AGL Energy Limited

Broken Hill Solar Plant Grid Connection

Construction Environmental Management Plan

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Reviewed By:	**CPP Project Manager & WHSE and QA Manager** Grant Johnstone Seamus Hickey	**Date:**
Approved By:	**Geolyse** Andrew Brownlow	**Date:**

Revision History

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1.0	Agency Review	3/06/2014	AB	GJ	AB
2.0	Review by Government Agencies (refer Appendix C)	16/06/2014	AB	GJ	AB
3.0	Review by Environmental Representative	7/07/2014	AB	GJ	AB
4.0	Updated TMP (Appendix E)	5/08/2014	AB	GJ	AB
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Notes:

Circulation

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Notes:

Contents

1 ABBREVIATIONS

BOP	Biodiversity Offset Plan
CEMP	Construction Environmental Management Plan
CIN	Continuous Improvement Notice
COA	Condition of Approval
CPP	Consolidated Power Projects
DP&I	NSW Department of Primary Industries
DMP	Decommissioning Management Plan
EEC	Endangered Ecological Community
EA	Environmental Assessment
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPA	Environment Protection Authority
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
FS	First Solar (Australia) Pty Ltd
FFMP	Flora and Fauna Management Plan
JSEA	Job Safety Environmental Analysis
NIS	Noise Impact Statements
NOW	NSW Office of Water
OEH	NSW Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OPGW	Optical Ground Wire
OOHW	Out of Hours Work
PV	Photo Voltaic
RAP	Registered Aboriginal Party
RFS	Rural Fire Service
RUSLE	Revised Universal Soil Loss Equation
SDS	Safety Data Sheet
SOC	Statement of Commitment
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan

2 INTRODUCTION

2.1 Purpose

This Construction Environmental Management Plan (CEMP) has been prepared to satisfy a Condition of Approval (COA) issued by the Planning Assessment Commission for the Broken Hill Solar Photovoltaic Power Plant (MP10_0202).

The application for Project Approval was granted consent by reference to an *Environmental Assessment* prepared by SKM (October 2012) and *Submissions and Preferred Project Report* prepared by SKM (February 2013).

COA C2 requires AGL Energy Limited (AGL), the development proponent, to prepare and implement a Construction Environmental Management Plan in consultation with Council and the Crown Lands Division of the Department of Trade and Investment.

2.2 Project

The approved project, being the Broken Hill Solar Photovoltaic Power Plant, includes:

- a PV array incorporating rows of solar panels mounted on a fixed steel frame and a series of central inverters and transformers;
- aboveground and underground electrical conduits and cabling to connect the arrays to the inverters and transformers;
- marshalling switchgear to collect the power from the PV arrays.
- a diversion of the existing 22kV aboveground transmission line and placing it underground;
- construction of an aboveground 22kV transmission line to connect the solar plant to the existing Broken Hill substation;
- internal access tracks, upgrade to existing roads, fencing and landscaping;
- site office, operations and maintenance office buildings; and
- temporary construction facilities such as a site compound and equipment laydown area.

2.3 Scope

AGL has engaged two principal contractors to deliver the project.

First Solar (Australia) Pty Ltd has responsibility to construct the solar plant and associated access.

Consolidated Power Projects (CPP) has responsibility to construct the aboveground 22kV transmission line to connect the solar plant to the existing Broken Hill substation.

AGL, following consultation with the Department of Planning, has secured approval for two separate Construction Environmental Management Plans (CEMP) to be prepared and submitted: one for First Solar's construction works, and the second for CPP's construction works.

This CEMP is prepared for CPP's construction works; that is the grid connection. These works, as approved, include the erection of 2.7km of new 22kV transmission line.

Other activities undertaken by CPP include enabling works and include the diversion of the existing 22kV line underground and the installation of a potable water supply pipeline. These preparatory activities do not constitute construction and fall outside the scope of this CEMP.

An *Enabling Works* (Geolyse, July 2014) report has been prepared and approved by the Environmental Representative. This report provides detail on the environmental management measures employed by CPP whilst undertaking these enabling works.

2.4 Structure

The CEMP specification is detailed in COA C2. To facilitate the assessment of compliance against this specification, the structure, format and scope of this CEMP has been prepared against this specification. The specification is reproduced below:

a) a description of all relevant activities to be undertaken on the site during construction including an indication of stages of construction, where relevant;

b) identification of the potential for cumulative impacts with other construction activities occurring in the vicinity and how such impacts would be managed;

c) details of any construction sites and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented;

d) statutory any other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and polices;

e) evidence of consultation with relevant public authorities required under this condition and how issues raised by the agencies have been addressed in the plan;

f) a description of the roles and responsibilities for all relevant employees involved in the construction of the project 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 approval;

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;

h) specific consideration of relevant measures identified in the documents referred to under conditions A2b) and A2c) of this approval;

i) the additional requirements of this approval;

j) a complaints handling procedure during construction identified in conditions C12 and C14;

k) register of construction work hazards and the anticipated level of risk associated with each;

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;

m) measures to monitor and manage flood impacts in consultation with NOW;

n) measures to monitor and manage dust emissions including dust generated by traffic on unsealed public roads and unsealed internal access tracks;

o) emergency management measures including measures to control bushfires; and

p) information on water sources.

2.5 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.

COA 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.
- 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 Assessment* and *Preferred Project Report*;
- that result in works being inconsistent with the Minister Consent Conditions;
- result in a significant change to the approved project;
- would result in any potential environmental or social impacts of a greater scale or different nature than that considered in the approvals process.

2.6 Plan Revisions

Changes to this CEMP shall be classed as a revision. Revisions shall be approved and re-circulated as necessary.

Revisions shall be listed in the Revision History table at the front of this plan.

3 CONSTRUCTION ACTIVITY

3.1 Requirement

COA C2(a) states the CEMP must include:

> *a description of all relevant activities to be undertaken on site during construction including an indication of stages of construction, where relevant.*

3.2 Activity Location

The site is located approximately 5 km south west of Broken Hill on the southern side of the Barrier Highway and north of the Peterborough-Broken Hill rail line.

The location and alignment of the grid connection, including pole locations, is shown in **Drawing 1** (refer **Section 28**). The co-ordinates of the pole locations, as requested by Department of Trade and Investment Crown Lands, is provided below.

Annotated aerial photographs showing the location of the individual poles and construction vehicle routes are provided in **Figures 14.1 to 14.4**, and **Figure F.1** in **Appendix F** identifies the vegetation types to be impacted by the grid connection works.

Table 3.1 – Pole Locations

Pole Location	Easting	Northing
BH – 01	**537397.972**	**6461360.589**
BH – 02	537610.850	6461445.254
BH – 03	537823.052	6461529.650
BH – 04	538050.533	6461620.123
BH – 05	538248.943	6461699.034
BH – 06	538448.958	6461778.584
BH – 07	538618.525	6461846.023
BH – 08	538791.185	6461914.693
BH – 09	538963.107	6461721.809
BH – 10	539134.813	6461529.167
BH - 11	539299.680	6461344.198
BH – 12	539525.344	6461237.082
BH – 13	539621.991	6461108.963

3.3 Activity Description

Construction of the 2.7 km of transmission line will be undertaken in the following manner.

Pole Delivery

Sixteen 20m poles will be erected. Whilst 16 poles are to be erected, three locations are twin-pole arrangements. The 16 poles will be delivered by standard articulated truck direct to the dedicated construction lay down area on the southern end of the Solar Plant site. The 20m poles would be delivered in two sections; negating the need for oversize vehicle delivery.

Civil Works

Civil works includes construction activity up to the point of establishing the foundations for pole erection. These works would commence with establishment of a temporary access track along the transmission line alignment from pole to pole, for construction plant (utility vehicles, crane, concrete truck and truck mounted Elevated Work Platforms), for setting up for conductor and OPGW stringing, and during the running out of draw wires.

Where possible CPP would gain pole to pole access by weaving the access in and around vegetation to pick cleared areas and minimise the disturbance to herbage, as well as utilise some of the numerous formed access tracks that already traverse the Willyama Common. Vegetation clearing associated with establishing this access will not entail grading into soil: no earthworks in terms of building an access track formation are required or proposed. Vegetation clearing would be restricted simply to running a grader along the proposed track, with the blade slightly above ground level. Vegetation cleared in this manner will be left in a windrow immediately adjacent to the access track – for the duration of construction.

At each pole location a standard truck mounted auger will then dig a footing. An off-site pre-fabricated cage will then be installed in each footing, and a concrete agitator truck would pour the foundation. Concrete foundations would then be left to cure over a nominal 14 day period.

The foundations will be established sequentially allowing the next stage of construction (pole erection) to commence after the last pole foundation is poured.

Pole Erection

A crew of three along with a crane operator and rigger would then erect the 16 poles.

Stringing Conductor

Conductor would be delivered to select poles by a standard truck (fitted with a winch). A line crew of six would then string the conductors.

Rehabilitation

Immediately after the transmission line is energised the access track cleared to enable construction access would be reinstated. AGL do not need or intend to maintain this access track post construction.

The rehabilitation technique will include shallow ripping of the access track to restore the soil's infiltration capacity and reverse any effects of compaction that have resulted from vehicle movements.

The windrowed vegetation would then be pulled back over and spread to facilitate revegetation. On the advice of OEH, discussions were held with the Department of Primary

Industries (Mineral Resources) in Broken Hill to discuss techniques for rehabilitation that work in the Broken Hill environment. These discussions indicate very little re-seeding (either broadcast or direct seeding) is undertaken in this region. Instead, pulling vegetation back over temporarily disturbed areas to assist in moisture control, as well as trapping and sheltering the seed bank, was identified as a rehabilitation technique that does work in this region.

These works will be undertaken immediately on completion of construction works and will help ensure revegetation with locally endemic native species.

3.4 Scheduling

Construction will commence in end-June 2014 with site demobilisation completed by end-October 2014.

The construction timeframe is 2.5 months (10 weeks).

4 CUMULATIVE IMPACTS

4.1 Requirement

COA C2(b) states the CEMP must include:

> *identification of the potential for cumulative impacts with other construction activities occurring the vicinity and how such impacts would be managed.*

4.2 Staging

The program for the entire project is for a 17 month construction period.

The intent is for the grid connection to be completed at the beginning of the project to allow the PV plant to be progressively commissioned.

This consideration, and the way in which the project is being staged, means that CPP's construction activities are to occur in isolation of other significant construction activity occurring on the site, or in the locality.

For example, First Solar's draft schedule for material delivery is as follows:

- August 2014 to May 2015 – posts, tilts, tables, construction equipment, electrical and cables;
- January 2015 to June 2015 – solar PV modules
- January 2015 to June 2015 – inverters, transformers and shelters.

As evident from the above, the construction of the solar arrays will commence after CPP has completed its construction works on the grid connection.

First Solar construction activity likely to be occurring at the same time as CPP is building the grid connection will be restricted to formation of the internal access roads, fencing and installation of the site office and maintenance office buildings. These First Solar works are scheduled to commence in July 2014.

Further, CPP's construction will only commence after initial enabling works have been completed. These enabling works include upgrade of the site access road intersection with the Barrier Highway and the establishment of ancillary facilities/construction work sites.

The potential for a significant cumulative impact is remote.

4.3 Management

CPP will provide regular updates and maintain constant liaison with both First Solar and AGL prior to and during the grid connection construction.

If and as required CPP will accommodate flexibility in scheduling in order to ensure that significant cumulative impacts are avoided.

5 SITE COMPOUND

5.1 Requirement

COA C2(c) states the CEMP must include:

> *details of any construction sites and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented.*

5.2 Location

CPP will be provided a dedicated temporary construction compound (80 m x 30 m) inside the chain link fenced solar plant site, refer **Drawings Section 28**.

This compound will itself be fenced. Construction facilities for CPP will include an amenities building, ablutions and lay down area for equipment storage.

This compound has been selected on the basis that it satisfies the location criteria specified in COA B1.

These criteria include:

a) be located more than 50 metres from a waterway;

b) be located within or adjacent to the Site;

c) have ready access to the road network;

d) be located to minimise the need for heavy vehicles to travel through residential areas;

e) be sited on relatively level land;

f) be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);

g) not require vegetation clearing beyond that already required by the Project;

h) not impact on heritage sites (including areas of archaeological sensitivity) beyond those already impacted by the Project;

i) not unreasonably affect the land use of adjacent properties;

j) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and

k) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.

5.3 Restoration

Immediately after construction is complete CPP will remove all materials from its construction compound (80m x 30m), dismantle the fence, lightly rip/scarify the ground surface and re-spread the stockpiled topsoil and vegetative matter, to facilitate natural regeneration.

Consistent with COA B23, CPP will retain responsibility for reinstatement of this compound area until the health of this revegetated area has 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.

Post construction, and until the independent expert verifies that the compound area is well established, in good health and self-sustaining, CPP will undertake annual monitoring inspections to check the progress of the rehabilitation and stability of the site, complemented initially with inspections following significant localised rainfall events.

6 STATUTORY OBLIGATIONS

6.1 Requirement

COA C2(d) states the CEMP must include:

> *statutory and other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies.*

6.2 Approvals / Agreements

- Approval is required under s.45 of the *Electricity Supply Act 1995* for development of the proposed transmission line.
- Approval for the 22kV transmission line crossing of the Australian Rail Track Corporation (ARTC) rail corridor (ie. the Peterborough-Broken Hill rail line) shall be applied for in accordance with the process described in ARTC's *External Party Access Handout 8.1*.

No other additional approvals or licences are noted as required.

6.3 Obligations

Conditions of Approval (COA) attached to the project approval (MP10_0202) and Statement of Commitments (SOC) made in the Preferred Project Report identify obligations that CPP must act on during construction.

Appendices I and **L** of this CEMP provide a summary of all COA and SOC, including comment on their relevance to the CPP's scope of works, and the section within this CEMP where these obligations are addressed.

7 AGENCY CONSULTATION

7.1 Requirement

COA C2(e) states the CEMP must include:

> *evidence of consultation with relevant public authorities required under this condition and how issues raised by the agencies have been addressed in the plan.*

7.2 Relevant Public Authorities

Consultation requirements in COA C2 include the following:

- COA C2: Broken Hill Council and the Crown Lands Division of the Department of Trade and Investment for the Construction Environmental Management Plan;
- COA C2(l): NSW Office of Water for soil and water impacts and COA C2(m) for flood impacts.
- COA C3(a): Office of Environment and Heritage for the Flora and Fauna Management Plan.
- COA C3(b) Crown Lands Division of the Department of Trade and Investment for the Ground Cover Management Plan.
- COAC3 (e): Broken Hill Council, Crown Lands Division of the Department of Trade and Investment, and Roads and Maritime Service for the Traffic Management Plan.
- COA C3(f)- Office of Environment and Heritage for the Aboriginal Heritage Plan.

7.3 Evidence

Evidence of this consultation can be found in **Appendix C**.

8 ROLES AND RESPONSIBILITIES

8.1 Requirement

COA C2(f) states the CEMP must include:

> *a description of the roles and responsibilities for all relevant employees involved in the construction of the project 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 approval.*

8.2 Project Manager

The role of a Project Manager, as it relates to this CEMP, is to:

- 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 Manager, 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 the Site Manager 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.

The CPP Project Manager is Grant Johnstone (mobile: 0417 469975).

8.3 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.

The CPP Site Manager is Mark Denny (mobile: 0428 303 367)

8.4 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.

8.5 Project Ecologist

Statement of Commitment (SOC) FF5 requires an ecologist to undertake a pre-clearing survey and to be present during all clearing activities. CPP will engage the services of an appropriately qualified Project Ecologist to undertake this task.

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

- Undertake the pre-clearing survey as required by SOC FF5.
- Provide input relating to ecological obligations.

8.6 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.

8.7 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.

8.8 Environmental Representative

Condition of Approval (COA) 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.

It is understood that the approved Project Environmental Representative (ER) for the Broken Hill Solar Plant is Michael Woolley of MCW Environmental. CPP will co-operate and liaise with the nominated ER prior to, during and post construction – as required.

8.9 Training and Induction

8.9.1 Requirement

All personnel, prior to starting work on the site, shall be made aware of the requirements of this CEMP and COA and SOC relevant to their respective activities.

8.9.2 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.

8.9.3 Competency Register

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

8.9.4 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.

8.9.5 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.

This project specific induction session will include obligations relevant to this Construction Environmental Management Plan.

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.

8.9.6 Project Induction

A Project Induction has been prepared by CPP for the Broken Hill project. Please refer to **Appendix M**.

The scope of this Induction includes:

- Work Health and Safety Management
- Environmental Management
- Quality Management
- Scope of Works for the Project
- Tasks being conducted on the project
- Emergency Response
- Injury Management

9 MONITORING ENVIRONMENTAL PERFORMANCE

9.1 Requirement

COA C2(g) states the CEMP must include:

> *details of how the environmental performance of construction will be monitored, and what actions will be taken to address identified potential adverse environmental impacts.*

9.2 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.

9.2.1 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

9.2.2 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.

9.3 Audits and Inspections

9.3.1 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 its purpose;
- Check that the routine site records are being maintained and filed by the Site Manager;
- Review of Incident Management 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 COA and SOC;
- 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 documented.

9.3.2 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.

9.4 Meetings and Reports

9.4.1 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.

9.4.2 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.

9.4.3 AGL Reporting Data

Specific environmental compliance data will be provided to AGL to enable AGL to discharge their obligations in respect of environmental reporting for the solar farm project.

9.5 Corrective Actions

9.5.1 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 or construction techniques/practices that present an unacceptable environmental risk.

Non-conforming activities including non-conformance to this plan, procedures, safe work method statements, environmental obligations pursuant to requirements of this CEMP, 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.

9.5.2 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.

The type of corrective action taken following issuance of an improvement notice will depend on the nature of the non-compliance.

Corrective actions could include:

- A critical review of the training needs analysis, comparing *REG-H002 Qualifications and Training Matrix* and *REG-H003 Competency Register*. Deficiencies identified will be recorded in *FRM-H002 Training Request Form* and would result in further targeted training for the relevant employees and contractors.
- Changes to Work Methods Statements
- Consultations with Environmental Representative (as required) to decide upon a suitable Corrective Action.
- Disciplinary action against an employee or contractors.

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.

10 STATEMENT OF COMMITMENTS

10.1 Requirement

COA C2(h) states the CEMP must include:

> *specific consideration of relevant measures identified in the documents referred to under conditions A2b) and A2c) of this approval.*

Document A2b) is the *Broken Hill Solar Plant Environmental Assessment* prepared by Sinclair Knight Merz dated October 2012.

Document A2c) is the *Broken Hill Solar Plant Submissions and Preferred Project Report* prepared by Sinclair Knight Merz dated February 2013.

Relevant measures in the above documents, as they relate to safeguards to be employed prior to, during and post construction, are identified as Statement of Commitments (SOC). The preferred project report provides the updated and complete list of SOC.

10.2 Evidence

Appendix L of this CEMP provide a summary of all Statement of Commitments (SOC), including clarification on their relevance to the CPP element of the project (ie. the grid connection works as opposed to First Solar's construction responsibilities), and the sections within this CEMP where these SOC are addressed.

11 CONDITIONS OF APPROVAL

11.1 Requirement

COA C2(i) states the CEMP must include:

> *the additional requirements of this approval.*

11.2 Evidence

Appendix K of this CEMP provides a summary of all Conditions of Approval (COA), including clarification on their relevance to the CPP element of the project (ie. the grid connection works as opposed to First Solar's construction responsibilities), and the sections within this CEMP where these COA are addressed.

12 COMPLAINTS HANDLING PROCEDURES

12.1 Requirement

COA C2(j) states the CEMP must include:

> *a complaints handling procedure during construction identified in conditions C12 and C14.*

12.2 Initial Response

If any complaint is received, regardless of the means, CPP will immediately investigate and provide an initial notification/response to AGL.

12.3 Investigation and Reporting

The response and action taken will be recorded in a documented Complaints Register.

This Register will record:

- the date and time of the complaint;
- the means by which the complaint was made;
- any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
- the nature of the complaint;
- any actions taken by CPP in relation to the complaint, including timeframes for implementing the action; and
- if no action was undertaken by CPP in relation to the complaint, the reasons why no action was taken.

CPP will provide AGL with a copy of any complaints investigation no later than 48 hours after the complaint was received.

12.4 AGL Interface

It is noted that during the construction phase community consultation and complaints handling would be the primary responsibility of the Proponent (AGL).

CPP will ensure that any complaint is reported to AGL so that environmental impacts associated with the entire project (ie. including First Solar's construction activities) can be monitored, and comply with the reporting requirements and protocols specified in AGL's *Community Consultation Plan: Broken Hill and Nyngan Solar Plants* (5 July 2013).

