be wide enough to accommodate the simultaneous passing of turning road train vehicles. The access road shall be sealed a minimum of 40 metres from the edge of hold line.

These requirements are based on traffic volumes provided in the revised TMP. Roads and Maritime will monitor the traffic volumes during construction of the solar plant and should traffic volumes be greater than stated in this report, Roads and Maritime reserves the right to require a higher level intersection to service the development.

As previously advised, the Barrier Highway is a state road and the developer will be required to undertake private financing and construction of works on a road in which Roads and Maritime has a statutory interest. A formal agreement in the form of a Works Authorisation Deed (WAD) is required between the developer and Roads and Maritime prior to any of the above-mentioned works commencing. In this regard, revised drawings and plans of the above intersection treatments will need to be forwarded to Mr Alistair Lunn, Roads and Maritime Regional Maintenance Delivery Manager - Western, on telephone (02) 6861 1421 or email gai.mitchelson@rms.nsw.gov.au who will coordinate Roads and Maritime's response to design and construction activities associated with your project. Please use reference SF2012/048486 in all correspondence with Roads and Maritime relating to the project.

Further, a Road Occupancy Licence is required prior to any works commencing within 3 metres of the travel lanes in the Barrier Highway.

Should you require further information please contact Andrew McIntyre on (02) 6861 1453.

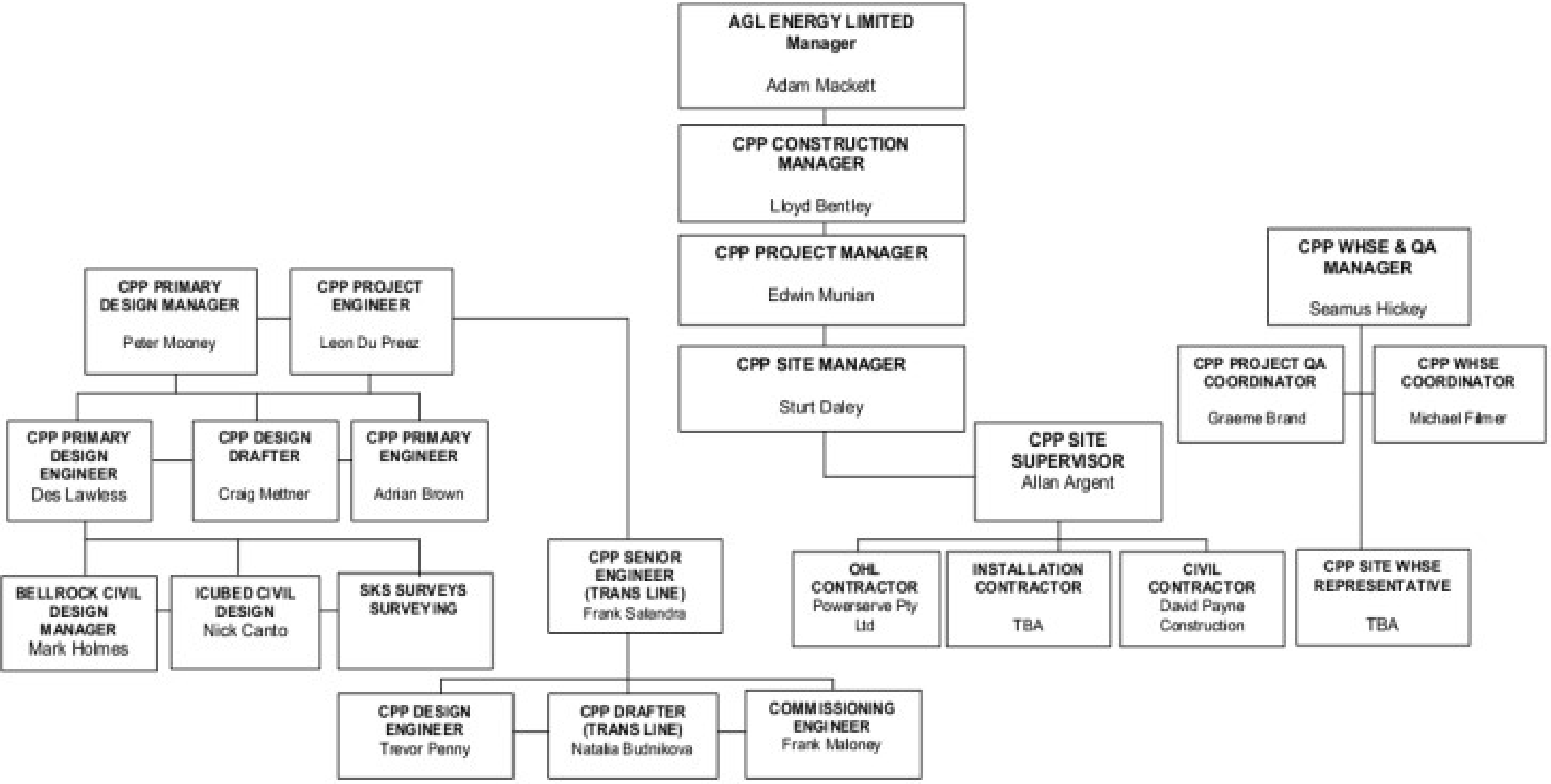
Yours faithfully

19 DEC 2013

Tony Hendry
Network & Safety Manager
Western

cc The Manager
Infrastructure Projects
Department of Planning & infrastructure
PO Box 39
SYDNEY NSW 2001