13 WORK HAZARDS

13.1 Requirement

COA C2(k) states the CEMP must include:

> *a register of construction hazards and the anticipated level of risk associated with each.*

13.2 Risk Management

13.2.1 Project Hazards, Risks, Aspects and Impacts Workshops

The Project Manager has prepared an aspects and impacts register following a review of client's documentation (refer **Appendix D**).

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 are recorded on *REG-G001 Aspects and Impacts Register*.

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.

13.2.2 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.

13.2.3 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.

13.2.4 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.

13.2.5 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*.

13.3 Risk Assessment

The following information describes how CPP have assessed risk and the relevant controls proposed.

13.3.1 Consequence

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

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

Consequence	Impact					
		Personal Impact	**Environmental Impact**	**Community Impact**	**Financial Impact**	**Corporate Impact**
	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.

13.3.2 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

13.3.3 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

13.3.4 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.

13.3.5 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)

13.3.6 Responsibility

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

14 SOIL AND WATER IMPACTS

14.1 Requirement

COA C2(l) states the CEMP must include:

> *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 to groundwater interference, and procedures for managing groundwater impacts should they occur.*

14.2 Potential for Impacts

Construction of the 2.7 km of transmission line will not entail any civil earthworks that require significant excavation or disturbance to the soil resource.

Works would commence with partial clearance of the transmission line alignment to provide access to the 13 new pole locations. This is needed for part of the construction work; specifically, stringing of the conductor after the poles are erected.

This access would be no more than 4m wide. Vegetation clearing associated with establishing this access will not entail grading into soil. No earthworks are required, or proposed, in terms of building an access track formation. Vegetation clearing would be restricted to running a grader along the proposed track alignment, with the blade slightly above ground level. Vegetation cleared in this manner will be left in a windrow immediately adjacent to the track – but only for the 10 week construction period.

The 18 power poles will then be delivered by standard articulated truck direct to their erection points. A standard truck mounted auger will then dig a footing. An off-site pre-fabricated cage will then be installed in each footing and a concrete agitator truck would pour the foundation. Concrete foundations would then be left to cure over a nominal 14 day period. The foundations will be established sequentially allowing the next pole erection to commence after the last pole foundation is poured. A crew of three, along with a crane operator and rigger, would then erect the 18 poles.

Construction vehicle movements associated with this activity will gain pole to pole access by weaving the access in and around vegetation to pick cleared areas and minimise the disturbance to herbage, as well as opportunistically utilise some of the numerous formed access tracks that already traverse the Willyama Common.

The figures below demonstrate the extent to which existing tracks can be used for construction vehicles.

Figure Key: On Figures 14.1 to 14.4 red lines denote vehicle routes for construction traffic and back dots denote the location of power poles.

Figure 14.1:

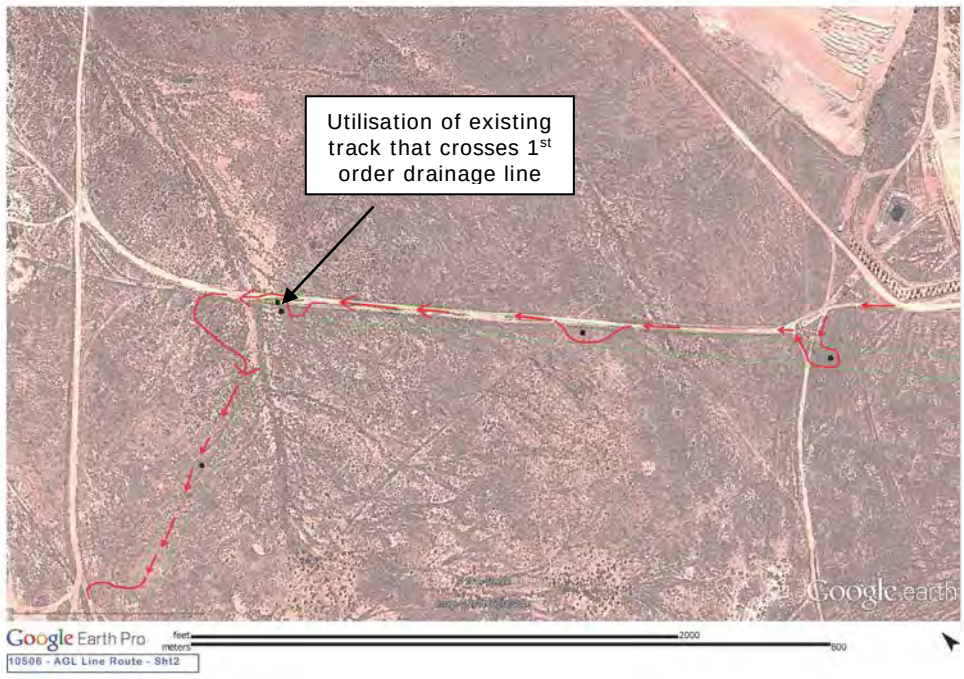


Figure 14.2:

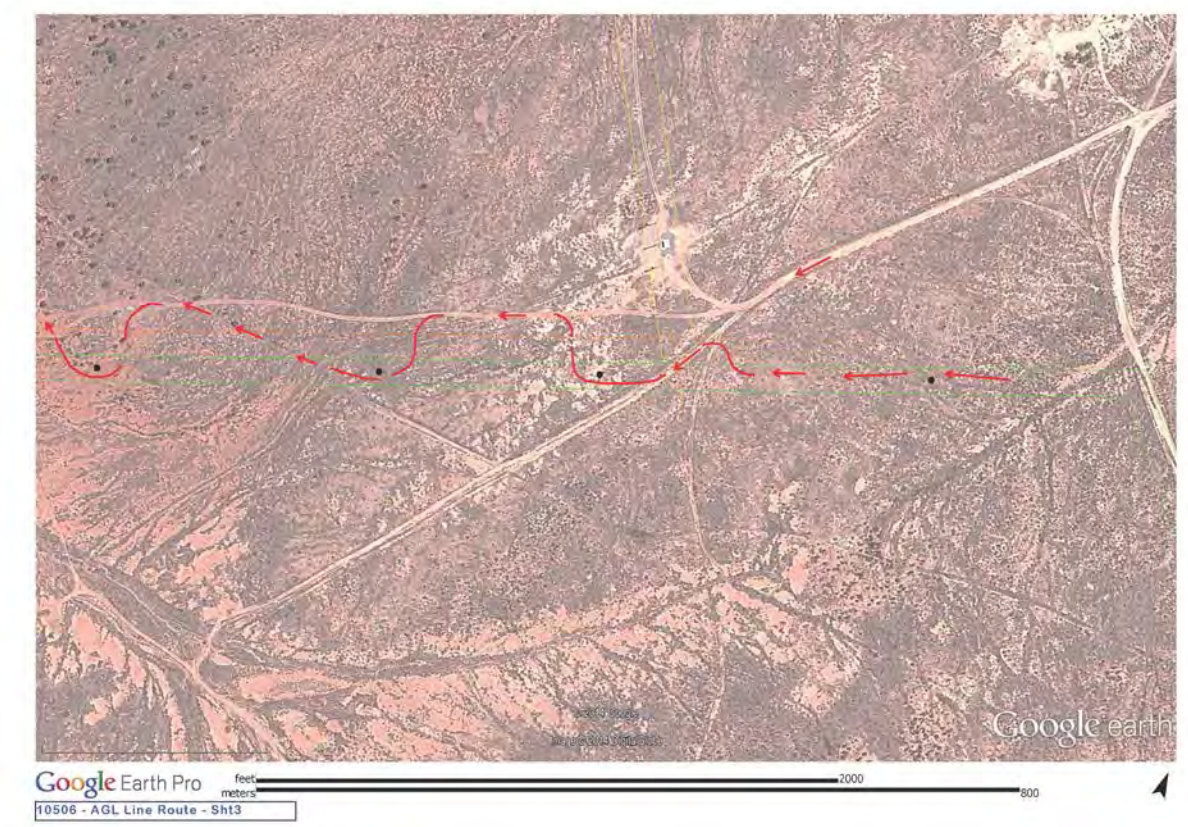

Google earth
Google Earth Pro
feet
meters
2000
800
10506 - AGL Line Route - Sht3

Figure 14.3:

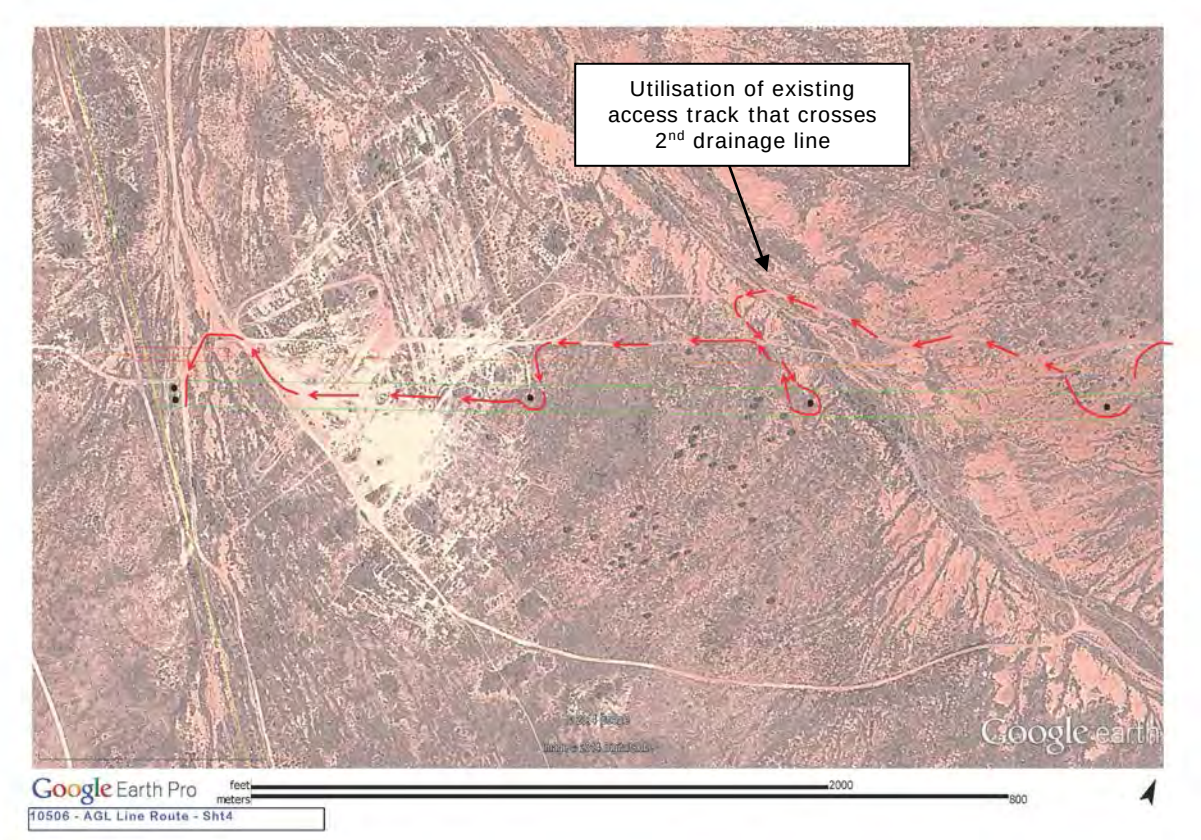


Figure 14.4:

After the poles are erected, conductor would then be delivered to select poles by a standard truck (fitted with a winch). A line crew of six would then string the conductors. It is this activity that would generate vehicle movements on the partially cleared 4m strip along the full transmission line alignment.

14.3 Rehabilitation of Access Track

Immediately after the transmission line is energised the partially cleared access track along the alignment would be reinstated. AGL do not need or intend to maintain this access track post construction.

The rehabilitation technique will include shallow ripping of the access track to restore the soil's infiltration capacity and reverse any effects of compaction that have resulted from vehicle movements.

The windrowed vegetation would then be pulled back over and spread to facilitate natural revegetation. On the advice of OEH, discussions were held with the Department of Primary Industries (Mineral Resources) in Broken Hill to discuss techniques for rehabilitation that work in the Broken Hill environment. These discussions indicate very little re-seeding (either broadcast or direct seeding) is undertaken in this region. Instead, pulling vegetation back over temporarily disturbed areas to assist in moisture control, as well as trapping and sheltering the seed bank, was identified as a rehabilitation technique that does work successfully.

These reinstatement works will be undertaken immediately on completion of construction and will help ensure revegetation with locally endemic native species.

14.4 Works Close to Waterways

The alignment of the transmission line traverses two watercourses. These include a First Order tributary and a Second Order tributary of Stirling Vale Creek (refer **Figure 14.5** below).

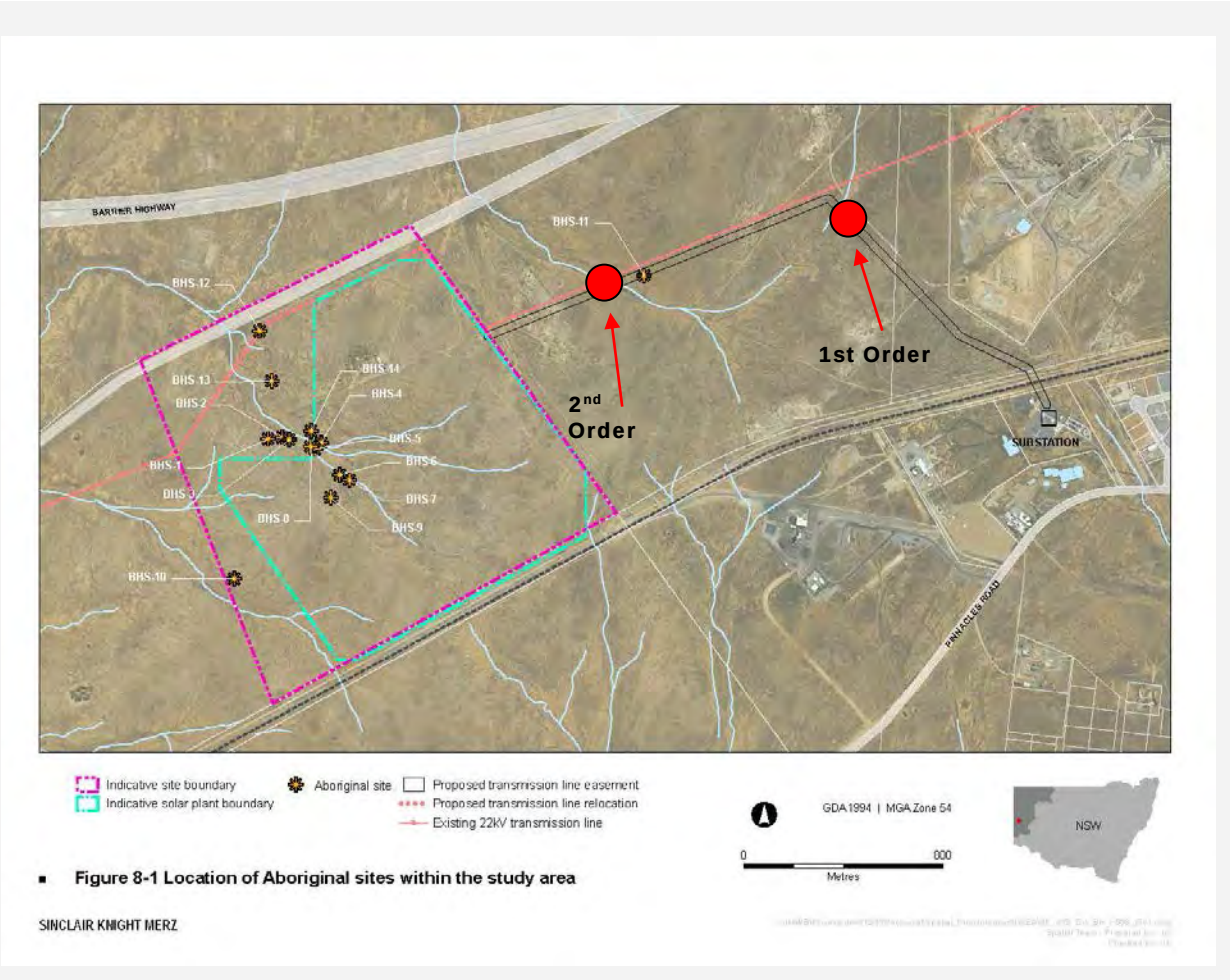


Figure 14.5: Watercourse Crossing

New impacts to these watercourses will be avoided. CPP will achieve this by utilising the existing access tracks that cross these two watercourse (refer **Figures – 14.1-14.4**).

The number of vehicles, their type, and the duration of the construction period (ie. 10 weeks) is modest. Vehicles would be restricted to standard rigid trucks and light utility vehicles. No over-mass or oversize heavy articulated vehicles will need to cross these watercourses.

The following principles will be applied by CPP with respect to minimising potential impacts to either of these watercourses.

- These two watercourses will not be traversed if there is any flow.

- Nothing will be placed in a watercourse or on waterfront land that will raised the height of the bed or have the potential to impact on the existing hydraulic, hydrologic, geomorphic or ecological function.
- No new watercourse crossings will be established.

14.5 Controlled Activity Approval

A controlled activity approval authorises its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land. Under the *Water Management Act 2000* a controlled activity means:

(a) the erection of a building or the carrying out of a work (within the meaning of the *Environmental Planning and Assessment Act 1979*), or

(b) the removal of material (whether or not extractive material) or vegetation from land, whether by way of excavation or otherwise, or

(c) the deposition of material (whether or not extractive material) on land, whether by way of landfill operations or otherwise, or

(d) the carrying out of any other activity that affects the quantity or flow of water in a water source.

There are a number of exemptions from the need to obtain an approval to carry out controlled activities on waterfront land; including exemptions for a vehicle crossing, or an access track on waterfront land on a 'minor stream' in a rural zone if it does not impound water. A 'minor stream' includes any stream or part of a stream that is a first or second order stream, or part of such a stream, as determined in accordance with the Strahler system of determining stream order.

The two watercourses that will be traversed during construction are minor streams.

14.6 Construction Compound

CPP will be provided a dedicated temporary construction compound (80m x 30m) inside the chain link fenced solar plant site (refer **Drawings Section 28**). This compound will itself be fenced. Construction facilities for CPP will include an amenities building, ablutions and lay down area for equipment storage.

Topsoil will be stripped and temporarily stockpiled from within this compound for the duration of the construction program (ie. 10 weeks).

Immediately after construction is complete CPP will remove all materials from this compound, dismantle the fence, lightly rip/scarify the ground surface, re-apply the topsoil that has been stockpiled to facilitate natural regeneration.

14.7 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.
- Ensure no stockpiles of spoil, fill or erodible material is placed in or near watercourses or drainage lines.

- Ensuring that no vehicle crosses either of the two watercourses if they have a flow.
- Following any rainfall event access tracks will be inspected to ensure that they can be used without causing erosion or sedimentation, and that erosion control structures and measures in place remain effective.
- Undertake daily checks that there are no visible signs of erosion, and that the control measures installed are being properly maintained.
- Vehicles will be restricted to access tracks.
- 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-C063 Site Weekly Review Log*.

It is noted that the specification of the above management procedures for managing soil and water impacts were developed in consultation with the NSW Office of Water and deemed appropriate (refer **Appendix C** for evidence).

14.8 Groundwater Interference

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

The deepest excavation (to be completed by a truck mounted auger) will be that associated with the 18 poles. The depth of excavation will be approximately five (5) metres.

The Environmental Assessment indicated that the known standing water level of the nearest bore to the site is 17.7 metres.

Subsequent consultation with Broken Hill City Council has established that Council has six (6) bores at its landfill site adjacent to the Solar Farm development, and the standing water level can be as shallow as six (6) metres, but is generally 13 to 15 metres.

In the extremely unlikely event that any dewatering was required, the following criteria would be applied.

Discharge of water to the environment would be undertaken in a manner that avoids 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 drainage lines.
- Energy dissipation must be provided at the surface of any dewatering discharge outlet.
- Dewatering discharge would be pumped into a filtered outlet (ie. haybale).

15 FLOOD IMPACTS

15.1 Requirement

COA C2(m) requires the CEMP to include measures to:

monitor and manage flood impacts in consultation with NOW.

15.2 Inundation Potential

Flood modelling undertaken as part of the hydrology assessment that supported the approved Environmental Assessment has established that the grid connection works are located on lands that fall above those sections of the solar plant site that could be subject to inundation in a 100 year ARI event.