Appendix F – Project Organisation Chart


AGL ENERGY LIMITED
Manager
Adam Mackett
CPP CONSTRUCTION MANAGER
Lloyd Bentley
CPP PROJECT MANAGER
Edwin Munian
CPP SITE MANAGER
Sturt Daley
CPP WHSE & QA MANAGER
Seamus Hickey
CPP PROJECT QA COORDINATOR
Graeme Brand
CPP WHSE COORDINATOR
Michael Filmer
CPP PRIMARY DESIGN MANAGER
Peter Mooney
CPP PROJECT ENGINEER
Leon Du Preez
CPP PRIMARY DESIGN ENGINEER
Des Lawless
CPP DESIGN DRAFTER
Craig Mettner
CPP PRIMARY ENGINEER
Adrian Brown
CPP SITE SUPERVISOR
Allan Argent
BELLROCK CIVIL DESIGN MANAGER
Mark Holmes
ICUBED CIVIL DESIGN
Nick Canto
SKS SURVEYS SURVEYING
CPP SENIOR ENGINEER (TRANS LINE)
Frank Salandra
OHL CONTRACTOR
Powerserve Pty Ltd
INSTALLATION CONTRACTOR
TBA
CIVIL CONTRACTOR
David Payne Construction
CPP SITE WHSE REPRESENTATIVE
TBA
CPP DESIGN ENGINEER
Trevor Penny
CPP DRAFTER (TRANS LINE)
Natalia Budnikova
COMMISSIONING ENGINEER
Frank Maloney

Appendix G – Risk Assessment

Category	Step Number	Work Activity - A Chain of Tasks Necessary to Complete a Job	Related Hazards / Impacts	LIKELIHOOD		CONSEQUENCE		Risk Rating	Risk Mitigation / Avoidance Actions	LIKELIHOOD		CONSEQUENCE		Residual Risk Rating	Responsibility
EG: - Site Establishment - Excavation - Footing Removal - Pre-Assembly - Soil Contamination - Water Quality - Groundwater - etc	Notes →	EG: - Trenching - Plant Erection - Cable Laying - etc	Potential Source of Harm, Damage or Impact, Associated With Each Step or Event.	What is the probability of the event occurring?	Probability Score	How often is it likely to occur?	Frequency Score	Risk probability number	Method/Activity to be implemented to minimise or eliminate the associated hazards/impacts (Apply the hierarchy of controls)	What is the probability of the event occurring?	Probability Score	How often is it likely to occur?	Frequency Score	Risk probability number	Who is responsible for the recommended action?
Civil works, excavations, temporary stockpiles	STEP-001	Soil Management	Inappropriate disposal of spoil resulting in environmental damage	Moderate	3	Critical	5	15	A soil identification and reuse assessment will be conducted at the commencement of the project (FRM-G002 Waste Management and Minimisation Assessment)	Unlikely	2	Minor	2	4	Site Manager
								0	If not used as general fill, any excavated material generated during the proposed works would need to be removed from site, covered during transport, and disposed of at an appropriately licensed facility;	Unlikely	2	Minor	2	4	Site Manager
								0	Remove surface vegetation by blading off, by scarification and raking, or kill off by application of a suitable non-residual herbicide applied not less than two weeks before stripping commences;	Unlikely	2	Minor	2	4	Site Manager
								0	Stripping should be undertaken by the excavator standing on the surface of the topsoil, digging the topsoil to its maximum depth and loading into site or off-site transport vehicles;	Unlikely	2	Minor	2	4	Site Manager
								0	Topsoil/blue metal will normally be stripped to a thickness defined by depth below the surface and/or a distinct colour change. Stripping topsoil too deeply so that subsoil becomes incorporated will reduce its quality and fertility;	Unlikely	2	Minor	2	4	Site Manager
								0	The crushed blue metal referenced above shall be respread across the switchyard surface where appropriate;	Unlikely	2	Minor	2	4	Site Manager
								0	Soil generally gains strength and becomes more resistant to damage as it dries. Consequently, it should be handled in the right conditions (dry) of weather and soil moisture and using suitable machinery (not too heavy causing compaction).	Unlikely	2	Minor	2	4	Site Manager
	STEP-002	Soil and stockpile management procedures	Sediment run off from cleared areas impairing storm-water quality	Likely	4	Moderate	3	12	Soil stockpiles will be maintained at minimum amounts. (This is calculated using FRM-G001 Erosion and Sediment Control Plan;	Unlikely	2	Minor	2	4	Site Manager
								0	Strip and stockpile topsoil separately from subsoil or overburden for later rehabilitation of the site	Unlikely	2	Minor	2	4	Site Manager
								0	Stockpiles will have sediment fencing established downslope and will be identified in FRM-G001 Erosion and Sediment Control Plan	Unlikely	2	Minor	2	4	Site Manager
								0	Upslope water (if applicable) will be diverted around the stockpiles as per FRM-G001 Erosion and Sediment Control Plan	Unlikely	2	Minor	2	4	Site Manager
								0	Dust suppression techniques such as spraying of surfaces and covering of stockpiles will be implemented as per FRM-G001 Erosion and Sediment Control Plan	Unlikely	2	Minor	2	4	Site Manager
								0	Ensure stockpiles are not within five metres of significant vegetation, concentrated water flows, roads or other water flow areas	Unlikely	2	Minor	2	4	Site Manager
								0	Stockpiles that will remain for a period of more than 2 weeks will be covered	Unlikely	2	Minor	2	4	Site Manager
	STEP-003	Spoil Transport	Contamination of environment	Likely	4	Moderate	3	12	Excavated and/or stockpiled spoil will be placed in trucks and removed to a licenced disposal depot	Unlikely	2	Minor	2	4	Site Manager
			Loss of load					0	All loads will be covered prior to leaving site	Unlikely	2	Minor	2	4	Site Manager
								0	Prior to leaving site all trucks will report to a designated point (Site Office). At this stage the truck and its load will be inspected by the Site Manager or his delegate. Records of this inspection will be recorded in FRM-C040 Waste Disposal Register. (The purpose of this register is to monitor disposal of materials. FRM-C040 Waste Disposal Register will also identify if disposal certificates are required)	Unlikely	2	Minor	2	4	Site Manager
								0	Public roads shall be kept clean by removing any mud or soils deposited by construction vehicles within 24 hours	Unlikely	2	Minor	2	4	Site Manager
	STEP-004	Erosion and sediment control	Sediment runoff from site, decreased storm-water quality	Unlikely	2	Moderate	3	6	Ensure that a minimum of land is exposed to the risk of erosion for the shortest period of time	Unlikely	2	Minor	2	4	Site Manager
								0	Install temporary erosion control measures when undertaking small pits and trenches excavations	Unlikely	2	Minor	2	4	Site Manager
								0	Sediment control devices will be identified in FRM-G001 Erosion and Sediment Control Plan and installed parallel with the ground contours, immediately down slope of any areas where the natural ground surface will be disturbed	Unlikely	2	Minor	2	4	Site Manager
								0	Where possible soil and material collected in erosion control or sediment collection structures will be reused to fill excavations or site restoration (unless contaminated)	Unlikely	2	Minor	2	4	Site Manager
								0	Machinery and vehicles are to remain on existing roads and access roads whenever possible. Movements will be further restricted during and immediately following wet weather to minimise disturbance to ground cover	Unlikely	2	Minor	2	4	Site Manager
								0	Works will not be undertaken immediately prior to or during periods of high rainfall	Unlikely	2	Minor	2	4	Site Manager
								0	Erosion and sediment collection structures will be inspected on a weekly basis. This inspection will be documented in FRM-C041 Weekly Environmental Review Log	Unlikely	2	Minor	2	4	Site Manager
								0	Disturbed grass areas would be stabilised and re-grassed (where appropriate). Once ground cover is stabilised, removal of erosion and sedimentation control devices can occur	Unlikely	2	Minor	2	4	Site Manager
	STEP-005	Flora and fauna	Modification, destruction of habitat, damage to native wildlife, vegetation	Moderate	3	Minor	2	6	FRM-G008 Pre-Clearance Assessment Survey will be utilised to identify areas of significance in relation to flora and fauna	Unlikely	2	Minor	2	4	Site Manager
								0	Machinery and vehicles are to remain on existing access tracks to minimize disturbance to any existing ground cover. Any ground cover disturbed as a result of the works is to be restored to former condition on project completion	Unlikely	2	Minor	2	4	Site Manager
								0	Native fauna will not be intentionally disturbed and the advice of the client's Environmental Representative sought if the likelihood of such disturbance arises	Unlikely	2	Minor	2	4	Site Manager
								0	All personnel entering the site will be made aware during site induction training about the presence of potential threatened species and endangered ecological communities.	Unlikely	2	Minor	2	4	Site Manager