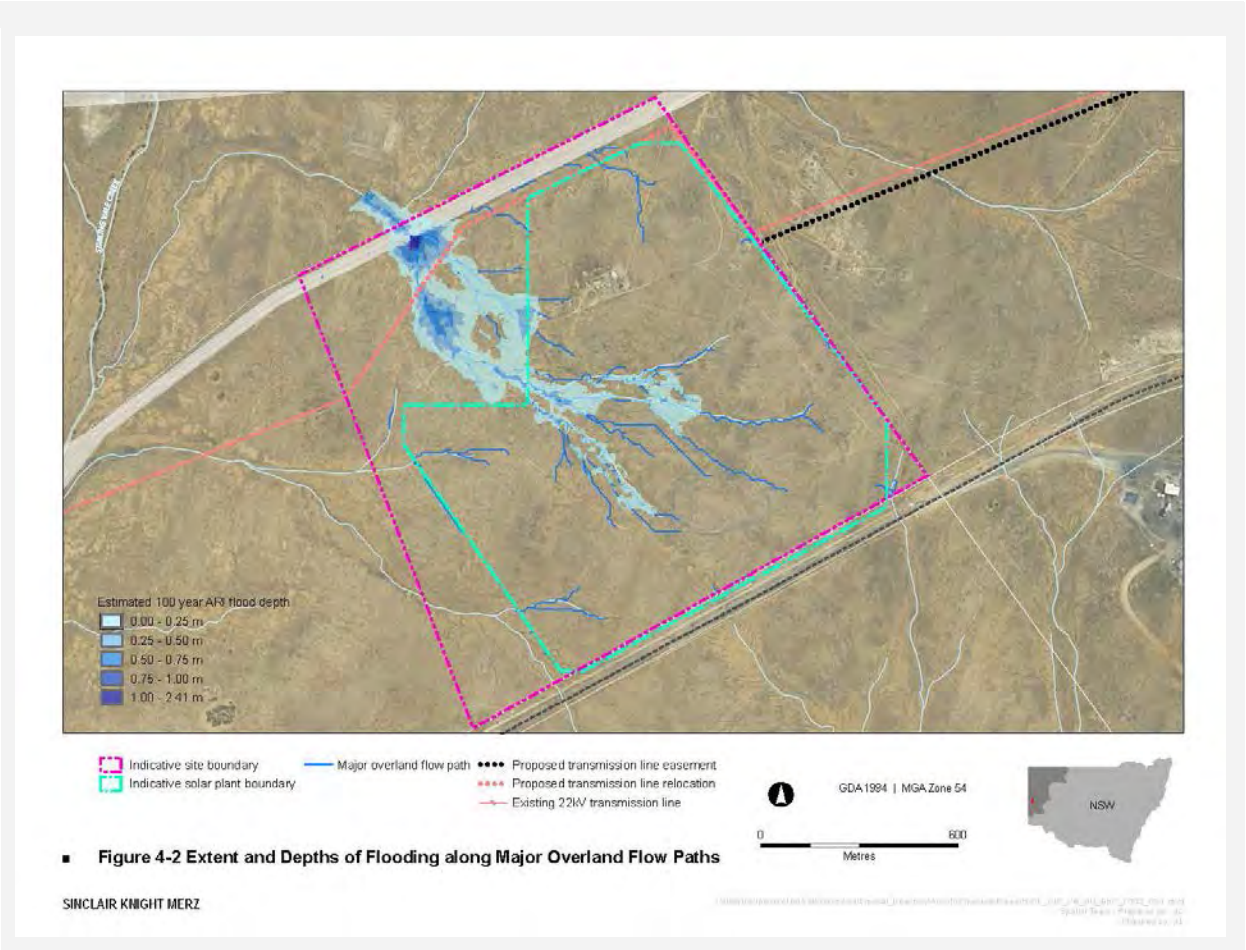


Figure 15.1: Hydrology Assessment

15.3 Measures

CPP's Project Manager will monitor weather conditions throughout the construction period (ie. June to October 2014) and the construction site will be made secure and temporarily vacated in the event of localised flooding.

Securing the construction site will include locking tools and equipment into containers, locking the site office, locking the site compound and leaving the site.

16 DUST SUPPRESSION

16.1 Requirement

COA C2(n) requires the CEMP to include measures to:

> *monitor and manage dust emissions including dust generated by traffic on unsealed public roads and unsealed internal access tracks.*

It is noted that CPP will not have any construction traffic on unsealed public roads.

16.2 Management Measures

- Part of the induction program will include instruction to all personnel and contractors to drive at low speeds (<15km/hour) on unsealed access tracks, and the need to restrict movements to designated access tracks.
- Areas of soil disturbance will be kept to a minimum for construction purposes and be stabilised as soon as practical.
- Work vehicles/machinery would not be left running or idling when not in use.
- Plant would be fitted with appropriate emission controls and would undergo periodic and regular maintenance to reduce exhaust emissions.
- Any vehicular loads of spoil and other particulate material would be suitably covered during transport and a minimum 300mm freeboard maintained.
- No burning of vegetation or waste material would take place on the construction site.
- If and as required, strategic watering by a water cart would be undertaken.
- In adverse conditions (dry and windy), consideration would be given to temporarily cease construction activity if off-site impacts are likely.
- Monitor weather conditions on a daily basis;
- Minimise dust generating activities during periods of high wind and dry conditions;
- Vehicles leaving the site will be checked to ensure they are clean of dirt, sand and other material.

  If a vehicle not clean of dirt, sand or other material is found leaving the site this will result in issuance on non-compliance and be recorded on a *FRM-M002 Continuous Improvement Notice*. A suitable Corrective Action will then be implemented.
- 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;

16.3 Monitoring

- Construction areas would be monitored continually for dust generation so that appropriate dust suppression measures can be implemented in a timely manner.
- Particular attention will be paid to any construction works in September as Council has advised this is the windiest month, with wind gusts up to 70 kms throughout the month.
- Should visible dust emissions attributable to the development occur during construction, the occurrence will be immediately investigated the need for additional safeguards will be

determined and, if required, implemented (eg. temporary cessation of activity or strategic watering).

17 EMERGENCY MANAGEMENT & BUSHFIRE CONTROL

17.1 Requirement

COA C2(o) requires the CEMP to include:

information on emergency management measures including measures to control bushfires.

17.2 Emergency Management Measures

17.2.1 Planning

The Site Manager will prepare emergency response procedures prior to commencing construction 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.

17.2.2 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*.

17.3 Bushfire Risk

17.3.1 Overview

The works site is located in an area that is not prone to bushfires and the surrounding vegetation has been assessed as presenting a low bushfire risk. The Environmental Assessment concluded that due to this low risk, a dedicated water supply for fire fighting purposes would not be required during construction. The project was approved on this basis.

It is also noted that works are scheduled for June start and October finish – outside the bush fire period.

17.3.2 CPP Emergency Contact

Fire and Rescue NSW (Broken Hill Station 238) will be provided with 24 hour a day, 7 day a week access to a nominated CPP contact. This contact will be:

Project Manager
Mr Grant Johnstone
Mobile: 0417 469 975
Email: gjohnstone@conpower.com.au

17.3.3 Stakeholder Liaison

COA B4 required regular consultation with the local RFS to ensure its familiarity with the development, including the construction timetable and the final location of all infrastructure on the site.

On the advice of Broken Hill Council, and confirmed through consultation with Fire and Rescue NSW (Broken Hill Station 238), the most appropriate emergency contact is Fire and Rescue NSW rather than the Rural Fire Service, as the Broken Hill Fire Brigade generally respond to situations in the Broken Hill Region, and the development is only 5 kilometres outside of the City.

CPP will comply with any reasonable request of the Fire and Rescue NSW to reduce the risks of bushfire and to enable fast access in emergencies. CPP will also notify, in advance, Fire and Rescue NSW of the construction timeframe and when CPP will start and finish works.

Liaison and consultation with the Fire and Rescue NSW will be carried out by CPP prior to and during construction, consistent with the above requirements.

The appropriate Fire and Rescue NSW contact for notification and any ongoing consultation is detailed below:

Station Officer
Station 238
Fire and Rescue NSW
Phone: 08 80872233

In the event of an emergency, the appropriate contact is to call 000.

17.3.4 Mitigation Measures

- All construction work would be carried out in accordance with standard procedures, practices and guidelines for bushfires set out in relevant transmission line agency manuals.
- Only construction plant fitted with the manufacturer's emission controls would be utilised and plant would be subject to maintenance consistent with the manufacturer's recommendations.
- No burning of vegetation or waste material would take place on the construction site.
- CPP will have hand operated fire extinguishers available in all vehicles. This is the only type of fire fighting equipment proposed. 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.
- The fire danger status would be monitored daily (through the RFS website http://www.rfs.nsw.gov.au) and communicated to personnel daily.

- CPP will adhere to Total Fire Ban rules. That is, CPP will not (in any grass, crop or stubble land) drive or use any motorised machine unless the machine is constructed so that any heated areas will not come into contact with combustible matter; the machine is maintained in a good and serviceable condition so as to prevent the outbreak of fire; carry out welding operations or use 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.
- It is not anticipated that any fuel or flammable liquid will be stored on-site. If any is, this material would be stored in a designated area and will be sign posted "Fuel storage area." A register will be maintained that confirms the quantities and location of any flammable material stored on-site.

17.3.5 Hot works

Hot Works are considered to be any operations that will generate heat, sparks, or flame. Hot works conducted at any time of year requires the Site Manager to issue *FRM-S018 Hot Work Permit*.

It is noted however that CPP do not envisage the need to undertake any Hot Works.

In the unlikely event that Hot Works are required, the Site Manager will issue a *FRM-S018 Hot Work Permit*.

17.3.6 Fire Fighting Equipment

Prior to this construction commencing the Project Manager and Site Manager will confirm 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*.

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.

Fire fighting equipment 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.

CPP will have hand operated fire extinguishers available in all vehicles. This is the only type of fire fighting equipment proposed.

17.3.7 Asset Protection

Pursuant to COA B3 and SOC HR2, the transmission line will be constructed *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).*

Asset protection for an overhead 22kV electricity transmission line is derived from the establishment and maintenance of appropriate vegetation clearance zones within the easement.

No vegetation clearing is required to achieve acceptable electrical clearances. The line route, the type of vegetation and the height of the poles allow for the new line to be energised without the need for any vegetation removal.

18 WATER SOURCES

18.1 Requirement

COA C2(p) requires the CEMP to include:

information on water sources.

18.2 Demand

Apart from water for dust suppression, CPP does not require any other water for its construction program. Further, strategic watering for dust suppression will be a last resort. The primary means of dust control will be strict regulation of vehicle speeds on unsealed access tracks. Controlling speeds to less than 15km/hr can reasonably be expected to be an effective mitigation measure for most of the time.

Where circumstances dictate the need for watering, CPP will engage the services of a contractor who would source water from Broken Hill Council's supply.

19 DANGEROUS GOODS

19.1 Requirement

COA B5 requires that 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 any inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of that inconsistency.

19.2 Diesel Fuel

Dangerous goods that will be used during construction of the transmission line will be restricted to diesel fuel for the construction plant and equipment.

Re-fuelling would either be undertaken off-site (petrol station) or by a mobile mini-fuel tanker fitted with a spill kit.

No major maintenance of plant would be undertaken on-site.

19.3 Storage

Any dangerous good stored on the construction site would be stored in a securely bunded area of sufficient containment capacity.

Where dangerous goods are to be stored on the construction site, an effective spill kit would be available for use at all times.

All containers used to store substances would 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).

19.4 Purchasing

Whilst no dangerous goods are expected to be used, in the event that they are needed the following procedures would be followed.

The person responsible for purchasing any dangerous good must ensure that the safety data sheet (SDS) is consulted before the material is purchased.

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

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

19.5 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.

20 INCIDENT MANAGEMENT

20.1 Requirement

COA C8 requires that:

The Proponent shall notify, at the earliest opportunity, the Director General and any other relevant agencies of an incident that has caused, or threatens to cause, material harm to the environment. For any incident associated with the project, the Proponent shall notify the Director-General and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within seven days of the date of the incident, the Proponent shall provide the Director General any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

AGL is the Proponent.

20.2 Incident Management

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 incident has had, or does have the potential to cause material harm to the environment.
7. Site Manager then immediately reports detail to the Project Manager.
8. CPP's Project Manager will then immediately notify AGL (the proponent) and the Environmental Representative so that AGL can exercised its obligations under COA C8.
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;
   - Fire and Rescue (where 000 was not initially called).
10. Site Manager to advise First Solar of incident;
11. Site Manager to initiate incident investigation.

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.

20.3 Incident Investigation and Reporting

Regardless of whether the incident has caused, or threatens to cause, material harm to the environment, CPP will document the incident and provide AGL with a preliminary Incident Report within 48 hours of the incident.

The Project Manager and Site Manager will ensure that incidents, regardless of how significant or insignificant they may appear, are investigated. *FRM-S001 Incident Investigation Report Form* will be utilised for this purpose.

If required CPP will then co-operate fully with any further requests from either AGL, the Director General or any other relevant agencies.

CPP would commit to ensuring that all necessary information is provided to AGL in a timely fashion, to ensure that their obligations can be met.

21 SERVICES AND UTILITIES

21.1 Requirement

COA B14 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.

COA A11 states:

Prior to commencement of construction, the Proponent shall provide written evidence to the satisfaction of the Director General that the lease agreements with the Crown Lands Division of the Department of Trade and Investment have adequate provisions to require that decommissioning occurs in accordance with this approval, and is the responsibility of the proponent.

21.2 Actions

Part of the Enabling Works for the project include the diversion underground of the existing 22kV line that traverses the solar plant site, and installation of the potable water supply line and easement to an existing landowner. These enabling works will be completed prior to construction commencing.

CPP will not commence construction until AGL confirm compliance with COA A11.

22 WASTE MANAGEMENT

22.1 Requirement

COA B11 to B13 state:

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, SOC W1 to W3 state:

W1. All works to be conducted in accordance with the waste management hierarchy established by the Waste Avoidance and Resource Recovery Act 2001.

W2. Excavated spoil will be reused on the project site for fill or landscaping, where possible.

W3. Native vegetation cleared for the project will be used in site restoration and landscaping or 'wind rowed' along the edges of the transmission line easement, where possible.

22.2 Waste Generated

CPP construction activity will not generate significant quantities of waste. Likely wastes would be restricted to:

1. Minor quantities of surplus subsoil excavated from the 18 poles. Where possible, this material would be utilised on-site. Criteria for use on site will include:
    - Placement of sub-soil must not interfere with existing drainage patters.
    - Sub-soil placed on site must be covered with top-soil to facilitate revegetation.
2. Vegetation cleared for the temporary access track will, consistent with the reinstatement and rehabilitation program, be pulled back over the track to facilitate regeneration.

The re-use for surplus sub-soil and vegetation to facilitate rehabilitation of the temporary construction impacts is consistent with the objectives of the waste management hierarchy established by the *Waste Avoidance and Resource Recovery Act 2001*. That is, this material will be re-used rather than be disposed.

Further, flexibility in selecting the access track alignment to avoid vegetation, and restricting the track to just 4m width, avoids generating excess quantities of cleared vegetation.

No liquid waste would be generated as a result of CPP's construction works. Chemical toilets would be provided within the temporary construction compound, and as such there is no need to provide for removal of sullage.

22.3 Actions

CPP will ensure that any waste material removed from the site is directed to a legally operating waste management facility.

Waste generated on the site will be assessed and classified in accordance with Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2009), or any superseding document.

CPP will not accept any waste generated from outside of the construction site.

22.4 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.

23 WEED MANAGEMENT

23.1 Requirement

SOC FF9 states:

Appropriate weed management strategies will be implemented during construction and operation.

23.2 Measures

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

23.2.1 Mobile Plant

All mobile plant required during the course of this project will both arrive to and leave from site clean.

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.

23.2.2 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;

23.2.3 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;
- 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

23.2.4 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.

24 SPILL MANAGEMENT

24.1 Assessment

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

24.2 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*.

24.3 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*.

24.4 Spill Management

Spill kits would be provided and maintained for any 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.

25 SITE REHABILITATION

25.1 Requirement

COA B23 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 project including temporary construction facility sites and sections of constructions access roads. The Proponent 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 Proponent 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.

COA B2 also states:

All Ancillary Facilities shall be rehabilitated to at least their pre-construction condition, unless otherwise agreed by the Crown Lands Division of the Department of Trade and Investment.

In addition to the above, SOC FF7 and FF 8 state:

FF7 Degraded portions of the site outside of the impact footprint will be restored to the extent required to a) reduce the potential for wind erosion, b) improve opportunities for fauna habitation and movement across the landscape, and c) reduce the risk of weed invasion.

FF8 Site restoration and re-vegetation activities will be undertaken during and after construction. All revegetation activities will be undertaken using locally endemic native species.

25.2 Temporary Disturbance Zones

Temporary disturbance zones include those areas which are disturbed during the construction phase but which are not required for the ongoing operation of the project.

As it relates to CPP's construction activities, this is restricted to two specific areas.

1. The temporary construction compound.
2. The 4m wide access track along the transmission line alignment.

25.3 Restoration Works

25.3.1 Access Track

Immediately after the transmission line is energised the access track would be reinstated. AGL do not need or intend to maintain this access track post construction.

The rehabilitation technique will include shallow ripping of the access track to restore the soil's infiltration capacity and reverse any effects of compaction that have resulted from vehicle movements.

The windrowed vegetation would then be pulled back over and spread to facilitate natural revegetation. On the advice of OEH, discussions were held with the Department of Primary Industries (Mineral Resources) in Broken Hill to discuss techniques for rehabilitation that work in the Broken Hill environment. These discussions indicate very little re-seeding (either broadcast or direct seeding) is undertaken in this region. Instead, pulling vegetation back over

temporarily disturbed areas to assist in moisture control, as well as trapping and sheltering the seed bank, was identified as a rehabilitation technique that does work successfully.

In following this technique, the potential for wind erosion will be reduced, opportunities for fauna movement restored, the potential for weed invasion minimised, and the regeneration by locally endemic native species maximised.

25.3.2 Construction Compound

Immediately after construction is complete CPP will remove all materials from its construction compound (80m x 30m), dismantle the fence, lightly rip/scarify the ground surface and re-spread the stockpiled topsoil and vegetative matter to facilitate natural regeneration.

Consistent with COA B23, CPP will retain responsibility for reinstatement of this compound area until the health of this revegetated area has 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.

25.4 Timing

Reinstatement works will be undertaken immediately on completion of construction.

25.5 Monitoring

Post construction, and until the independent expert verifies that the compound area is well established, in good health and self-sustaining, CPP will undertake annual monitoring inspections to check the progress of the rehabilitation and stability of the compound and access track, complemented initially with inspections following significant localised rainfall events.

26 COMPLIANCE TRACKING PROGRAM

Pursuant to COA C16 AGL, as the proponent, is obligated to develop a compliance tracking program to satisfactorily demonstrate compliance with the conditions of approval.

CPP, as a contractor for the project, commits to the provision of relevant information to AGL as is required to enable AGL to fully comply with COA C16.

CPP also notes and commits to complying with any reasonable requirements of the Director General (as communicated to CPP by AGL as the proponent) arising from the Department's assessment of this CEMP, and the implementation and actions or measures contained within this CEMP.

27 NON-INDIGENOUS HERITAGE

27.1 Artefact Protocol

If, during the course of construction CPP becomes aware of any unexpected historical relics, all work with the potential to affect the artefact will cease immediately and the Heritage Office will be notified in accordance with the *Heritage Act 1977*.

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

27.2 Human Remains

Should any suspected human remains be encountered during construction, then work in the area will cease and the local vicinity of the find should be cordoned off.