Category	Step Number	Work Activity - A Chain of Tasks Necessary to Complete a Job	Related Hazards / Impacts	LIKELIHOOD		CONSEQUENCE		Risk Rating	Risk Mitigation / Avoidance Actions	LIKELIHOOD		CONSEQUENCE		Residual Risk Rating	Responsibility
EG: - Site Establishment - Excavation - Footing Removal - Pre-Assembly - Soil Contamination - Water Quality - Groundwater - etc	Notes →	EG: - Trenching - Plant Erection - Cable Laying - etc	Potential Source of Harm, Damage or Impact, Associated With Each Step or Event.	What is the probability of the event occurring?	Probability Score	How often is it likely to occur?	Frequency Score	Risk probability number	Method/Activity to be implemented to minimise or eliminate the associated hazards/impacts (Apply the hierarchy of controls)	What is the probability of the event occurring?	Probability Score	How often is it likely to occur?	Frequency Score	Risk probability number	Who is responsible for the recommended action?
								0	If during the course of the project CPP personnel become aware of the presence of threatened species, populations or endangered ecological communities or their habitats, that were not identified and assessed in the REF (if applicable) and which are likely to be affected by the activity the following will steps will be followed;	Unlikely	2	Minor	2	4	Site Manager
								0	· Immediately cease work likely to affect the threatened species, populations or endangered ecological communities or their habitats;	Unlikely	2	Minor	2	4	Site Manager
								0	· Inform the relevant statutory authority as soon as practicable by phone, electronically or in writing;	Unlikely	2	Minor	2	4	Site Manager
								0	· Do not recommence work likely to affect the threatened species, populations or endangered ecological communities or their habitats until receiving written advice from the relevant authority;	Unlikely	2	Minor	2	4	Site Manager
								0	Any deep excavations (greater than 1.5 metres deep) left open at night will have a ramp/opening installed to allow access for any fauna to escape or will be or will be completely covered, therefore not requiring ramps	Unlikely	2	Minor	2	4	Site Manager
	STEP-006	Waste management and minimisation	Illegal dumping resulting in environmental damage	Moderate	3	Major	4	12	FRM-G002 Waste Management and Minimisation Assessment will be utilised to identify waste management strategies.	Unlikely	2	Minor	2	4	Site Manager
								0	All wastes from this project will be tracked by the Site Manager or his delegate using FRM-C040 Waste Disposal Register	Unlikely	2	Minor	2	4	Site Manager
								0	FRM-G002 Waste Management and Minimisation Assessment will also determine the requirements for contaminated materials and wastes	Unlikely	2	Minor	2	4	Site Manager
								0	Waste identified in FRM-G002 Waste Management and Minimisation Assessment will be appropriately stored on site considering the following as a minimum:	Unlikely	2	Minor	2	4	Site Manager
								0	1) Appropriate storage (covered, bunded, separated where necessary);	Unlikely	2	Minor	2	4	Site Manager
								0	2) Regularly disposed of in accordance with legislation and regulations;	Unlikely	2	Minor	2	4	Site Manager
								0	3) All waste to be reused and recycled wherever possible;	Unlikely	2	Minor	2	4	Site Manager
								0	4) All waste removed from site to be recorded in FRM-C040 Waste Disposal Register;	Unlikely	2	Minor	2	4	Site Manager
								0	Note - Concrete trucks would be permitted to flick wet wipe their discharge chutes with on board water with the effluent discharged into prepared excavations/formwork.	Unlikely	2	Minor	2	4	Site Manager
	STEP-007	Weed management	Soil contamination with weeds	Moderate	3	Moderate	3	9	All mobile plant required will be inspected prior to entering using this project using FRM-S123 Mobile Plant Inspection Form	Unlikely	2	Minor	2	4	Site Manager
								0	If mobile plant is particularly muddy (e.g. during periods of high rainfall) then the mud will also be scraped from the machinery, to ensure all soil and vegetable matter is removed	Unlikely	2	Minor	2	4	Site Manager
								0	Excavated topsoil material that is likely to be infested with weed propagules is to be removed from the site and disposed of at an appropriately licensed waste disposal facility	Unlikely	2	Minor	2	4	Site Manager
								0	All imported fill will be certified Virgin Excavated Natural Material	Unlikely	2	Minor	2	4	Site Manager
								0	Imported blue gravel will be free from weeds and other organic matter that may be a source of weed propagation	Unlikely	2	Minor	2	4	Site Manager
	STEP-008	Air Quality	Excessive exhaust fumes	Moderate	3	Minor	2	6	Mobile plant will be inspected by the Site Manager using FRM-S123 Mobile Plant Inspection Form.	Unlikely	2	Minor	2	4	Site Manager
								0	Mobile plant will then be registered in FRM-S124 Mobile Plant Register.	Unlikely	2	Minor	2	4	Site Manager

Appendix H – Consent Conditions and Compliance

Development Consent Condition	Brief Description	CEMP Reference	Page Number
Part A – Administrative Conditions			
A1	Obligation to minimise harm to the environment	Throughout CEMP	Throughout
A2	Terms of Development Consent	Section 2.1	10
A3	Terms of Development Consent	Noted	N/A
A4	Terms of Development Consent	Noted	N/A
A5	Staging	Section 3.3.2	15
A6	Structural adequacy	Design consideration Outside of CEMP scope	N/A
A7	Decommissioning	Outside of CEMP scope	N/A
A8	Decommissioning	Outside of CEMP scope	N/A
A9	Decommissioning	Outside of CEMP scope	N/A
A10	Compliance	Section 8	120
A11	Compliance	Section 8	120
A12	Dispute	Outside of CPP Scope	N/A
Part B –General Conditions			
B1	Ancillary Facilities	Section 3	13
B2	Decommissioning and rehabilitation	Section 7.11	117
B3	Bushfire risk	Section 6.4	28
B4	Bushfire risk	Section 6.4	28
B5	Dangerous goods	Section 6.5	39
B6	Dust generation	Section 7.6	100
B7	Water quality impact	Section 7.2	62