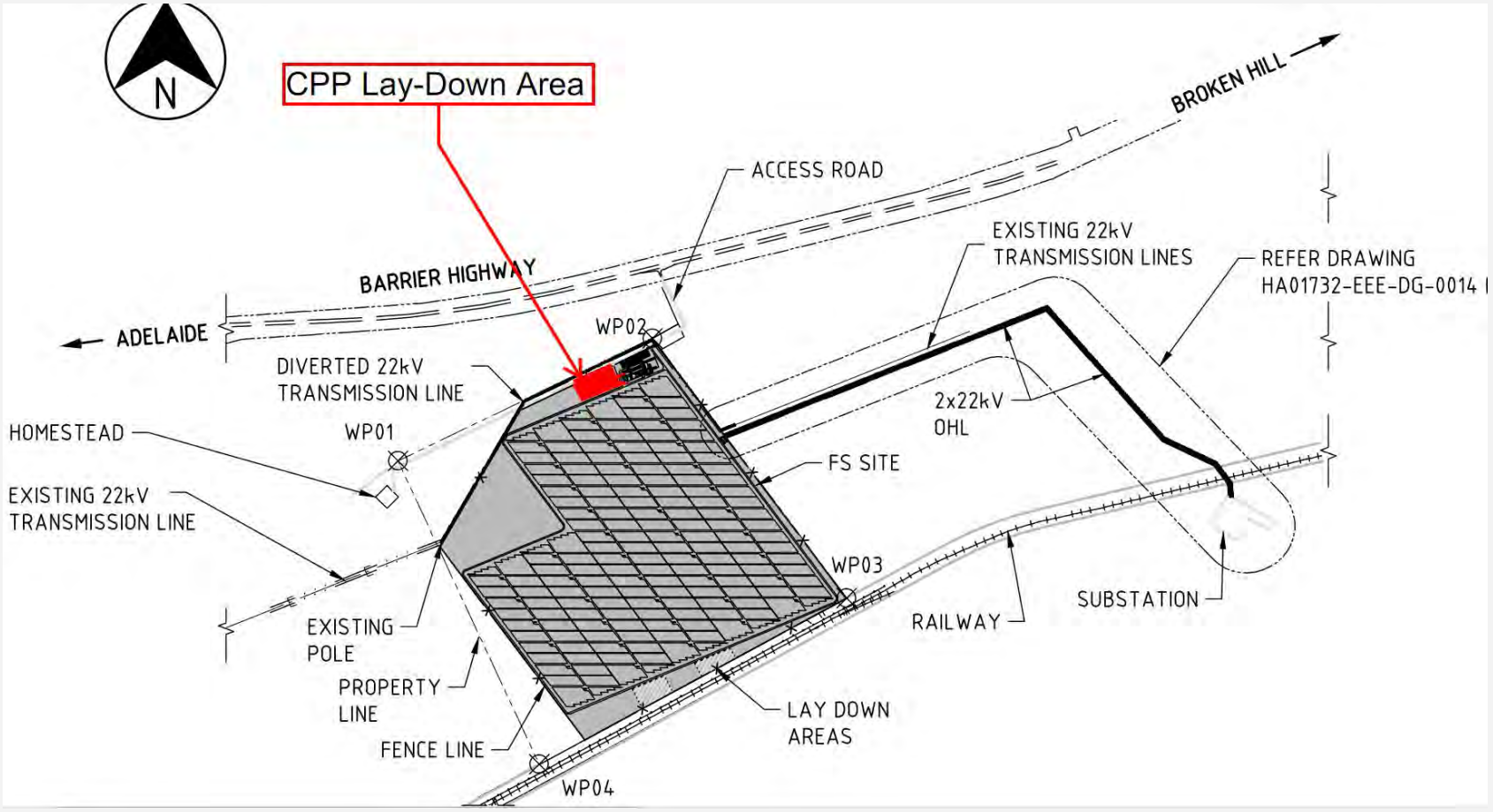
The following process will then be adhered to:

- 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 Police and NSW OEH.

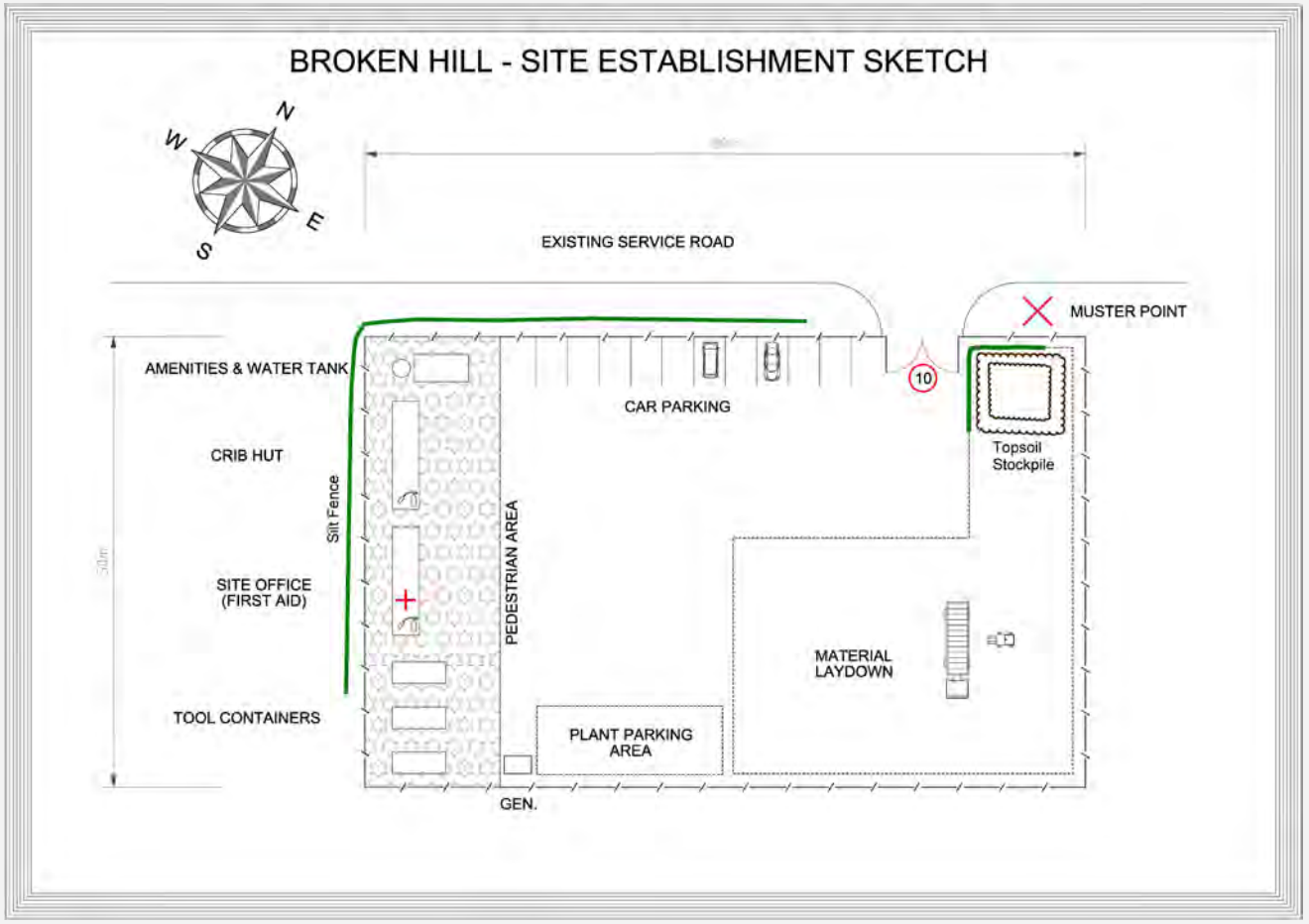
27.3 Training

All staff and contractors will receive training on this protocol as part of the project induction.

28 DRAWINGS



Drawing 1: CPP Lay-Down Area and Grid Connection Alignment



Drawing 2: Sedimentation Controls CPP Compound

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 CEMP.

- Sinclair Knight Merz (October 2012) *Broken Hill Solar Plant – Environmental Assessment*
- Sinclair Knight Merz (February 2013) *Broken Hill Solar Plant – Submissions and Preferred Project Report*
- *Project Approval MP10_0202* (March 2013)
- OzArk Environmental and Heritage Management Pty Ltd (October 2013) *Aboriginal Heritage Management Plan Broken Hill Solar Plant*
- OzArk Environmental and Heritage Management Pty Ltd (December 2013) *Documentation of actions in relation to the Aboriginal Cultural Heritage Management Plan, for AGL Energy Limited (AGL), Broken Hill Solar Plant*
- JacobsSKM (March 2014) *Broken Hill Solar Photovoltaic Plant – Staging Report*
- AGL Energy Limited (July 2013) *Community Consultation Plan*
- nghenvironmental (June 2013) *Broken Hill Solar Plant - Raptor Management Plan*
- nghenvironmental (June 2013) *Broken Hill Solar Plant - Biodiversity Offset Management Plan*
- Geolyse (July 2104) *Enabling Works*

Appendix C – Evidence of Stakeholder Consultation

Broken Hill Council

- COA C2 required Broken Hill Council be consulted in the preparation of the Construction Environmental Management Plan;
- COAC3 (e) required Broken Hill Council be consulted in the preparation of the Traffic Management Plan.

A copy of the draft CEMP, in its entirety and including the TMP, was submitted to Broken Hill City Council on 3rd June 2014. Confirmation that Council has been consulted and is satisfied with the CEMP is provided below.

Andrew Brownlow

From: Oldsen Peter [Peter.Oldsen@brokenhill.nsw.gov.au]
Sent: Thursday, 5 June 2014 3:31 PM
To: Andrew Brownlow
Subject: RE: 214099 - CPP CEMP Broken Hill Solar Farm Grid Connection Works (Broken Hill Council 2))

Hi Andrew,
Yes this approach is acceptable. A final copy for our records is all that is required.
Regards

Peter Oldsen
Group Manager Sustainability, Broken Hill City Council
240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3341
M. 0418 808 093
W. www.brokenhill.nsw.gov.au
E. Peter.Oldsen@brokenhill.nsw.gov.au

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Thursday, 5 June 2014 2:58 PM
To: Oldsen Peter
Cc: 'Orange Document Control'
Subject: 214099 - CPP CEMP Broken Hill Solar Farm Grid Connection Works (Broken Hill Council 2))

Peter

Many thanks for such a quick response. We will address your comments below, as discussed, and will arrange for a copy of the final approved CEMP to be provided to Council for your records.
If you could confirm this is acceptable that would be appreciated. Email response would suffice.

Regards

Andrew

Andrew Brownlow
Manager - Environmental / Director (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

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From: Oldsen Peter [mailto:Peter.Oldsen@brokenhill.nsw.gov.au]
Sent: Thursday, 5 June 2014 2:29 PM
To: abrownlow@geolyse.com
Subject: RE: TRIM: FW: 214099 - CPP CEMP Broken Hill Solar Farm Grid Connection Works (Broken Hill Council))

Hi Andrew,
The document generally meets all the requirements of the conditions. In response to your request the following comments are provided.

- 14.8 Groundwater Interference. Council has 6 bores at the landfill site adjacent to this development and the standing water level is as low as 6 metres but is generally 13 to 15 metres.
- 16.2 Dust Suppression. Particular attention should be paid to construction works in September as this is generally the windiest month with wind gusts up to 70ks throughout the month.
- 17.3.2 Emergency Contact. Whilst the Rural Fire Service is the appropriate contact it would probably be more appropriate to use the Broken Hill Fire Brigade as they generally respond to these situations in the Broken Hill Region. Also given this site is only 5 kms outside of the city.
- Projects Aspects & Impacts Register. This is titled "Nyngan Solar Farm Connection" and lists Nyngan doctors as emergency contacts.
- Project Hazard and Risk Assessment Register. This is also titled "Nyngan"

Should you wish to discuss these comments please contact me.
Hope this assists with the project.
Regards

Peter Oldsen
Group Manager Sustainability, Broken Hill City Council
240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3341
M. 0418 808 093
W. www.brokenhill.nsw.gov.au
E. Peter.Oldsen@brokenhill.nsw.gov.au

From: Rolton, Michelle **On Behalf Of** Environmental Services Internet Mail
Sent: Tuesday, 3 June 2014 3:57 PM
To: Oldsen Peter
Cc: Van Der Berg, Francois; Stephens, Tracey
Subject: TRIM: FW: 214099 - CPP CEMP Broken Hill Solar Farm Grid Connection Works (Broken Hill Council))

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Tuesday, 3 June 2014 3:23 PM
To: Environmental Services Internet Mail
Cc: Orange Document Control; 'Grant Johnstone'
Subject: 214099 - CPP CEMP Broken Hill Solar Farm Grid Connection Works (Broken Hill Council))

Peter Oldsen
Group Manager Sustainability
Broken Hill City Council

Dear Mr Oldsen

CPP is undertaking the grid connection works associated with the approved Broken Hill Solar Farm for AGL.
A condition of the Minister's consent requires that Council (and a range of other stakeholders) be consulted in the preparation of the Construction Environmental Management Plan (CEMP) for these works. To this end, please find attached a copy of the CEMP for your consideration.
Subject to your feedback, and contingent on receipt of advice that Council accepts the CEMP, this plan would then be submitted to the Director General Department of Planning for final approval. Evidence of consultation with Council is a precursor to any approval from the Director General.
If there is any information we can provide that will help expedite your review, or if there are aspects of the works that you would like to discuss, please do not hesitate to call.

Regards

Andrew

Andrew Brownlow
Manager - Environmental / Director (CEnvP)
Geolyse Pty Ltd
154 Peisley St
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Orange NSW 2800
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Email: abrownlow@geolyse.com
Web: www.geolyse.com

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Council has also confirmed in writing that there is no requirement from them, as the relevant road authority, for CPP to undertake either a Pre-Construction Road Report or a Road Dilapidation Report (refer below)

Andrew Brownlow

From: Miranda David [David.Miranda@brokenhill.nsw.gov.au]
Sent: Monday, 12 May 2014 8:33 AM
To: 'Andrew Brownlow'
Subject: RE: 214099 - Traffic Question

Not in this instance, no I don't. If however you require an overweight, over length or over height movement along the local roads then notification to us is required through the NHVR if it is from Interstate and direct to us if the movement is within NSW only.

David Miranda
Assets Planner-Roads/Footpaths, Broken Hill City Council
240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3368
M. 0407 278 927
W. www.brokenhill.nsw.gov.au
E. David.Miranda@brokenhill.nsw.gov.au

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Friday, 9 May 2014 3:55 PM
To: Miranda David
Subject: RE: 214099 - Traffic Question

David

Just to confirm, you don't consider the referenced reports below are necessary?

Andrew

Andrew Brownlow
Manager - Environmental / Director (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

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IMPORTANT

From: Miranda David [mailto:David.Miranda@brokenhill.nsw.gov.au]
Sent: Friday, 9 May 2014 4:18 PM
To: 'abrownlow@geolyse.com'
Subject: FW: 214099 - Traffic Question

G'day Andrew,

Thanks for the map. It doesn't indicate any impacts on council roads other than what you addressed in your e-mail. I don't consider the vehicle movements and numbers for the project to be substantial and believe the impacts and implications on local roads to be negligible. This is an industrial area and the road reserves are designed to handle well over the vehicle types and numbers you have indicated in your correspondence. Our Sustainability department have no issues with the works within the local government boundaries so it seems all is in order. In this case I don't consider a Pre-Construction Road Report and a Road Dilapidation Report. Please don't hesitate to contact me in the future if necessary.

David Miranda
Assets Planner-Roads/Footpaths, Broken Hill City Council
240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3368
M. 0407 278 927
W. www.brokenhill.nsw.gov.au
E. David.Miranda@brokenhill.nsw.gov.au

From: Miranda David
Sent: Thursday, 8 May 2014 8:12 AM
To: Gillespie, Patrick
Subject: FW: 214099 - Traffic Question

Pat, for your comments please.

David Miranda
Assets Planner-Roads/Footpaths, Broken Hill City Council

240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3368
M. 0407 278 927
W. www.brokenhill.nsw.gov.au
E. David.Miranda@brokenhill.nsw.gov.au

From: Tech Services Internet Mail
Sent: Wednesday, 7 May 2014 11:08 AM
To: Miranda David
Subject: FW: 214099 - Traffic Question

Dave for your response – this has been Trimmed ☺

Cheers

Sonja

Sonja Stubing
PPT Admin Assistant Infrastructure, Broken Hill City Council
240 Blende Street Broken Hill NSW 2880 Australia
P. (08) 8080 3372
W. www.brokenhill.nsw.gov.au
E. Sonja.Stubing@brokenhill.nsw.gov.au

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Wednesday, 7 May 2014 7:27 AM
To: Tech Services Internet Mail
Cc: 'Orange Document Control'; 'Grant Johnstone'
Subject: 214099 - Traffic Question

Mr David Miranda

Asset Manager Roads and Footpaths

Broken Hill City Council

Dear David

Consolidated Power Projects (CPP) is the contractor undertaking the grid connection works for AGL's Broken Hill Solar Plant. Part of CPP's works entail connection of a new overhead transmission line to the TransGrid substation located off Pinnacles Road. A consent condition imposed by the Minister in the broader project approval required consultation with the relevant road authority with respect to the need for a *Pre-Construction Road Report* and a *Road Dilapidation Report*.

As it relates to the traffic that will be generated on local public roads as a result of these grid connection works to the TransGrid substation, we would like to ascertain whether Broken Hill Council, as the relevant road authority, would agree that these Reports are not required given the very modest volume and nature of the traffic that this activity will generate. To this end, we provide the following information for your consideration.

The grid connection works extend some 2.7 km. Approximately 90% of this work effort will be accessed from within the solar plant site off the Barrier Highway, the existing unclassified access road to the site (which is to be upgraded as part of the development), then utilise a number of private, unnamed, unsealed roads that currently traverse the site and Common.

The residual 10% of traffic associated with the grid connection works (ie. at the TransGrid Substation end) will, however, need to utilise local public roads. These would include, but may not be limited to, Kanandah Road and Pinnacles Road. We understand Broken Hill Council is the relevant roads authority for these local public roads.

The traffic volumes generated on these local public roads are, however, extremely modest. Conservatively, CPP estimate that for the transmission works requiring access from the TransGrid substation end of the works, heavy vehicle movements would be restricted to just seven (7) trucks. Specifically:

- two (2) standard articulated trucks [19m length & 2.5m width] delivering the power poles;
- one (1) standard truck [12.5m length & 2.5m width] mounted auger
- two (2) concrete agitator trucks
- one (1) standard truck delivering the conductor
- one (1) standard truck delivery an Elevated Work Platform (EWP)

Construction at this end of the works would also generate up to 20 light vehicles (utilities).

In light of these very modest vehicle numbers, and because no over-mass or oversize heavy vehicle movements are proposed, CPP consider that a *Pre-Construction Road Report* and a *Road Dilapidation Report* may not be warranted.

For this very modest traffic volume, and type, it is hoped that Council may concur that upgrades to these local public roads would not be required and that an assessment of the current condition of these local public roads is not needed. The Minister's consent provides the flexibility to not have to prepare these reports, subject to consultation with the relevant road authority.

If there is any additional information that we can provide that will assist in your consideration of the above please do not hesitate to ask.

Regards

Andrew Brownlow
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Geolyse Pty Ltd
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Web: www.geolyse.com

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Office of Environment and Heritage

- COA C3(a) required that Office of Environment and Heritage be consulted in the preparation of the Flora and Fauna Management Plan.

  A copy of the Flora and Fauna Management Plan (FFMP) was submitted to OEH 15 May 2014. OEH has provided advice that it has reviewed the Flora and Fauna Management Plan and is satisfied that it meets the conditions of the Broken Hill Solar PV Power Station Project Approval (20 May 2014, e-mail – see below).

Andrew Brownlow

From: Peter Ewin [Peter.Ewin@environment.nsw.gov.au]
Sent: Tuesday, 20 May 2014 3:00 PM
To: Andrew Brownlow
Cc: Michael Todd
Subject: RE: 214099 - Flora and Fauna Management Plan/OEH Consultation

Andrew,
OEH has reviewed the Construction Environmental Management Plan (CEMP) Appendix F- Flora and Fauna Management Plan for the Broken Hill Solar Plant Grid Connection and is satisfied that it meets the conditions of the Broken Hill Solar PV Power Station Project Approval (Application No.: MP10_0202).
At this stage OEH has not contacted the Department of Planning and Environment to confirm this outcome – if you require this please let me know a contact and I will pass on this e-mail.
If you would like to discuss this response further please contact Mick Todd directly on 03 5021 8915.
Thanks,
Peter

Peter Ewin
Team Leader Planning, South West
Regional Operations Group (South Branch)
Office of Environment and Heritage
Ph: 02 6022 0606
Fax: 02 6022 0610
Mob: 0427 433 937

From: Andrew Brownlow [mailto:abrownlow@geolyse.com]
Sent: Wednesday, 14 May 2014 1:57 PM
To: Todd Michael
Cc: 'Orange Document Control'; 'Grant Johnstone'
Subject: 214099 - Flora and Fauna Management Plan/OEH Consultation

Mr Michael Todd
Office of Environment and Heritage

Michael

Hopefully you will recall our discussion early last month about the Flora and Fauna Management Plan that is required as part of a broader Construction Environmental Management Plan that Consolidated Power Projects (CPP) is required to submit to the Director General of Planning for the grid connection works associated with the approved Broken Hill Solar Plant. CPP is the contractor who is undertaking these works for AGL.

A condition of the Minister's consent requires that this Flora and Fauna Management Plan be prepared in consultation with OEH. We have also been advised that Planning insists on citing evidence of this consultation. To this end, please find attached a copy of the FFMP prepared for the grid connection works. It would be very much appreciated if you could have a look at the attached and advise whether it satisfies OEH expectations.

Off course if there is anything you would like to discuss, or require further information on, please do not hesitate to ask.

Regards

Andrew

Andrew Brownlow
Manager - Environmental / Director (CEnvP)
Geolyse Pty Ltd

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Ph: 02 6393 5000
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Email: abrownlow@geolyse.com
Web: www.geolyse.com

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- COA C3(f) required that the Office of Environment and Heritage be consulted in the preparation of the Aboriginal Heritage Plan.

  The Aboriginal Heritage Management Plan prepared in October 2013 by OzArk Environmental and Heritage Management, for AGL Energy Limited, states in Section 3 that this plan was reviewed by OEH and incorporates their comments.

NSW Office of Water

- COA C2(l) required that NSW Office of Water be consulted with respect to soil and water impacts and COA C2(m) for flood impacts.
- COA C2(m) required that NSW Office of Water be consulted with respect to flood impacts.

A copy of the draft CEMP, in its entirety, was submitted to NOW on 3rd June 2014. Confirmation that NOW has been consulted and is satisfied with the CEMP is provided below.

Andrew Brownlow

From: Tim Baker [Tim.Baker@water.nsw.gov.au]
Sent: Monday, 16 June 2014 10:33 AM
To: Andrew Brownlow
Cc: 'Grant Johnstone'; 'Orange Document Control'; Kate Masters
Subject: Re: 214099 - Broken Hill Solar - CEMP - NOW Response (2)

Hi Andrew,

Thankyou for those comments which clearly clarifies the relationship of the CPP and First Solar CEMP. In terms of works within waterfront land, NOW recognises the exemptions to a Controlled Activity Approval (CAA) as referred to in Section 14.5 and also by way of s89J of the EP&A Act. As a CAA is not required NOW recommends the works within waterfront land be carried out in accordance with the Guidelines for Controlled Activities on Waterfront Land.

If you require anything further please let me know.

Regards
Tim

Tim Baker | Senior Water Regulation Officer
Department of Primary Industries | Office of Water
209 Cobra St | P O Box 717
Dubbo NSW 2830
T: 02 6841 7403 M: 0428162097 F: 02 6884 0096
E: Tim.Baker@water.nsw.gov.au
W: www.water.nsw.gov.au

>>> "Andrew Brownlow" <abrownlow@geolyse.com> 16/06/2014 10:03 am >>>
Tim

Section 2.3 of the CEMP for the grid connection as submitted clarifies the scope of the CEMP, its relationship to the second CEMP being prepared for First Solar's component of works, the reasoning behind this, and confirmation that the Department of Planning has accepted this approach. To this end, there is no relationship to the CEMP (SWMP Subplan E) and the CEMP that Geolyse has submitted to NOW on behalf of CPP.

We also note that Section 14.5 identifies what specific measures will be adopted to ensure compliance with the Department's Guidelines for Controlled Activities on Waterfront Land.

We trust that the above clarifies matters. Confirmation that the above satisfactorily deals with your correspondence would be appreciated.

Andrew

Andrew Brownlow
Manager - Environmental / Director (CEnvP)
Geolyse Pty Ltd
154 Peisley St
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Mob: 0417 210 253
Email: abrownlow@geolyse.com
Web: www.geolyse.com

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From: Tim Baker [mailto:Tim.Baker@water.nsw.gov.au]
Sent: Friday, 13 June 2014 3:47 PM
To: Andrew Brownlow
Cc: Kate Masters
Subject: Broken Hill Solar - CEMP - NOW Response

Hi Andrew,

As discussed please see attached response from Office of Water to the CEMP for the Broken Hill Solar Project/Grid connection works. Any queries please let me know.

Regards
Tim

Tim Baker | Senior Water Regulation Officer
Department of Primary Industries | Office of Water
209 Cobra St | P O Box 717
Dubbo NSW 2830
T: 02 6841 7403 M: 0428162097 F: 02 6884 0096
E: Tim.Baker@water.nsw.gov.au
W: www.water.nsw.gov.au

>>> "Andrew Brownlow" <abrownlow@geolyse.com> 5/06/2014 2:07 pm >>>
Appreciated

Andrew Brownlow
Manager - Environmental / Director (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

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From: Tim Baker [mailto:Tim.Baker@water.nsw.gov.au]
Sent: Thursday, 5 June 2014 1:16 PM
To: Andrew Brownlow
Subject: Re: 214099 - CEMP

Hi Andrew,

I've been out of the office for a couple days but yes it has got through. I'm assuming its relatively straight forward so I'd hope NOW would have a response by early next week.

Regards
Tim

Tim Baker | Senior Water Regulation Officer
Department of Primary Industries | Office of Water
209 Cobra St | P O Box 717
Dubbo NSW 2830
T: 02 6841 7403 M: 0428162097 F: 02 6884 0096
E: Tim.Baker@water.nsw.gov.au
W: www.water.nsw.gov.au

>>> "Andrew Brownlow" <abrownlow@geolyse.com> 5/06/2014 10:34 am >>>
Tim

Just looking for confirmation that the CEMP for Broken Hill solar farm grid connection works got through to you OK and an indication of when you think you may be able to provide feedback.

Appreciated.

Andrew

Andrew Brownlow
Manager - Environmental / Director (CEnvP)
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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 ER21328

Andrew Brownlow
Geolyse Pty Ltd
PO Box 1963
ORANGE NSW 2800

Dear Andrew

BROKEN HILL SOLAR PROJECT – CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

I refer to your email dated 3rd June 2014 requesting comments from the NSW Office of Water in relation to the Construction Environmental Management Plan (CEMP) for the Broken Hill Solar Project. It is recognised this request is in accordance with Schedule 2, Part C, Condition C2 of Project Approval MP10_0202.

Initially reference is made to a response dated 27 May 2014 by the Office of Water regarding the CEMP Subplan E (Soil and Water Management Plan) for this project. This response is shown in Attachment A and clarification is requested on the relationship between the CEMP (SWMP Subplan E) and the current CEMP provided for comment. It appears there are two separate CEMP's being prepared for the same project. It is recommended the comments in the 27 May 2014 response be considered within the overarching CEMP for soil and water management. Further comments on the CEMP are provided below.

- Section 14.4 and 14.5 of the CEMP refers to works with potential impacts to watercourses and regulatory requirements. The NSW Office of Water recommends works within waterfront land be carried out in accordance with the Guidelines for Controlled Activities on Waterfront Land which can be accessed at the following link: http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx

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
13 June 2014

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 ER21328

Shelley Anderson
Beca
PO Box 55
FORTITUDE VALLEY QLD 4006

Dear Shelley

BROKEN HILL SOLAR PROJECT – SOIL AND WATER MANAGEMENT PLAN

I refer to your email dated 19th May 2014 requesting comments from the NSW Office of Water in relation to the draft Soil and Water Management Plan (SWMP) for the Broken Hill Solar Project. It is recognised this request is in accordance with Schedule 2, Part C, Condition C2 of Project Approval MP10_0202.

The NSW Office of Water has reviewed the document and provided preliminary comments via email on 21 and 22 May 2014. These comments were clarifying sediment and erosion control measures and included the following:

- Clarification is requested of the proposed sediment and erosion control and rehabilitation measures within the proposed drainage trenches and whether there is a requirement for check dams and/or sediment basins.
- Clarification is requested of the proposed sediment and erosion control measures on the downstream side of each proposed culvert. Drawing ABH1-C346 indicates rock rip rap on the bank to 0.4m however there is no indication of measures proposed on the bed of the drainage line. The Guidelines for Controlled Activities on Waterfront land recommend the use of a scour apron on the bed of the drainage line to mitigate bed erosion and to dissipate flow velocity.

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
27 May 2014

www.water.nsw.gov.au | NSW Office of Water
209 Cobra St, Dubbo | PO Box 717 Dubbo NSW 2830 | t 02 6884 2560 | f 02 6884 0096

Crown Lands Division (Department of Trade and Investment)

- COA C2 required that the Crown Lands Division be consulted in the preparation of the Construction Environmental Management Plan;
- COA C3(b) required that Crown Lands Division be consulted in the preparation of the Ground Cover Management Plan.
- COAC3 (e) required that Crown Lands Division be consulted in the preparation of the Traffic Management Plan.

A copy of the draft CEMP, in its entirety and including the Ground Cover Management Plan and Traffic Management Plan, was submitted to Crown Lands Division 3rd June 2014. Confirmation that Crown Lands Division has been consulted and is satisfied with the CEMP is provided below.

Andrew Brownlow

From: Andrew Brownlow [abrownlow@geolyse.com]
Sent: Monday, 16 June 2014 2:53 PM
To: 'Jarrod Smith'
Cc: 'Shaun Barker'; 'Orange Document Control'; 'Grant Johnstone'
Subject: 214099 - Broken Hill Solar Plant Grid Connection CEMP Corwn Lands

Jarrod

Appreciated.

Consistent with your suggestion, we will include co-ordinates of pole locations in the CEMP.

Regards

Andrew

Andrew Brownlow
Manager - Environmental / Director (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

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From: Jarrod Smith [mailto:jarrod.smith@crownland.nsw.gov.au]
Sent: Friday, 13 June 2014 10:27 AM
To: Andrew Brownlow
Cc: Shaun Barker
Subject: Broken Hill Solar Plant Grid Connection CEMP

Hi Andrew,

Please find attached the Departments review of the Broken Hill Solar Plant Grid Connection Construction Environmental Management Plan.

If you have any questions, please don't hesitate to contact me on the details shown below.

Kind regards,

Jarrod Smith | Senior Natural Resource Management Officer

Far West Area | West Region | Crown Lands Division

NSW Trade and Investment

45 Wingewarra Street, Dubbo NSW 2830 - PO Box 2185, Dangar NSW 2309

T: 02 6883 5448 | E: jarrod.smith@lands.nsw.gov.au

T: 1300 886 235 | E: westernregion@lands.nsw.gov.au

Please Note: our office opening hours are 9.00am to 12.00pm Monday to Friday and outside of these hours by appointment only

Trade & Investment Crown Lands

Reference: DOC14/095115

Andrew Brownlow
Manager – Environmental / Director
Geolyse Pty Ltd
PO Box 1963
ORANGE NSW 2800

Re: Construction Environmental Management Plan, Broken Hill Solar Plant Grid Connection

Dear Andrew,

Thank you for your enquiry to NSW Trade & Investment, Crown Lands (the Department) regarding the above Construction Environmental Management Plan (CEMP).

The Department has now reviewed the document and notes that waypoints of the corridor are provided in Section 28 (Drawings), and that some of these waypoints likely correspond to pole locations. The Department suggests that the location coordinates of all 18 poles that are proposed to be installed along the corridor be included in the CEMP.

If you have any further queries in regard to this matter, please do not hesitate to contact Jarrod Smith on 02 6883 5448 (phone) or jarrod.smith@lands.nsw.gov.au (email).

Yours sincerely,

Shaun Barker
Group Leader – Natural Resources and Property Management

13 June 2014

Roads and Maritime Service

COAC3 (e) required that the Roads and Maritime Service be consulted in the preparation of the Traffic Management Plan.

AGL nominated that both EPC Contractors (ie. First Solar and CPP) prepare their own Traffic Management Plans (TMP).

The TMP prepared for CPP presents the cumulative impact of both First Solar and CPP traffic associated with the project.

The TMP prepared for CPP was most recently submitted to AGL for RMS referral on 5 August 2014. This TMP included comment from RMS on First Solar's TMP.

Appendix D – Register of Project Forms

The table below provides a list of all the documents referenced in this Construction Environmental Management Plan. These forms, templates, plans, registers, etc. are CPP corporate documents. As required, they will be prepared for this project and will be filed in the project folder.

If required, CPP can provide the Department of Planning and Environment with copies of the templates.

Appendix E - Traffic Management Plan

E.1 Purpose

This Construction Traffic Management Plan for the Broken Hill Solar Plant has been prepared to meet the requirements of:

- The Broken Hill Solar Plant Project Approval (MP10-0202)
  - Condition C3(e)
- Broken Hill Solar Plant Submissions and Preferred Project Report (SKM, February 2013)
  - Commitment TT1
  - Commitment TT3

E. 2 Scope

E.2.1 Overview

As required by Project Approval (MP10-0202) for the Broken Hill Solar Plant, CPP has developed this Traffic Management Plan (TMP) for the development as it relates to the activities of CPP. Specifically this TMP relates to the construction of the grid connection/transmission line.

A second TMP has been prepared for the construction of the Solar Plant. These works are being undertaken by First Solar (Australia) Pty Ltd (First Solar).

The construction of the Solar Plant is not under the mandate of CPP. Please refer to the separate solar plant construction TMP for information specific to the construction of the solar plant.

Notwithstanding, as construction activities (albeit for a limited time) will be undertaken by both CPP and First Solar simultaneously, and because First Solar's TMP has already been prepared, CPP's TMP (this document) does provide an assessment cognizant of the cumulative traffic impact.

By agreement with CPP, the requirements of Condition B31 and Commitment TT2 are being separately managed by the Proponent (AGL). Information on the Barrier Highway upgrades is not included within either First Solar's Construction Traffic Management Plan (Version E, 30/6/2014), nor this Traffic Management Plan.

The Pre-Construction Road Report and Road Dilapidation Reports required by Condition B30(a) and B30(b) and Commitment TT4 are being separately prepared and are not included within this report.

E.2.2 CPP Construction Activity

The Broken Hill Solar Plant will consist of a 53MW solar PV power station located approximately 5km south-west of Broken Hill. The solar plant will occupy approximately 140 hectares of land bounded to the north by the Barrier Highway and the Peterborough-Broken Hill rail line to the south.

CPP has been engaged by AGL to provide engineering, procurement and construction (EPC) services for the grid connection works for the Solar Plant. These works include the construction of 2.7 km of new aboveground 22kV transmission line to connect the solar plant to the existing Broken Hill substation.

E.2.3 Relevant Approval Conditions

The approval provisions for the Broken Hill Solar Plant relevant to the Construction Traffic Management Plan are as follows:

Table E.1: Relevant Approval Conditions

Project Approval Conditions:	**Document Reference:**
A Traffic Management Plan to manage traffic conflicts that may be generated during construction in preparing the plan, the Proponent shall consult with the Council, RMS and the Crown Lands Division of the Department of Trade and Investment. The Plan shall address the requirements of the relevant road authority and shall include, but not necessarily be limited to:	
• details of how construction of the project will be managed in proximity to local and regional roads;	Section E.7.1
• details of traffic routes for heavy vehicles, including any necessary route or timing restriction for oversized loads;	Section E.4
• demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with;	Section E.8
• details of measures to minimise interactions between the project and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc;	Section E.7.1
• procedures for informing the public where any road access will be restricted as a result of the project;	Section E.9.4
• procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock;	Section E.9.2
• speed limits to be observed along routes to and from the site and within the site; and	Section E.7.2
• details of the expected behavioural requirements for vehicles drivers travelling to and from the site and within the site.	Section E.10.3
Submission Report Commitments:	**Document Reference:**
The proponent or its contractor will determine the final details of haulage during detailed transport planning, in consultation with RMS. Road and intersection works will be approved and completed prior to the commencement of construction of the solar plant, and will be at no cost to RMS.	This TMP forms the start of the consultation with RMS on these proposed routes.
Traffic Management Plan will be prepared and implemented for the construction, operation and decommissioning phases of the project. The plan will specify:	
• travel routes and parking areas for construction and operations traffic;	Section E.3
• origin, number, size and frequency of vehicles accessing / exiting the site;	Section E.6
• speed limits and directions of travel on the access roads within the site;	Section E.7
• loads, weights and lengths of haulage and construction related vehicles;	Section E.6
• scheduling of haulage vehicle movements to minimise convoy lengths and platoons;	Section E.7.1.4
• traffic control requirements, including requirements for signage, barriers and traffic control personnel;	Section E.10

• the management and co- ordination of vehicle movements to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables; and	Section E.7.1
• details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS supplements.	Section E.9.1

E.2.4 Project Background

The project site is in the far western area of New South Wales (NSW). The site is situated approximately five kilometres south west of the Broken Hill city. The proposed plant site is on Crown Land and located within an unincorporated area which is administered by the NSW Department of Primary Industries, Catchments and Lands Division. The land is located between Barrier Highway to the north and Peterborough-Broken Hill rail line to the south of the site as shown in Attachment 1.

As outlined in the Environmental Impact Statement (EIS), the overall development program for this project is as follows:

- Construction – mid 2014 to late 2015
- Commissioning – 2015
- Operation - 2016 to 2045
- Decommissioning – 2045 onwards

It is anticipated that the overall construction period, inclusive of the solar plant and the grid connection works, will be approximately 15 months with the operation period of up to 30 years.

In this context, CPP works are a relatively minor component of the broader construction effort. Specifically, construction of the grid connection works are expected to be completed over a 2.5 month period; representing 10 weeks , 6 days a week (Monday to Saturday); equating to a 60 day construction effort.

In terms of scheduling, grid connection works, including mobilisation and demobilisation are scheduled to commence at the end of October 2014, and be completed in early February 2015.

The draft First Solar schedule for the material delivery is as follows:

- August 2014 to May 2015 – Posts, Tilts, Tables, Construction equipment, Electrical& Cable and PVCS/PVIS
- January 2015 to June 2015 – Solar PV Modules
- January 2015 to June 2015 – Inverters, transformers and shelters

As evident from the above, the period of simultaneous construction effort is minor, with CPP scheduled to have completed its work program before First Solar's PV module deliveries begin.

E.3 Access Roads to Site

During the construction of the grid connection, CPP is anticipating deliveries from the following locations:

1. Newcastle/Sydney
2. Melbourne

This section describes the key access routes that will be utilised when transporting construction materials, equipment and employees to the works site from these locations.

E.3.1 Barrier Highway

Whilst deliveries ex-Adelaide are not proposed, this descriptor below of the Barrier Highway is included to provide consistency with the scope, format and presentation of First Solar's TMP (Version E, 3006/2014).

Barrier Highway (National Route A32) is an important route connecting South Australia to the mid area of NSW. Barrier Highway is a dual lane, bi-directional highway with sealed shoulder in most areas. The posted speed limit at the location of the site access is 110km/hr. Barrier Highway will be utilised from either direction, i.e. to/ from Adelaide (west) and to/ from Broken Hill (east).

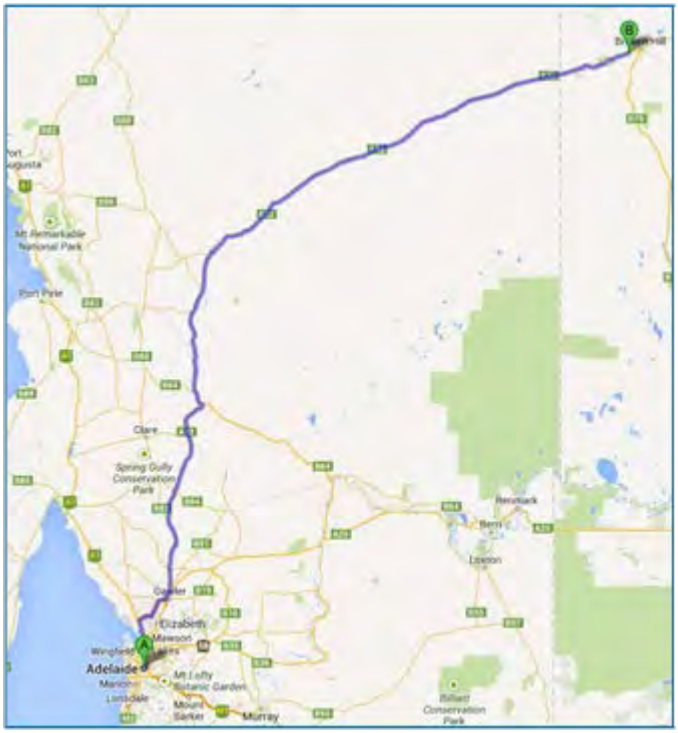

Figure E.1: Barrier Highway route Adelaide west to Broken Hill

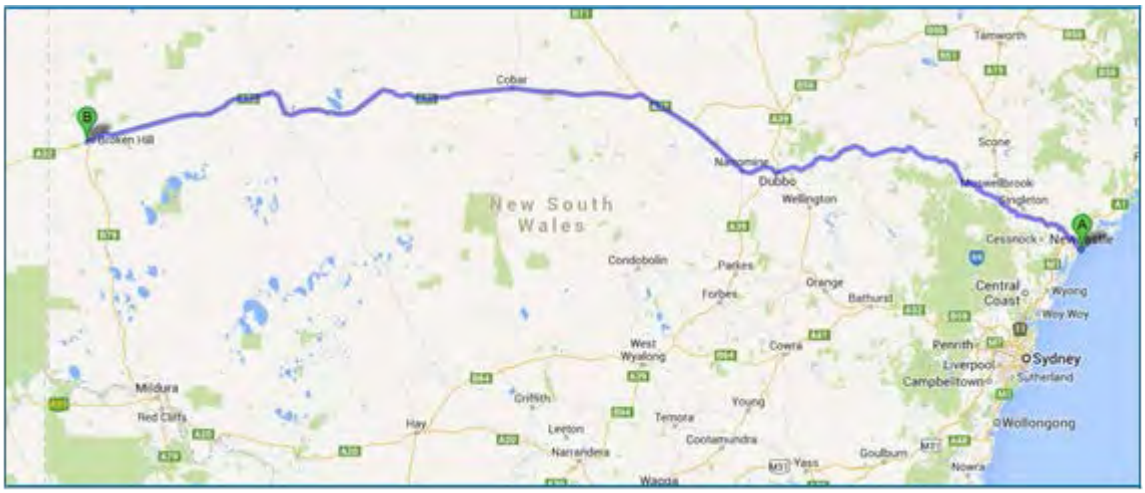

Figure E.2: Barrier Highway route east to Broken Hill from Newcastle

E.3.2 Silver City Highway

Silver City Highway (B79) is also an important route connecting Melbourne and surrounding area to Broken Hill (via Mildura). This state highway is a sealed dual lane, bi-directional highway that serves inter/ intra-regional state journeys.