B8	Water quality impact	Not applicable	N/A
B9	Soil and water management	Section 7.2	62
B10	Waterways	Not applicable	N/A
B11	Waste management	Section 7.4	96
B12	Waste management	Section 7.4	96
B13	Waste management	Section 7.4	96
B14	Utilities and services	Section 6.16	54
B15	Flora and fauna	Section 7.3	69
B16	Flora and fauna	Section 7.3	69
B17	Flora and fauna	Section 7.3	69
B18	Visual amenity	Outside of CEMP Scope	N/A
B19	Visual amenity	Outside of CEMP Scope	N/A
B20	Visual amenity	Section 7.12	119
B21	Rehabilitation and revegetation	Section 7.11	117
B22	Construction noise	Section 7.9	104
B23	Construction noise	Section 7.9	104
B24	Construction noise	Section 7.9	104
B25	Construction noise	Section 7.9	104
B26	Operational noise	Outside of CEMP Scope	N/A
B27	Operational noise, transmission line	Outside of CEMP Scope Where applicable Section 7.9	
B28	Traffic and transport	Outside of CEMP Scope	N/A
B29	Traffic and transport	AGL	N/A
B30	Heritage impacts	Section 7.10	114
B31	Heritage impacts	Section 7.10	114
B32	Easement	Outside of CEMP Scope	N/A
B33	Fencing	Outside of CEMP Scope	N/A

Part C –Environmental Management, Reporting and Auditing			
C1	Environmental Representative	AGL	N/A
C2	Construction Environmental Management Plan	Sections 6.2 and 7.12	27 & 119
C3	CEMP Sub Plans	Section 7.12	119
C4	Operational Environmental Management Plan	Outside of CEMP Scope	N/A
C5	Biodiversity Offset Management Plan	AGL Outside of CPP Scope	N/A
C6	Decommissioning Management Plan	Outside of CEMP Scope	N/A
C7	Decommissioning road dilapidation	Outside of CEMP Scope	N/A
C8	Incident reporting	Section 6.6	41
C9	Regulator reporting	AGL Where applicable Section 8	120
C10	Document availability	AGL	N/A
C11	Provision of electronic information	AGL	N/A
C12	Community information plan	AGL	N/A
C13	Complaints procedure	AGL Where applicable Section 6.2	27
C14	Complaints Procedure	AGL Where applicable Section 6.2	27
C15	Complaints Procedure	AGL Where applicable Section 6.2	27
C16	Compliance Tracking Program	AGL Where applicable Section 8	120

Appendix I – Mitigation Measures and Compliance

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
Biodiversity			
1	A supplementary survey during spring (early October) prior to the finalisation of the transmission line design would be conducted to confirm if threatened flora species including the Red] darling Pea and Pine Donkey Orchid inhabit the higher quality woodland vegetation south of the Barrier Highway. If these species are identified in areas proposed for impact, transmission infrastructure would be microsited with input from an ecologist to ensure a significant impact is avoided. If unavoidable, all areas of suitable habitat within the easement would be included as additional permanent impact areas and would be added to the total area required to be offset.	Section 7.3	69
2	Greycrowned Babbler nest sites identified in Figure 4-7 of the Biodiversity Assessment would be protected from impact during infrastructure siting and design process.	Section 7.3	69
3	Pre clearance surveys would be conducted prior to felling hollow bearing trees.	No felling of HBT's required Section 7.3	69
4	Works would avoid impacts to mature trees that are to be retained. Tree protection standards would comply with Australian standard AS 4970]2009 Protection of trees on development sites (Standards Australia, 2009). Wherever practicable, excavations and vehicle/machinery movements would occur outside the canopy dripline of large eucalypts.	Section 7.3	69
5	Removal of the east-west strip of vegetation must be conducted outside of the breeding season of the Grey-crowned Babbler (June to February) unless the nests have been confirmed to be inactive.	Section 7.3	69
6.	Restoration of habitat: Hollows from felled hollow-bearing trees would be salvaged and placed in retained trees or on poles in adjacent habitat. For each hollow salvaged, a nest box would also be installed to offset the loss of habitat. Where it is not deemed to be a fire hazard, timber from cleared trees (coarse woody debris (CWD) including logs) is to be relocated into areas of adjacent woodland to provide foraging habitat for species such as Grey-crowned Babblers	No felling of HBT's required Section 7.3	69

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	and other ground dwelling fauna. CWD would be scattered evenly across the relocation areas, not piled or windrowed. Cleared native vegetation not likely to provide habitat would be mulched rather than burned.		
7.	Within areas of native vegetation, existing tracks would be used wherever possible to avoid compaction and/or disturbance.	Section 7.3	69
8.	Traffic management measures would be incorporated into the construction and operation phase and would address traffic flow, vehicle speed and vehicle numbers entering and leaving the site. This would aim to prevent collisions with fauna utilising the site, particularly Grey-crowned Babblers.	Section 6.14	51
9.	Excavated topsoil would be stored separately from subsoil and replaced in a manner that replicates the original profile as closely as possible to assist rapid revegetation.	Section 7.2	69
10.	Site stabilisation, rehabilitation and revegetation would be undertaken progressively during works, to ensure that soils are stabilised as soon as practical. This would minimise weed infestation, sedimentation and erosion, which degrade habitat.	Section 7.3	69
11.	Disturbed areas would be identified and used preferentially for vehicle and machinery access, materials laydown, stockpiling of cleared vegetation and the deposition and retrieval of spoil whenever practicable, to minimise the footprint of the development on intact native-dominated areas.	Section 7.3	69
12.	A weed management plan would be developed for the site, guided by the measures set out in the Biodiversity Assessment.	Section 7.5	98
13.	Perimeter security fencing will feature heavy duty fabric to increase visibility to fast flying parrots.	Section 7.3	69
14.	Where trenches are to be excavated and backfilled in well vegetated native areas, whole sods would be removed, stored in moist, shaded conditions and replaced following the works. Sod storage time would be minimised and sods would be replaced in a manner that maximises the chances of re-establishment and soil stabilisation.	Section 7.3	69
15.	If the dam in the south of the solar plant site is removed during the works, an alternative watering point would not be established on the proposal site.	N/A	N/A

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
16.	Trenches would be left open for the least time practical and would be inspected for trapped fauna prior to back filling. Any trench sections left open overnight would be inspected early in the morning and any trapped fauna removed.	Section 7.3	69
17.	A groundcover management plan would be developed, as outlined in the Biodiversity Assessment.	Not relevant to CPP activities	N/A
18.	The space between the PV array rows would be kept clear to enable access by vehicles for ongoing weed control, and pasture renovation, if required.	Not relevant to CPP activities	N/A
19.	Nest boxes and salvaged hollows remounted during the construction phase would be routinely inspected to check the integrity of the structures and remedy them if required.	Section 7.3	69
20.	Areas of native vegetation that were impacted by the proposal would be rehabilitated to a level that demonstrates an increase in the environmental values of the site compared to its pre-operational state. A rehabilitation plan would be prepared that includes ongoing monitoring to ensure native vegetation rehabilitation is successful for the long-term. The plan would be developed prior to decommissioning and would be developed in partnership with relevant government agencies.	Section 7.3	69
21.	An Offset Plan would be developed with input from OEH and the CMA and according to the strategy provided in Appendix G of the Biodiversity Assessment. It would be finalised prior to any construction impacts, as outlined in the Biodiversity Assessment. The objective of offsetting is to ensure that an overall 'maintain or improve' outcome is met for the project; where impacts cannot be avoided, or sufficiently minimised, the residual impact would be offset in perpetuity.	Section 7.3	69
22.	Prior to finalising the Offset Site boundaries, the proponent would validate the area impacted by construction to ensure that the actual, not estimated, impacted area is offset.	Section 7.3	69
23.	The offset site management actions and their outcomes would be reported every two years to the Department of Planning and Infrastructure for the duration of the project (up to 30 years) to demonstrate that a 'maintain or improve' outcome has been met.	Section 7.3	69

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
Aboriginal Heritage			
24.	If human skeletal remains are found during the activity, work in the area of the remains would stop immediately, the area would be secured to prevent unauthorised access and the NSW Police and OEH would be contacted.	Section 7.10	114
Hydrology (surface and groundwater)			
25.	The substation and office building would be designed to accommodate a 1:100 year flood and be located in the south-west of the site, outside the inundation zone (Figure 6-1).	Not applicable to CPP area of site	N/A
Noise Amenity			
26.	The employee and contractor induction would inform all site personnel about noise management measures, construction hours and nearest sensitive receivers.	Section 7.9	104
27.	All employees are responsible for managing noise from their work activities and working in a manner to reduce noise.	Section 7.9	104
28.	Works are to be carried out during standard work hours (i.e., 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any construction outside of these normal working hours would only be undertaken with prior approval from relevant authorities. For works outside standard hours, inform affected residents and other sensitive land use occupants between 5 and 14 days before commencement.	Section 7.9	104
29.	Where reasonable and feasible, noisy activity would be carried out in the least sensitive time periods (to be determined through community consultation).	Section 7.9	104
30.	A Construction Noise Management Plan would be prepared as part of the Construction Environmental Management Plan. It would include provision for noise monitoring to be undertaken in the event a noise complaint is received to verify if target noise levels are exceeded at that receiver. If so, additional measures would be developed in consultation with the complainant.	Section 7.9	104
31.	Community consultation would be ongoing for residences within close proximity to the works. The information would include details of: • The proposed works	AGL	N/A