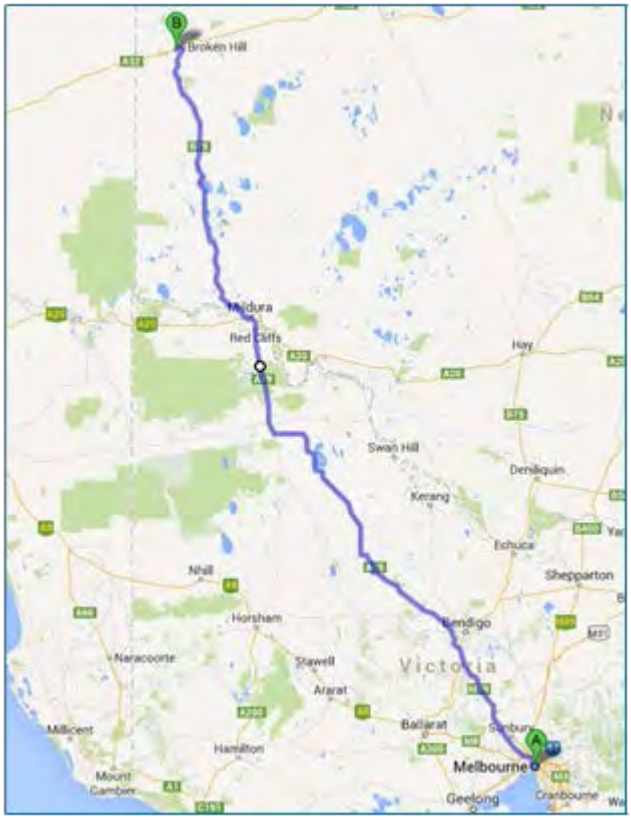

Figure E.3: Silver City Highway route from Melbourne to Broken Hill

E.4 Site Access

The proposed site access to the Broken Hill Solar Plant is an existing unsealed access off the southern side of the Barrier Highway south west of Broken Hill city. This access road is eight metres wide and is a non-formalised access. The access road is in a suitable condition for use by construction traffic, including light vehicles. Some upgrade works are recommended for the site access intersection with the Barrier Highway. This is discussed further in Section E.9.1. The access currently serves the existing lessee and will continue to do so during the construction and operational period of the solar plant.

Internal onsite access tracks will be created by First Solar during the initial site enabling works to cater for the movements within the construction site. The internal access tracks will include both operational access tracks and access tracks required just for the construction period. Internal site access tracks are outside of the scope of the Construction Traffic Management Plan which relates only to the management of construction traffic on public roads.

An estimated 90% of traffic movements associated with the construction of the grid connection works to be undertaken by CPP will utilise this access for construction purposes.

The balance of CPP construction traffic associated with the grid connection works (ie. at the Broken Hill Substation end) will use Kanandah Road and Pinnacles Road. Broken Hill Council is the relevant roads authority for these local public roads.

Routes to be followed through Broken Hill are presented below.

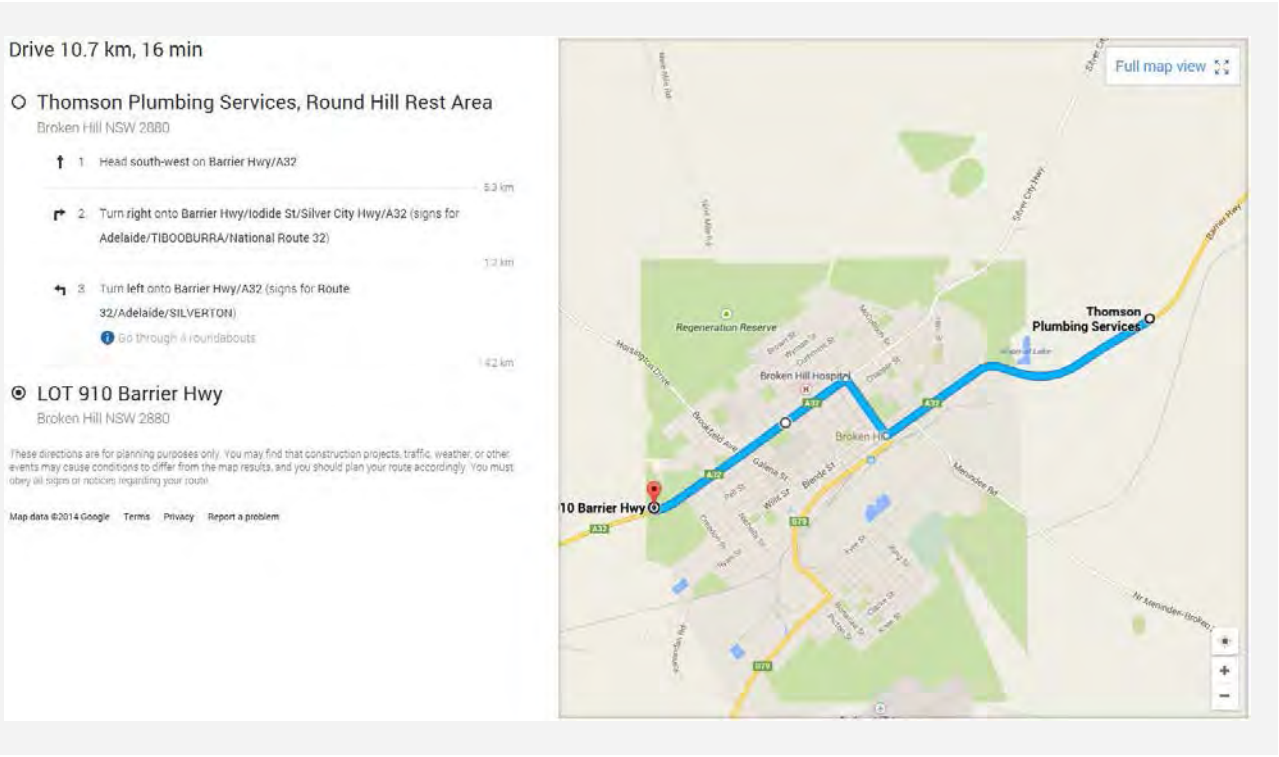

Figure E.4: Barrier Highway Route

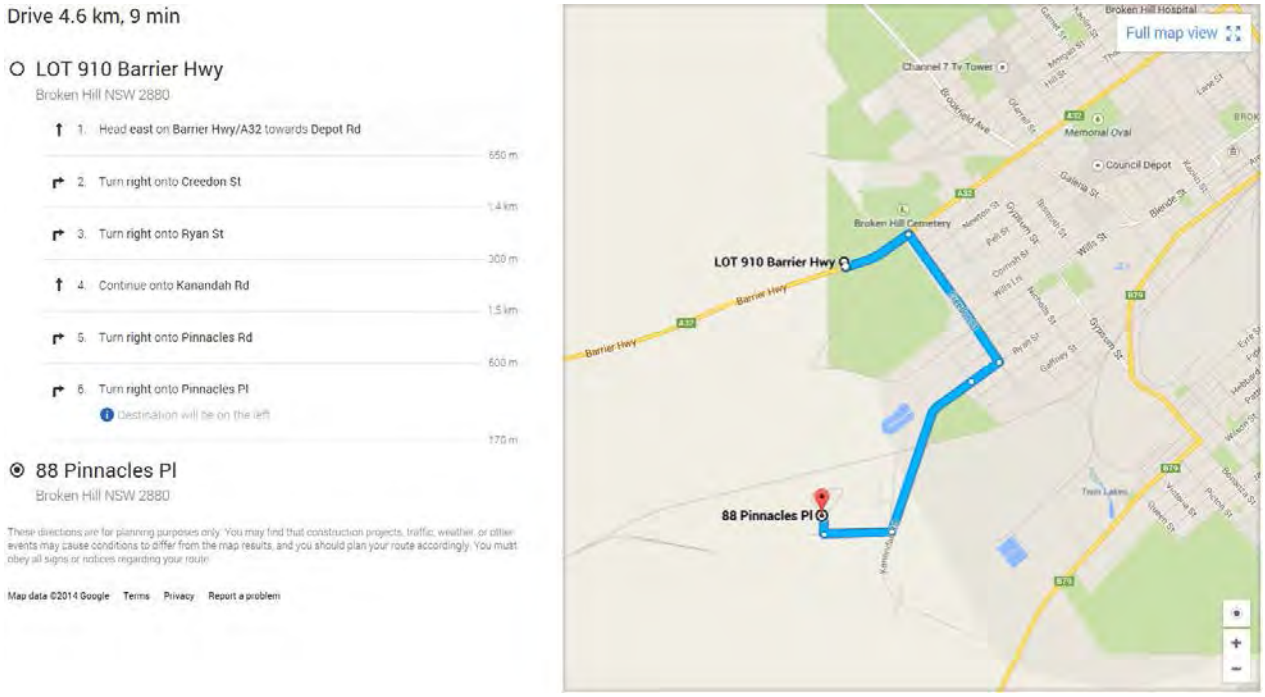

Figure E.5: Pinnacles Place Route

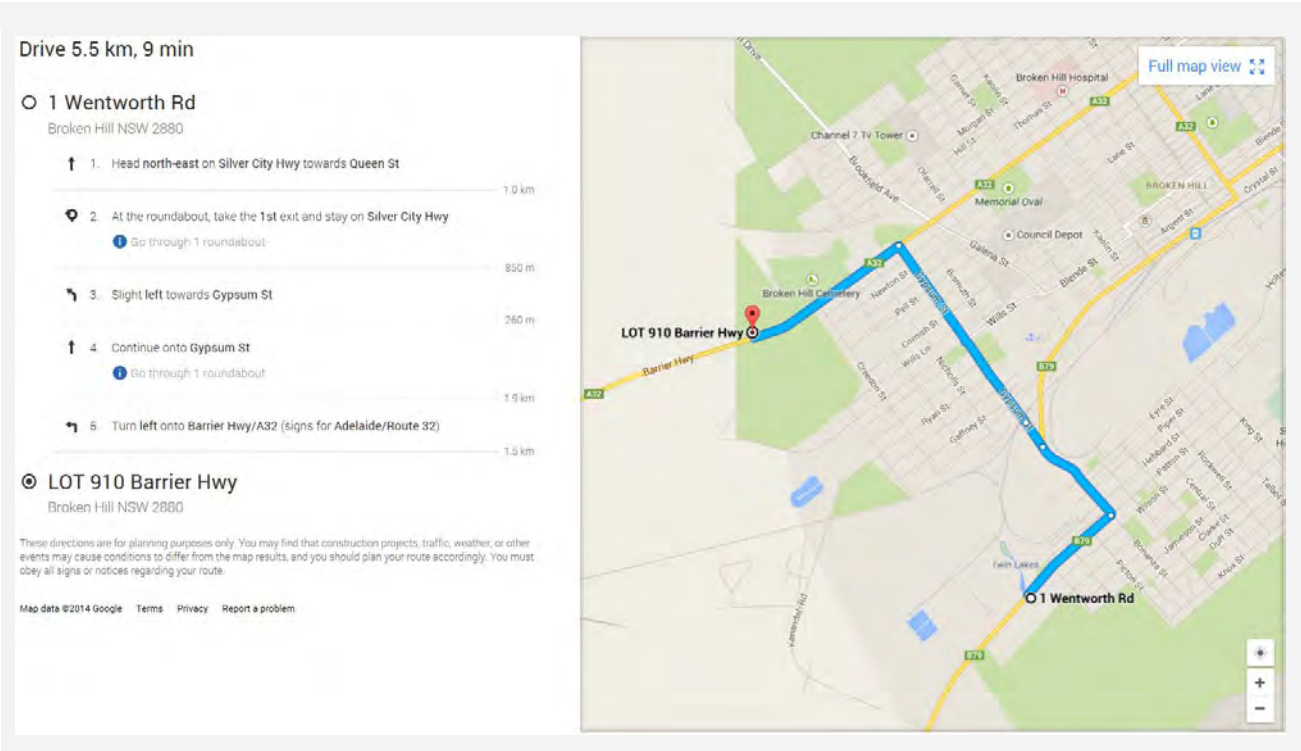

Figure E.6: Silver City Highway Route

Consultation with Council has confirmed that it does not consider that the vehicle movements and numbers, as it relates to local public roads, are substantial and consider the impacts and implications on local roads to be negligible. This is an industrial area and the road reserves are designed to handle well over the vehicle types and numbers. Council's Sustainability Department have no issues with the works within the local government boundaries, and neither a Pre-Construction Road Report nor a Road Dilapidation Report is necessary.

E.5 Traffic Data

This section discusses the existing traffic data for the public roads and the proposed construction traffic data required for the construction of the Broken Hill Solar PV Solar Plant.

The existing traffic flows for the public roads that are expected to be utilised during the construction of the power station, have been obtained from the NSW Roads and Maritime Services (RMS). Traffic volumes for the proposed access road have been obtained from the existing lessee of the Western Lands lease.

Table E.2: Existing Traffic Volumes

Traffic Counter Locations	Combined (Two-way) Traffic Flows		
	AADT	AM Peak (8-9am)	PM Peak (5 -6pm)
Barrier Highway, East of Broken Hill	886	47	50
Silver City Highway, South of Broken Hill	388	24	24
Barrier Highway, West of Gypsum Street, Broken Hill[1]	2,002	141	139
Barrier Highway, 12.8km West of Broken Hill	1209	68[2]	77[2]
Proposed Access Road	16	0	0

[1] Station ID 98079, SH8 (Barrier Hwy), Broken Hill – 12.8km west of Post Office – 2010-2011 Data,

[2] The actual peak period at this location is between 9-10am (85 vehicles) and 3-4pm (86 vehicles) during the weekdays.

As shown above, both the existing daily and peak hour traffic volumes on the respective highways in the vicinity of the site are very low, being more akin to local road traffic volumes. The low traffic volumes recorded are due to the proposed location of the site and surrounding land use context.

The traffic volumes from the proposed access road (16 vehicles) have not been included in the analysis as the vehicles are expected to be leaving from the access road in the morning peak rather than arriving to site.

E.6 Construction Traffic

E.6.1 Introduction

This section quantifies the vehicle types, origins and peak periods for construction traffic. It presents traffic data in three sections:

1. Construction traffic for CPP activities.
2. Construction traffic for First Solar activities.
3. Cumulative construction traffic for both CPP and First Solar traffic combined.

E.6.2 CPP Construction Traffic

E.6.2.1 Description of Construction Traffic

The current CPP development program for the Broken Hill project has construction scheduled to commence in end October 2014 and completion in early February 2015.

CPP will be undertaking construction works in accordance with the standard construction hours outlined in Condition B24 of the Project Approval, specifically:

- Monday to Friday – 7:00am to 6:00pm
- Saturdays – 8:00am to 1:00pm

Works outside of the standard construction hours are provided for under Condition B25 of the Project Approval.

The construction traffic would typically consist following types of vehicle movements:

- **Light Vehicles** – Project and personal vehicles would be used to commute to and from the construction site and accommodations in Broken Hill city.
- **Standard Trucks** – The truck dimensions are 12.5m in length and 2.5m in width. These trucks would include concrete agitator trucks, truck mounted Elevated Work Platforms, truck mounted auger and a crane.
- **Standard Articulated Trucks** – The truck dimensions are 19m in length and 2.5m in width. These trucks are expected to transport construction equipment and materials such as poles and conductor.
- **Oversize Vehicles** – CPP does not need to use any oversize or overweight vehicles.

All vehicle dimensions are in accordance with Austroads Design Vehicles, 2006.

E.6.2.2 Traffic Volumes

The traffic volumes expected to be generated by the various CPP construction activities throughout the 10 week period are summarised in the following table.

The peak hourly traffic volumes are expected daily between 6:00am -7:00am and 5:00pm-6:00pm.

Table E.3: Expected CPP Construction Traffic Generation

Type	Origin	Size / Type of Vehcile	Frequency (per day)	Total Number of Trucks	Comment
Materials					
Poles	Sydney or Melbourne	Standard Articulated: 42.5t max<19 m	0.05vpd/0.1vmpd	3	No oversize heavy vehicles required.
Conductor	Sydney or Melbourne	Standard Articulated: 42.5t max<19 m	0.03vpd/0.06vmpd	2	
Concrete	Broken Hill	Standard: <12.5 m standard agitator truck	0.09vpd/0.18vmpd	5	5 strained termination poles; balance direct embedded
Materials Total	Over 60 day period (arrive loaded depart empty)		0.17vpd/0.34vmpd	10	
Personnel					
Staff Vehicles	Broken Hill	Utilities	6 vpd/12 vmpd		Represents the peak, which would be restricted to a 2 week period when the conductor is strung.
Equipment Note1					
Auger	Broken Hill	Standard: <12.5 m	1vpd/1vmpd during 2 day mobilisation and demobilisation	1	Truck mounted auger delivered to site and stay on site for construction period.
Crane	Broken Hill	Standard: <12.5 m	1vpd/1vmpd during 2 day mobilisation and demobilisation	1	Crane delivered to site and stay on site for construction period.

Type	Origin	Size / Type of Vehcile	Frequency (per day)	Total Number of Trucks	Comment
Elevated Work Platforms	Broken Hill	Standard: <12.5 m	3vpd/3vmpd during 2 day mobilisation and demobilisation	3	3 truck mounted EWPs delivered to site and stay on site for construction period.
Equipment Total	Over 2 day mobilisation/demobilisation period)		5vpd/5vmpd	5	
Peak Daily Movements					
Based on sum of Materials Deliveries (0.34), Personnel (12) and Construction Equipment (5) for a 60 day period (including mobilisation and demobilisation periods).					17.34 vmpd
Peak Hourly Movements					
Based on 6 vpd for Light Vehicles (utilities) during peak hours (6-7am and 5-6pm)					6 vph

Note: vpd= vehicles per day, vmpd = vehicle movements per day.

Note 1: Plant equipment would be delivered at the start of construction and then remain on site for the duration of works. Hence there is no difference between vpd and vmpd

The following table outlines the Peak Daily Movements to site, including Direction of Travel from Origin.

Table E.4: CPP Peak Daily Movements to Site (including Origin)

Origin	Size / Type of Vehicle	Heading to Site (Turn in)	Frequency (per day)
Adelaide	None	Eastbound (right)	none
		Total (Eastbound)	**0vpd / 0vmpd**
Broken Hill	Standard Articulated: 42.5t max<19 m	Westbound (left)	0.08vpd/0.16vmpd
Broken Hill	Standard: <12.5 m	Westbound (left)	5.09vpd/10.18vmpd
Broken Hill	Utilities	Westbound (left)	6 vpd/12 vmpd
		Total (Westbound)	**11.17vpd / 22.34vmpd**
		Total Number of Vehicle Movements	**23vmpd**

The only construction traffic expected to be on the public road network in the vicinity of the site in the 6:00am – 7:00am peak period would be light vehicles for employees commuting to the construction site.

During the 5:00pm – 6:00pm peak hour the majority of this traffic will be the reverse of the morning traffic and include primarily eastbound vehicles heading for the Broken Hill city area.

The total anticipated traffic generated by CPP at the site will be 3 vehicles per peak hour (morning and afternoon respectively) during the peak construction periods for the project.

E.6.3 First Solar Construction Traffic

E. 6.3.1 Traffic Volumes

The traffic volumes expected to be generated by the various First Solar construction activities, as specified in First Solar's TMP(Version E, 30/06/2014), are summarised in the following table.

Table E.5: Expected First Solar Construction Phase Traffic Generation

Type	Origin	Size / Type of vehicle	Frequency (per day)	Total No. of Trucks
Materials				
Modules	Adelaide	79t, 36.5m Road Train	0.83vpd/1.66vmpd	150
Posts	Melbourne / Geelong	42.5t max <19m	0.17vpd/0.33vmpd	30
Tilts	Melbourne	42.5t mx <19m	0.05vpd/0.1vmpd	9
Tables	Adelaide	79t, 36.5m Road Train	0.5vpd/1vmpd	90
Electrical & Cables	Sydney	42.5t max <19m	0.28vpd/0.55vmpd	50
Shelters	Adelaide	42.5t max <19m	0.23vpd/0.47vmpd	42
Inverters				
Transformers				
PVCS/PVIS				
Materials Total	Over 180 day period **(arrive loaded & depart empty)**		2.08vpd/4.16vmpd	375
Personnel to Site				
Private Staff Vehicles	Broken Hill and surrounding areas	Light vehicle with GVM <4.5t	40vpd/80vmpd	NA
Equipment				
Equipment	Sydney / Dubbo to site	42.5 max <19m	8vpd/16vmpd during 10 day mobilisation and de-mobilisation period	NA
Peak Daily Movements Based on the sum of Materials Deliveries (8.3), Employees and Staff (80) and Construction Equipment (16) for 180 day period (including mobilisation and de-mobilisation periods)				**101.0 vpmd**
Peak Hourly Movements **Based on 40vpd for Light Vehicles during the peak hours (6-7am and 5-6pm)**				**40 vph**

Source: First Solar Construction Traffic Management Plan (Version E, 30/06/2014)

** vpd – Vehicles per day, vmpd –Vehicle movements per day, vph – Vehicles per hour*

The following table outlines the Peak Daily Movements to site, including Direction of Travel from Origin for First Solar's construction traffic.

Table E.6: First Solar's Peak Daily Movements to Site (including Origin)

Origin	Size / Type of Vehicle	Heading to Site (Turn in)	Frequency (per day)
Peak Daily Movements			
Adelaide	79t, 36.5 road	Eastbound (Right)	1.33vpd / 2.66vmpd
Adelaide	4.25t max <19m	Eastbound (Right)	0.25vpd/0.51vmpd
		Total (Eastbound)	**2vpd / 4vmpd**
Melbourne / Geelong	42.5t max <19m	Westbound (Left)	0.22vpd/0.43vmpd
Sydney	42.5t max <19m	Westbound (Left)	0.28vpd/0.55vmpd
Broken Hill and surrounding areas	Light vehicle with GVM <4.5t	Westbound (Left)	40vpd/80vmpd
Sydney / Dubbo to site (10 day mobilisation and demobilization periods)	42.5t max <19m	Westbound (Left)	8vpd / 16vmpd
		Total (Westbound)	**48.5vpd / 97vmpd**
		TOTAL NUMBER OF VEHICLE MOVEMENTS	**101vmpd**

Source: First Solar Construction Traffic Management Plan (Version E, 30/06/2014)

** All movements heading out of site will be in the opposite direction*

The total anticipated traffic generated by the site will be 40 vehicles per peak hour (morning and afternoon respectively) during the peak construction periods for the project. The only construction traffic expected to be on the public road network in the vicinity of the site in the 6:00am – 7:00am peak period would be the light vehicles from employees commuting to the construction site. During the 5:00pm – 6:00pm peak hour the majority of this traffic will be the reverse of the morning traffic and include primarily eastbound vehicles heading for the Broken Hill city area. The AM peak period does not align with the general business peak period (8-9am). The traffic data obtained along Barrier Highway (12.8km west of Broken Hill) indicate that the peak period is between 3-4pm. This does not align with the peak period anticipated from the construction works. Therefore, the overall effect with the additional traffic volumes generated along Barrier Highway, Broken Hill would be no more than minor.

As the project schedule progresses the number of logistical deliveries and onsite personnel required for undertaking the construction works will decrease.

The project construction program commences in July 2014 with a projected completion of September 2015. It is anticipated that the approximate number of construction days are 460 (with the assumption that the site is operational for seven working days per week).

The total expected traffic generation, by vehicle size, is detailed in the following table.

Table E7 First Solar's Total Construction Traffic Generation by Vehicle Size

Vehicle Type:	Total Movements:
79t, 36.5m Road Train	479
42.5t max <19m	509
Light vehicles	55,200
TOTAL	**56,188**

Source: First Solar Construction Traffic Management Plan(Version E, 30/06/2014)

The draft First Solar schedule for the material delivery is as follows:

The total anticipated

- August 2014 to May 2015 – Posts, Tilts, Tables, Construction equipment, Electrical& Cable and PVCS/PVIS
- January 2015 to June 2015 – Solar PV Modules
- January 2015 to June 2015 – Inverters, transformers and shelters

E.6.4 Cumulative Construction Traffic

Provided below is a quantification of total construction traffic generation, incorporating traffic resulting from both First Solar and CPP construction activities.

Table E.8: Total Expected Construction Traffic (First Solar and CPP)

Type	Size/Type of Vehicle	Frequency (per day)	Total Number of Trucks
Materials		2.25vpd/4.5vmpd	385
	Personnel		
Staff Vehicles	Utilities	46vpd/92vmpd	-
Equipment		13vpd/21vmpd	5
Peak Daily Movements			
Based on sum of Materials Deliveries (0.34), Personnel (12) and Construction Equipment (5) for a 60 day period (including mobilisation and demobilisation periods).			118.34 vmpd
Peak Hourly Movements			
Based on 46 vpd for Light Vehicles (utilities) during peak hours (6-7am and 5-6pm)			46 vph
Note: vpd= vehicles per day, vmpd = vehicle movements per day.			

The following table outlines the Peak Daily Movements to site, including Direction of Travel from Origin, incorporating traffic resulting from both First Solar and CPP construction activities.

Table E.9: Peak Daily Movements to Site (First Solar and CPP)

Origin	Heading to Site (Turn in)	Frequency (per day)
Eastbound	Right	2vpd/4vmpd
Westbound	Left	59.67vpd/119.34vmpd
Total Number of Vehicle Movements		**123.34vmpd**

The table below presents total construction traffic generation by vehicle size.

Table E.10: Total Traffic Generation by Vehicle Type

Vehicle Type	First Solar	CPP	Total
79t, 36.5m Road Train	479	0	479
42.5t max<19m	509	5	514
<12.5m Standard Truck	0	10	10
Light Vehicle	55,200	210	55,410
Total	**56,188**	**225**	**56,413**

E.7 Construction Traffic Measures

E.7.1 Management and Coordination of Vehicles

This section discusses CPP's methods to manage and coordinate its construction vehicles and movements of construction personnel to identify methods of minimising the impact on the public road network.

Parking will be undertaken in the dedicated CPP laydown compound.

A HAZID (hazard identification) study will be undertaken by CPP during the development of the Project Site Safety Plan (PSSP). The purpose of the HAZID is to identify risks associated with use of vehicles either transporting construction personnel or construction materials (including plant and equipment). Once health and safety related risks are identified, appropriate risk mitigation measures will be put in place by the CPP Health and Safety Team.

E.7.1.1 Employee Transportation

Personnel will be accommodated in Broken Hill and drive to the construction site daily. It is assumed utility vehicles will be used and each trip will contain two people.

E.7.1.2 School Bus Services

The peak periods generated by construction traffic will be during 6-7am and 5-6pm.

Based on advice received from Murtons City Buses, the sole school bus provider in Broken Hill, school buses will be operating on local roads during the following periods:

1. 8am to 9am Monday to Friday (school term)
2. 2.30pm to 3.30pm Monday to Friday (school term)

The school bus times do not clash with the peak construction traffic movements.

Provisional advice received from Murtons City Buses is that there are no school bus routes past the construction site.

CPP is committed to minimising potential effects on local school bus services and will work to schedule the delivery to construction materials (including plant and equipment) to periods outside of the school bus times indicated above (as far as practicable).

E.7.1.3 Vehicle Logistics and Coordination at Site

CPP has the experience and expertise to ensure that the vehicles transporting materials and or employees:

- Arrive at site in an orderly manner – all personnel working on site will be inducted with entering and exiting the site
- Meet the resources available to undertake the offloading of goods
- Do not cause platooning
- Will arrive within the approved delivery times.

It is expected that the peak periods for the vehicles transporting materials and / or employees will not impact on the local road network, given the proposed management measures and the very low existing traffic volumes on the routes in the vicinity of the power plant site.

The Environmental Impact Statement (EIS) has previously confirmed that the wider effects of this routing of construction vehicles to / from the site can be accommodated satisfactorily, without additional mitigation measures.

E.7.1.4 Logistics of Site Deliveries

To ensure that the materials are delivered onsite, on time, First Solar will have a logistics coordinator dedicated to the Broken Hill project. This logistics employee will be responsible for liaising with the Project Managers at the haulage companies on a daily basis and will monitor and manage the program and delivery schedules. The scheduling of the materials (including plant and machinery) will be programmed to ensure that the delivery times do not coincide, whilst maintaining the deadlines of the construction program. There are some limitations to the haulage movements and number of deliveries to site each day from the origin, which will therefore limit the potential for vehicles to impact the network i.e. convoys or platoons.

CPP will liaise with the First Solar Logistics Coordinator as required.

E.7.2 Driver Code of Conduct and Site Inductions

CPP relies on freight haulage companies for the delivery of construction materials to site. The outsourcing of haulage puts a requirement on haulage companies to manage their drivers within the bounds of the legislative requirements from the NSW Code of Practice for Long Haul Drivers, i.e. log book entries, verification of licenses etc.

On arrival to site CPP will induct all haulage drivers in to the site. During this induction process CPP will ensure compliance by its haulage company(ies) to the NSW Code of Practice for Long Haul Drivers. Long haul drivers will be prevented from driving from the site where they are found to be operating in a manner that is not in accordance with the requirements of the NSW Code of Practice for Long Haul Drivers.

CPP has driver behavioural expectations and a site delivery process, which includes:

- Engagement of local drivers (where practicable) to ensure familiarity with the haulage routes
- Planned layover areas defined in advance by haulage company 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, deliveries undertaken in a manner that is not in accordance with CPP requirements may result in the truck being turned away and a complaint made to the haulage company
- Driver site induction, including security gate process, consideration and courtesy are essential when driving on public roads; and speed limits must be strictly adhered to.

  As part of the Project Induction all personnel will be instructed not to exceed speeds of 25 kmphr.
- Logistics will escort all delivery vehicles to laydown areas

E.8 Statutory Responsibilities

The Environmental Impact Statement (EIS) was prepared by Sinclair Knights Merz (SKM) in relation to the planning application for the Broken Hill Solar PV Power Plant. The EIS identified relevant statutory framework within which the planning application was considered.

Of relevance to the preparation of this TMP are the following statutory documents:

E.8.1 Roads Act 1993

Under Section 138 of the Roads Act 1993 (Roads Act), the roads authority regulates the undertaking of various activities in, on and over public roads and consent shall be obtained from the relevant roads authority.

The Barrier Highway is a classified road and is under RMS jurisdiction. In accordance with its agreement with CPP, responsibility for consultation with the RMS with regards to the upgrade of the site access and Barrier Highway intersection is that of the Proponent (AGL).

E.8.2 State Environmental Planning Policy (Infrastructure) 2007

The EIS identified Clause 104 of the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP), which relates to traffic generating developments. Clause 104 identifies a requirement for further referral to the Roads and Maritime Services (RMS). The EIS concluded that for the purposes of power generation, the requirement of Clause 104 does not apply as the Broken Hill Solar PV Power Station project as the project would result in the generation of fewer than 200 vehicles per day during construction or operation. On this basis Clause 104 was deemed to be not applicable. This is supported by the figures in Section E.6.4.

E.9 General Measures to Minimise Interactions

E.9.1 Access Intersection Upgrades

Some proposed upgrades at the intersection of Barrier Highway and the site access are identified in the Broken Hill Solar Power Plant Environmental Impact Statement (SKM, October 2012). The report states that upgrades of the intersection is required to allow for safe entry and exit of vehicles from the site to maintain efficiency of traffic flow on Barrier Highway.

Based upon an assessment of existing traffic data along the Barrier Highway and the expected traffic volumes accessing the site noted in Section 7.4.6 above, and utilising Figure 4.9 from Austroads Guide to Road Design – Part 4A, it has been calculated that a Basic Left Turn (BAL) and Basic Right Turn (BAR) type access arrangement is considered appropriate (refer Figures 7.5 and 8.2 of Austroads Guide to Road Design Part 4A, 2010). Figure 5 below shows the assessment detail for the proposed intersection for the AM peak period when the turning volumes into the site will be the highest.

The volumes from 12.8km west of Broken Hill along Barrier Highway has been used for this assessment as this would provide a better representation of the AADT rather than the volumes obtained west of Gypsum Street. The assessment has been based on the following volumes:

- QR / QL - The turning volume into the site is anticipated to be in the order of 46vph during 6am to 7am when workers arrive at site. An assumption has been made that 100% of the vehicles turn either right or left into the site providing a worst case scenario
- QM – the hourly count on the Barrier Highway in 2010 – 2011 (axle pair count) for the 6am to 7am period was 24vph. Allowing for 2 years of traffic growth at 2% per annum to predict a 2014 volume gives an hourly traffic flow in the order of 25vph.

These arrangements are the minimum treatment for use on high speed rural environments such as the Barrier Highway. They are suited to low traffic volumes and provide a suitable safety environment for through-traffic utilising the highway and turning vehicles accessing the site.

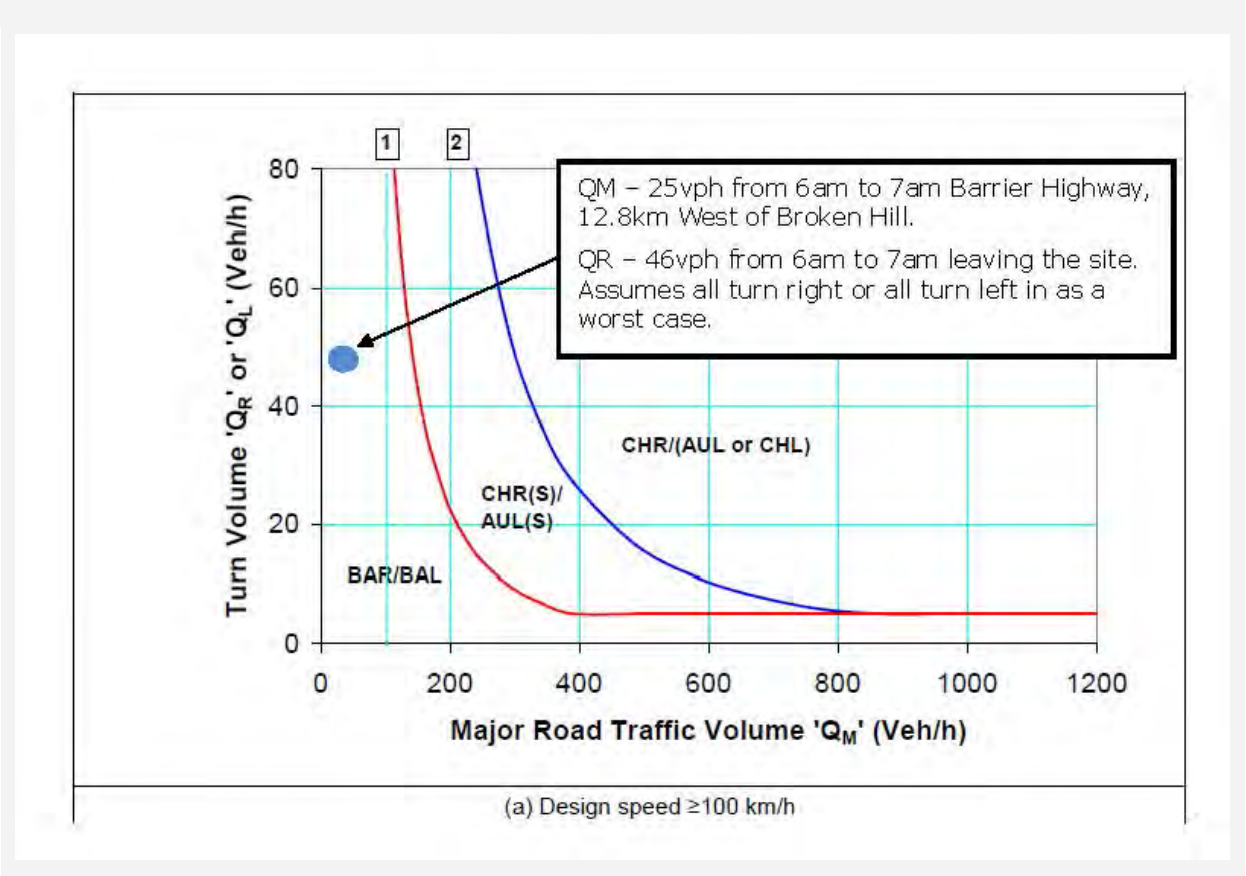

Figure E.4: Warrants for Turn Treatments in rural area – AM peak period flows

A check has also been made of for the PM peak when vehicles are leaving the site as this is when the flows on the Barrier Highway are higher, which is shown in Figure E.5. This shows that during this period A BAR / BAL is also suitable for this access.

- QL - The turning volume out of the site is anticipated to be in the order of 46vph during 5pm to 6pm period when workers leave the site. An assumption has been made that 100% of the vehicles turn either right or left out of the site providing a worst case scenario
- QM – the hourly count on the Barrier Highway in 2010 – 2011 (axle pair count) for the 5pm to 6pm period was 77vph. Allowing for 2 years of traffic growth at 2% per annum to predict a 2014 volume gives an hourly traffic flow in the order of 80vph.

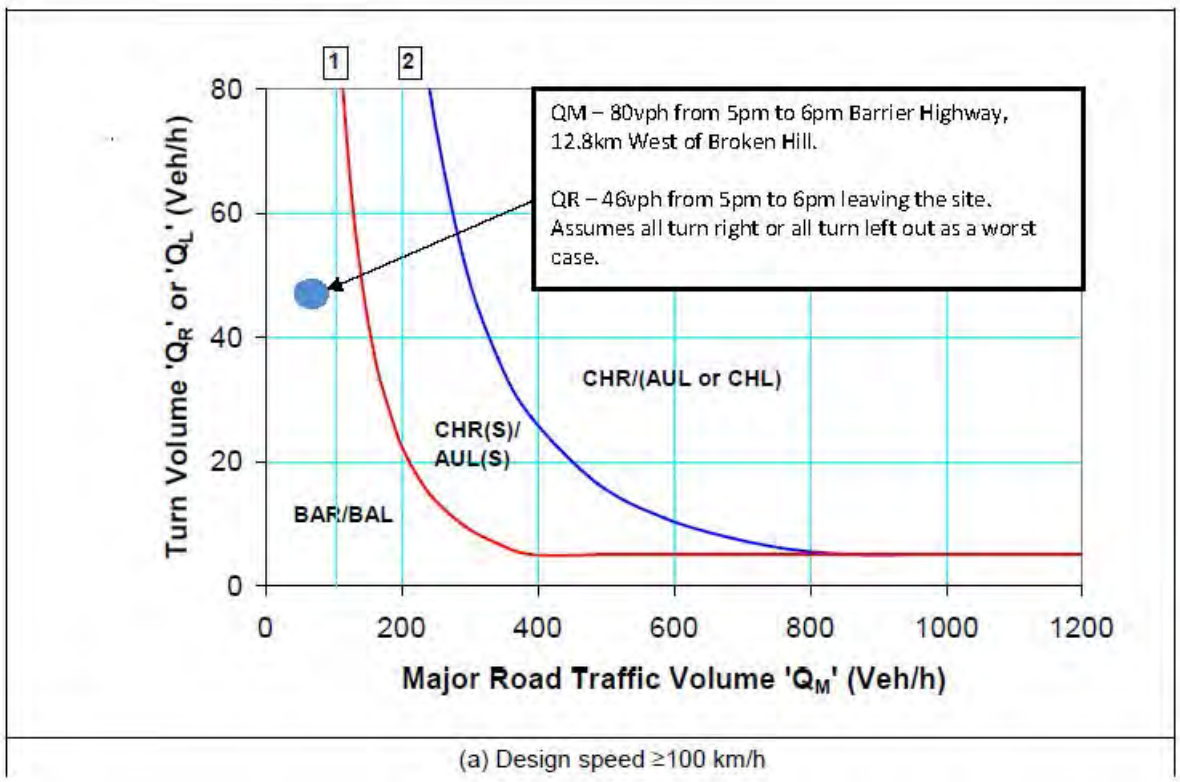

Figure E.5: Warrants for Turn Treatments in rural area – PM peak period flows

An assessment of sight distances at the site access along the Barrier Highway suggests that there is suitable unrestricted visibility to accommodate the proposed intersection arrangement at its current location. The available sight distance was greater than 300m, which is the required safe intersection sight distance for a design speed of 110km/h, as detailed in Austroads Guide to Road Design Part 4A Unsignalised and Signalised intersections - Table 3.2.