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	• The duration and nature of the works during construction • What works are expected to be noisy • What is being done to minimise noise • When respite periods would occur • Regular updates on progress of works.		
32.	Ensure equipment is operated and maintained in accordance with the manufacturer¡¦s instructions including replacement of engine covers, repair of defective silencing equipment, tightening of rattling components, repair of leakages in compressed air lines and shutting down equipment not in use.	Section 7.9	104
33.	Avoid the operation of noisy equipment near noise-sensitive areas and where possible, loading and unloading would be conducted away from sensitive areas.	Section 7.9	104
34.	Position plant and equipment on site in a position that provides the most acoustic shielding from buildings and topography. Plant known to emit noise in one direction would be orientated where practicable to screen the emissions.	Section 3	13
35.	Where feasible and reasonable install multi-frequency alarms and smart alarms on vehicles, taking into account the requirements of the Work Health and Safety legislation.	Section 7.9	104
36.	Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling).	Outside of extent of CPP area	N/A
	Visual amenity		
37.	To break up views of infrastructure, screening vegetation would be planted or allowed to regenerate in areas identified in Figure 6.1 of the Visual Impact Assessment. Maintenance requirements of the planting would be considered within the operational management plan to ensure that plants are watered as required and that dead plants are replaced.	Outside scope of the CEMP	N/A
38.	Clearing of vegetation minimised. In particular, the tree lines on the western, northern and eastern boundaries of the site retained intact and the transmission line route placed to allow this to occur.	Section 7.3	69

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
39.	All areas disturbed by the construction of the proposed transmission line and solar plant would be allowed to naturally regenerate and be monitored to ensure that regeneration has occurred. Where natural regeneration is unsuccessful, revegetation would be undertaken.	Sections 7.3 and 7.11	69 & 117
40.	The colour of above ground structures, including the construction site offices, would be sympathetic to the landscape character of the site to minimise visual contrast.	Section 3	13
41.	The following principles would be considered regarding placement of poles near the Barrier Highway crossing to reduce their visual impact: • setting poles as far back as possible from the road where the transmission line crosses the road • arranging the poles so that the transmission line crosses roads at right angles • locating poles where they can be screened from view by existing vegetation (and adding in screening vegetation where needed).	Section 7.12	119
	Air Quality		
42.	Air quality impacts would be addressed via the development of: • Protocols to guide vehicle and construction equipment use, to minimise emissions. • Protocols to minimise and treat dust (water carts or similar).	Section 7.6	100
	Health and safety		
43.	The substation and transmission lines would be located as far as practical from residences, farm sheds, and yards in order to reduce the potential for both chronic and acute exposure to EMFs.	Section 3	13
44.	Design of electrical infrastructure would minimise EMFs.	Section 3.3.2	15
45.	Fencing around the substation would be maintained to limit public access.	Section 3.3.2	15
Land Use Impacts And Mineral Resources			

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
46.	Consultation with neighbouring landholders regarding any temporary impacts to access or risks to livestock. Additional specific mitigation may be required such as: • Additional fencing to protect livestock from collision risks • Vehicle speed restrictions on access roads.	Section 6.14 and Appendix E	51
47.	Consultation with mineral stakeholders would be undertaken to inform them of the timing of works and final infrastructure layout.	It is understood that the project would not have any detrimental impacts on mineral resources nor, specifically in relation to CPP activities, the ability of the land to be utilised in the future for mineral extraction. No consultation is proposed by CPP however it is understood that consultation is to occur as a component of the AGL Community Consultation Management Plan – refer **Section 6.14**.	51
48.	An easement over the affected part of Lot 7300 DP1156652, with compensation payable to the Crown under the provisions of the Land Acquisition (Just Terms Compensation) Act 1991, would be created prior to commencement of energy generation at the site.	Section 7.12	119
Socio Economic and Community Wellbeing			
49.	A Community Consultation Plan would be developed to manage impacts to community stakeholders, including but not limited to: • Protocols to keep the community updated about the progress of the project and project benefits • Protocols to inform relevant stakeholders of potential impacts (haulage, noise etc)	Sections 4, 6.2, 6.6 and 8	19, 27, 41 & 120

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	• Protocols to respond to any complaints received.		
50.	Liaise with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials.	Section 3.7	17
51.	Liaise with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.	Section 3.7	17
Traffic, Transport and Road Safety			
52.	A Traffic Management Plan and Haulage Plan would be developed prior to commencing construction activities and would be approved by RMS and the Department of Planning and Infrastructure in consultation with Council. The plans shall address, but not necessarily be limited to: • The origin, number, size frequency and final destination of vehicles entering/exiting the site. • Loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles. • The management and coordination of the movement of construction and personnel vehicles to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables. • Scheduling of haulage vehicle movements to minimise convoy lengths or platoons. Consideration should be given to minimise the route length for road transport for all over size and over mass loads to minimise the impact on traffic. • Details of intersection improvements in accordance with Austroads *Guide to Road Design 201* and RMS supplements. • A full and independent risk analysis and inspection of the proposed transport route(s) with procedures for reporting and remediating and damages caused by oversize/overmass traffic. • A commitment from the proponent to provide funding for the maintenance and repair of any affected classified rods for the duration of the	Section 6.14 and Appendix E	51

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	transportation of oversize and overmass vehicles and loads, to the satisfaction of RMS. • Assessment of road condition prior to construction on all local roads that would be utilised • Consideration of bus schedules (particularly school buses and Countrylink services) and safe interaction between buses and construction traffic, incorporating: o Documented vehicle safety procedures regarding the school bus. o Driver training requirements. o Community consultation regarding impacts to bus routes. • Traffic controls (speed limits, signage etc) • Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts. • Provision of a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures • Reinstatement of pre-existing conditions, where required. • Assessment of road routes to minimise impacts on transport infrastructure • Scheduling of deliveries of major components to minimise safety risks (on other local traffic including buses).		
53.	AGL would obtain all required permits and licences from RMS prior to conducting any work in the Barrier Highway road corridor, including, as may be required: • A Works Authorisation Deed (WAD) between the developer and RMS prior to works commencing. • A Road Occupancy Licence prior to any works commencing on or adjacent to the Barrier Highway.	Section 6.14 and Appendix E	51

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	• Special permits (if necessary) for oversize/overmass vehicles.		
54.	AGL would install gates, grids or similar structures at least 20 metres from the edge of the road on the Barrier Highway to provide for suitable storage capacity for the largest class of vehicle accessing the site	Section 6.14 and Appendix E	51
	Resource Use and Waste Management		
55.	A Waste Management Plan (WMP) would be developed to minimise wastes. It would include but not be limited to: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy • Quantification and classification of all waste streams • Provision for recycling onsite • Provision of toilet facilities for onsite workers and how sullage would be disposed of (i.e., pump out to local sewage treatment plant) • Provision of disposal at facilities permitted to accept the waste.	Section 7.4	96
56.	Excess subsoil would be removed from the site and disposed of at an appropriate fill storage site.	Section 7.4	96
57.	Excess topsoil would be retained and used in site rehabilitation.	Sections 7.2 and 7.11	62 & 117
	Fire and Bushfire		
58.	Develop a Bush Fire Management Plan with input from the RFS to include but not be limited to: Management of activities with a risk of fire ignition Management of fuel loads onsite Storage and maintenance of fire-fighting equipment, including siting and provision of adequate water supplies for bush fire suppression The below requirements of Planning for Bush Fire Protection 2006 o Identifying asset protection zones o Providing adequate egress/access to the site (s4.1.3) o Emergency evacuation measures (s4.2.7)	Section 6.4	28

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	Operational procedures relating to mitigation and suppression of bush fire relevant to the solar plant Post fire clean up procedures, including the need for sampling for emissions of cadmium and lead, where appropriate.		
Historic Heritage			
59.	Should an item of historic heritage be identified, the Heritage Branch (Office of Environment and Heritage) would be contacted prior to further works being carried out in the vicinity.	Section 7.10	114
Soil and Water (includes water use)			
60.	Site specific Erosion and Sediment Control Plans would be prepared, implemented and monitored during the project, in accordance with Landcom (2004), to minimise soil and water impacts. These plans would include provisions to ensure any discharge of water from the site is managed to ensure ANZECC (2000) water quality criteria are met and traffic generated soil erosion is minimised.	Section 7.2	62
61.	A Spill Response Plan would be developed to: • Manage the storage of any potential contaminants onsite. • Mitigate the effects of soil contamination by fuels or other chemicals • Prevent contaminants affecting adjacent pasture and dams.	Section 7.8	103
62.	If water is required from the local water supply authorities, access would be obtained prior to commencement of activities in consultation in consultation with: • Cobar Water Board, for water from the Cobar • Bogan Shire Council, for water from the local council supply Water pipeline	Section 7.8	103
63.	Dust suppression activities would be undertaken, including: During construction and decommissioning • A water cart (truck) would be utilised routinely, wetting all access roads and exposed dusty surfaces as appropriate to the conditions of the project site.	Section 7.8	103

No.	Mitigation Measure	Relevance and CEMP Section	Page Number
	• Stockpiled topsoil and other materials that exhibit significant dust lift off would be wet down routinely and as appropriate. • Stabilising techniques and/or environmentally acceptable dust palliatives will be utilised if the wetting down of surfaces prove to be ineffective. During operation • Any area that was temporarily used during construction (laydown and trailer complex areas) would be restored back to original condition or re-vegetated with native plants. • Areas that may not have been hard packed but have been disturbed in some form would be treated with environmentally acceptable dust palliatives and / or vegetated (e.g. by means of hydro seeding) with seeds native to the area.		
Cumulative Impacts			
64.	Should the Nyngan Scandium Project receive development approval, EMC Metals Corp would be consulted by the Nyngan Solar Plant proponent to determine if construction traffic for the respective proposals could be scheduled to minimise cumulative impacts to third parties.	Section 7.1.3	118