A conceptual desktop assessment of traffic safety has been undertaken, as part of First Solars's Traffic Management Plan (Version E, 30/06/2014), based on the expected turning volumes and sight distances available at the intersection as detailed above and there are not expected to be any significant safety concerns at the intersection. However it is noted that further road safety audits will be required during the design stages of the intersection upgrade.

E.9.2 Livestock Safety

AGL will work with the neighbouring landowners to identify and undertake fencing to ensure that the access road is fenced with livestock proof fencing prior to construction commencing.

E.9.3 Speed Limits

Speed limits within the site will be imposed by CPP to provide safe movement within the site, where required. The speed and vehicle movement requirements will be detailed within the onsite Vehicle Movement Plan (VMP) being separately prepared by CPP as part of the Project Site Safety Plan. It is expected any driver operating a vehicle within site will be inducted and required to adhere to the posted speed limits. Vehicle movement requirements will form part of the General site H&S induction.

E.9.4 Restricted Vehicle Access

CPP construction activities do not require the use of any Restricted Access Vehicles (RAV, or over size / dimension vehicles).

E.10 Traffic Management Plan Implementation

E.10.1 Roles and Responsibilities

The roles and responsibilities for the implementation of the TMP are indicated in the following table:

Table E.11: Roles and Responsibilities

Implementation Entity Role	Responsibility
CPP	Implementation of the Construction Traffic Management Plan
All Personnel (including haulage drivers)	Follow and adhere to all guidelines and project rules with respect to traffic management both external and internal to the project site
Road haulage companies utilised by CPP	Implementation and adherence to the CPP Construction Traffic Management Plan, with particular respect to haulage driver requirements

E.10.2 Traffic Management Plan Audit and Review

The TMP will be audited and reviewed in accordance with AGL Environmental Management Systems.

E.10.3 Competence Training and Awareness

All personnel working on the project will undergo a project site induction in accordance with the CPP Worker Environmental Awareness and Compliance Training procedure.

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 being prepared by CPP
- Speed limits must be strictly adhered to within the site and on the public roadways
- All personnel must only utilise the identified routes to, from and within the site.

After completing the induction workers will sign a statement of attendance and records of this will be kept in the site office.

E.10.4 Traffic Control Requirements

There is no requirement or intent to use signage, barriers or traffic control personnel.

Appendix F – Flora and Fauna Management Plan

F.1 Scope

COA C3(a) requires that a Flora and Fauna Management Plan (FFMP) form part of the Construction Environmental Management Plan (CEMP) for the Broken Hill Solar Plant.

Two CEMPs are being prepared for this project. First Solar is the contractor responsible for building the solar plant and associated access to the site. CPP is the contractor responsible for constructing the grid connection works. These latter works involve the erection of 2.7 km of overhead transmission line.

This FFMP forms part of CPP's CEMP and deals exclusively with managing environmental impacts associated with the grid connection works.

A second CEMP (and by default a second FFMP) is being prepared by First Solar for the solar plant and associated access.

F.2 Objectives

COA C3(a) states:

(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 project. 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 project, such as location of fencing, procedures for vegetation clearing or soil removal/stockpiling and procedures for 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) reference to the Ground Cover Management Plan and the Management Plan for the raptor nesting site required in Condition C3(b) and B18 respectively; and*
- *(v) a procedure to review management methods where they are found to be ineffective.*

F.3 Vegetation Communities and Habitat Areas

COA C3(a) states the *Flora and Fauna Management Plan should include* 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.

F.3.1 Vegetation Types

The grid connection will traverse three vegetation types.

Black Bluebush low open shrubland:

Open low shrubland structure dominated by chenopod shrub species including Black Bluebush and Pearl Bluebush (up to 1.5 m high). Other common shrub species include Silky Bluebush, Bladder Saltbush and Angular Saltbush. There is a low abundance of taller shrub species 2-4 m high such as Prickly Wattle, Dead Finish and Narrow-leaf Emu-bush and Several Cassia species are also dispersed throughout this community. The groundlayer is highly diverse supporting a mix of herbs, grasses and small shrubs including Corrugated Sida, Sturt's Desert Pea, Broken Hill Pea, Variable Daisy, Speargrass, Red-flowered Lotus, Bottle Washers and Ruby Saltbush. There are some weed species scattered throughout this community particularly along the edges of trails. Dominant introduced species include Onion Weed, Ward's Weed, Common Ice Plant and Saffron Thistle.

Over ~90% of the ETL will traverse this vegetation type.

Prickly Wattle open shrubland

Sharing many of the same species as the above, however it has a denser ground cover with less shrub cover, and numerous areas of bare ground caused by erosion during storm events. It has an open low shrubland structure and is dominated by chenopod shrub species including Bladder Saltbush Mallee Saltbush and Angular Saltbush to 1 m high. Other common shrub species include Black Bluebush, Pearl Bluebush, Western Boobialla, Prickly Wattle and Cassia. The ground layer is relatively dense in areas of this community due to the higher moisture availability. Dominant groundcover species include: grass species such as Bottle Washers, Leafy Nineawn, Windmill Grass, Scent Grass and Queensland Bluegrass; small shrubs including Low Hibiscus, Silky Bluebush and Twiggy Sida; herb species include Variable Daisy, Fuzzweed, Sarcozona and Flat Billy-buttons. Scrambling species were also relatively common along drainage lines including Bindweeds and Climbing Twinleaf. There were some small pools present at the time of the survey along the drainage lines which supported semi-aquatic species such as Common Nardoo and Lesser Joyweed. There are some weed species scattered throughout this community particularly at the northern end of the main drainage line. Dominant introduced species include Trailing Verbena, Square-stemmed Vetch, Pepper Tree and Maltese Cockspur.

Less than ~1% of the ETL will traverse this vegetation type.

Mulga-Dead Finish

Occurring on elevated lands and extending down onto the flatter areas. It is distinguished from other vegetation communities by the tall open shrubland structure to 4 m high dominated by Mulga, however it shares many of the same species as the surrounding Chenopod shrublands. Other shrub species present in this community which may be dominant in areas include Sandhill Wattle, Prickly Wattle, Silky Blusbush, Cannonball Burr, Narrow-leaved Hopbush, Thargomindah Nightshade.

The ground layer is dense to open and includes a mix of grasses, herbs and sub-shrubs. Dominant groundcover species include grasses such as Bottle Washers, Leafy Nineawn, Mallee Lovegrass and Speargrass. Other dominant groundcover species include Ruby Saltbush, Broken Hill Pea and *Glycine rubiginosa*.

There are some weed species scattered throughout this community particularly along the edges of trails and in other disturbed areas. Dominant introduced species include Onion Weed and Ward's Weed.

Around ~9% of the ETL will traverse this vegetation type.

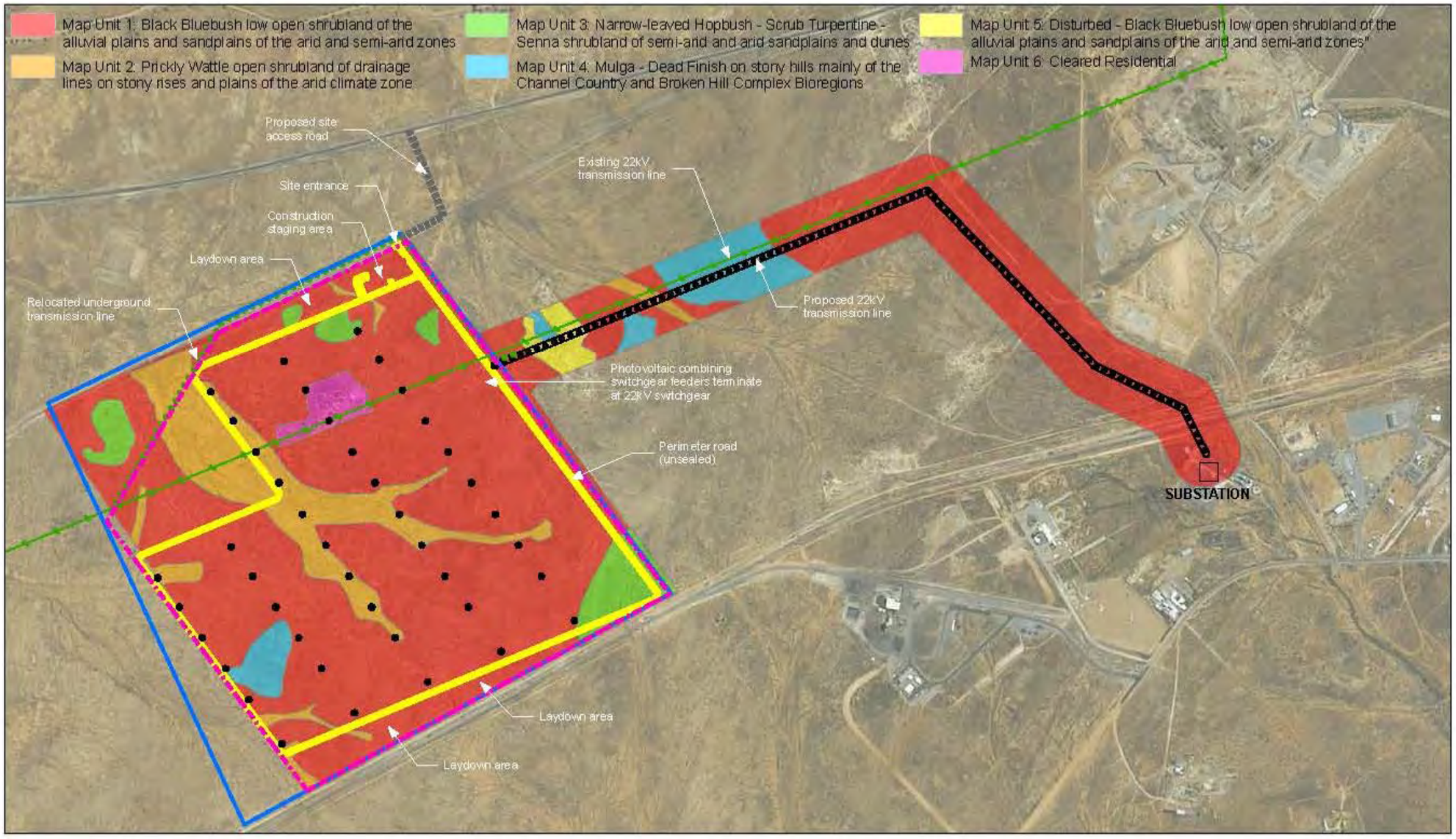

Figure 2-1 Indicative project layout and distribution of vegetation types (subject to detailed design)

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Figure F.1: above identifies the mapped extents of these vegetation types in relation to the grid connection works.

F 3.2 Threatened Ecological Communities

No threatened ecological communities listed under TSC Act or EPBC Act have been identified on the site or immediate surrounds. Only one EEC has been identified as potentially occurring in the study area comprising *Acacia loderi* Shrubland, however the field survey undertaken in the Environmental Assessment confirmed the absence of this community on the site. Several other species of Wattle (*Acacia*) were recorded however targeted searches did not identify the threatened species Nealie (*Acacia loderi).*

F.3.3 Threatened Flora Species

No threatened flora species were recorded from the targeted searches across the project site. Two threatened flora species were identified from the initial habitat assessment as having a high likelihood of occurring, the Koonamore Daisy (*Erodiophyllum elderi*) and the Creeping Darling Pea (*Swainsona viridis*). Both species were targeted from comprehensive surveys across the entire proposed project area including the transmission line corridor and were found to be absent.

F.3.4 Threatened Fauna Species

No threatened fauna species have been identified on the site.

F.4 Management Methods

COA C3(a)(ii) requires the Flora and Fauna Management Plan to include methods to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the project, such as location of fencing, procedures for vegetation clearing or soil removal/stockpiling and procedures for re-locating hollows or installing nesting boxes and managing weeds.

F.4.1 Vegetation Clearance

Impacts to vegetation will include both temporary and permanent impacts.

Permanent impacts will be negligible and be restricted to the area required to accommodate the 18 poles to be erected as part of the grid connection works. With an assumed base diameter of each pole foundation of 1m, permanent vegetation loss would be $<15m^2$.

No vegetation clearing is required with respect to achieving acceptable electrical clearances between the existing site vegetation and the conductors. The line route, the type of vegetation and the height of the poles allow for the new line to be energised without the need for any vegetation removal.

Temporary vegetation disturbance will be restricted to the establishment of a cleared access strip, from pole to pole, for construction plant (utility vehicles, crane, concrete truck and truck mounted Elevated Work Platforms), for setting up for conductor and OPGW stringing, and during the running out of draw wires.

Where possible CPP would gain pole to pole access by weaving the access in and around vegetation to pick cleared areas and minimise the disturbance to herbage, as well as utilise some of the numerous formed access tracks that already traverse the Willyama Common.

Vegetation clearing associated with establishing this access will not entail grading into soil: no earthworks in terms of building an access track formation are required or proposed. Vegetation clearing would be restricted simply to running a grader along the proposed track, with the blade slightly above ground level. Vegetation cleared in this manner will be left in a windrow immediately adjacent to the access track – for the duration of construction.

Clearing would be restricted to a strip approximately 4m wide for the 2.7km.

These works would only result in a temporary disturbance to vegetation as AGL do not need or intend to maintain this access track post construction of the overhead line.

F.4.2 Rehabilitation

On completion of construction CPP will rehabilitate this access track. The rehabilitation technique will include shallow ripping of the access track to restore the soils infiltration capacity and reverse any effects of compaction that has resulted from vehicle movements.

The windrowed vegetation would then be pulled back over and spread across the former access track to facilitate revegetation. On the advice of OEH, discussions were held with the Department of Primary Industries (Mineral Resources) in Broken Hill, to discuss techniques for rehabilitation that work in the Broken Hill environment. These discussions indicate very little re-seeding (either broadcast or direct seeding) is undertaken in this region.

Instead, pulling vegetation back over temporarily disturbed areas to assist in moisture control, as well as trapping and sheltering the seed bank, was identified as a rehabilitation technique that does work in this region.

These works will be undertaken immediately on completion of construction works and will help ensure revegetation with locally endemic native species.

Post construction, and until the independent expert verifies that the compound area is well established, in good health and self-sustaining, CPP will undertake annual monitoring inspections to check the progress of the rehabilitation and stability of the compound and access track, complemented initially with inspections following significant localised rainfall events.

F.4.3 Ecologist

Consistent with SOC FF5, CPP will engage an ecologist to undertake a pre-clearing survey and to be present during all clearing activities. Clearing will be undertaken consistent with advice provided by the ecologist.

The handling and relocation of any native fauna, if required, would be undertaken by an ecologist/wildlife carer who is suitably qualified and licensed.

F.4.4 Weed Control

To prevent the introduction and/or spread of weeds CPP will ensure plant and vehicles arrive clean on-site and leave clean.

F.4.5 Induction

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.

F.5 Procedures

COA C3(a)(iii) requires the Flora and Fauna Management Plan to include procedures to accurately determine the total area, type and condition of vegetation community to be cleared.

This section identifies the procedures to be followed to accurately determine the total area, type and condition of the vegetation community to be cleared.

A *Biodiversity Offset Management Plan* (ngh environmental, July 2013) has been prepared for the solar plant project. This *BOMP* includes an assumption that the full 30 metre wide easement for the overhead powerline would be cleared (ie. 8.5 ha).

As demonstrated above, this significantly overstates the extent of clearing that will be undertaken. Permanent vegetation clearance would be <15m^2 and areas subject to temporary vegetation disturbance restricted to ~1.08 ha (ie. 4 m wide access strip for the 2.7 km length).

Notwithstanding, the offset area proposed for the solar plant by AGL, which is an area of 149.3 ha, is predicated on vegetation clearance of 8.5 ha for the grid connection works.

CPP will instruct the roller/grader operator of the need to restrict clearance to the 4m wide access strip prior to these works being undertaken.

Consistent with SOC FF5, CPP will engage an ecologist to undertake a pre-clearing survey and to be present during all clearing activities. The scope of work undertaken by the ecologist will include physical mapping of the areas disturbed, as well as the type and condition of vegetation cleared.

CPP will provide this data to AGL.

F.6 Ground Cover Management Plan

COA C3(a)(iv) requires the Flora and Fauna Management Plan to make reference to the Ground Cover Management Plan required in COA C3(b).

This Ground Cover Management Plan, as defined by COA Cc3(b), applies to measures to ensure adequate vegetation cover and composition “beneath the solar PV array” and as such, is not relevant to the grid connection works.

F.7 Raptor Management Plan

COA C3(a)(iv) requires the Flora and Fauna Management Plan to make reference to the Management Plan for the raptor nesting site required in COA B18.

A *Raptor Management Plan* (ngh environmental, June 2013) has been prepared for the solar plant project consistent with COA B18.

No works to be undertaken by CPP associated with the grid connection fall within the two buffer triggers (350 metres and 400 metres) that trigger specific management protocols,

The grid connection works, at their closest point, is ~1.5 km from the nest tree.

Notwithstanding, all CPP workers and contractors will be informed of the nest site and relevant buffers during induction training.

CPP will also commence construction prior to the breeding season (August to October), as recommended in the *Raptor Management Plan*.

F.8 Review of Management Methods

COA C3(a)(v) requires the Flora and Fauna Management Plan to include a procedure to review management methods where they are found to be ineffective.

Consistent with SOC FF5, CPP will engage an ecologist to undertake a pre-clearing survey and to be present during all clearing activities.

CPP will engage the ecologist to include, in his/her scope, if and as required, a review of the management methods being employed during construction.

F.9 Responsibilities

The roles and responsibilities for the implementation of the FFMP are indicated in the following table:

Table F.1: Roles and Responsibilities

Implementation Entity Role	Responsibility
CPP	Implementation of the Flora and Fauna Management Plan
Ecologist	• Undertake a pre-clearing survey and be present during all clearing activities. • Complete physical mapping of the areas disturbed, as well as the type and condition of vegetation cleared. • If required, handle and relocate native fauna. • Review management measures adopted by CPP during construction and provide recommendations if and as required.

Appendix G – Ground Cover Management Plan.

G.1 Scope

COA C3(b) requires that a Ground Cover Management Plan (GCMP) form part of the Construction Environmental Management Plan (CEMP) for the Broken Hill Solar Plant.

Two CEMPs are being prepared for this project. First Solar is the contractor responsible for building the solar plant (ie. the solar arrays) and associated access to the site. CPP is the contractor responsible for constructing the grid connection works. These latter works involve the erection of 2.7 km of overhead transmission line.

This GCMP forms part of CPP's CEMP and deals exclusively with managing environmental impacts associated with the grid connection works.

A second CEMP (and by default a second GCMP) is being prepared by First Solar for the solar plant and associated access.

G.2 Applicability

COA C3(b) clarifies that the Ground Cover Management Plan is to outline measures to ensure adequate vegetation cover and composition ***beneath the solar PV array***.

The solar PV array is being built by First Solar.

Accordingly, the Ground Cover Management Plan required by COA C3(b) falls within the scope of First Solar's CEMP, and not CPP's CEMP.

Appendix H – Landscape Plan

H.1 Scope

COA C3(c) requires that a Landscape Plan form part of the Construction Environmental Management Plan (CEMP) for the Broken Hill Solar Plant.

Two CEMPs are being prepared for this project. First Solar is the contractor responsible for building the solar plant and associated access to the site. CPP is the contractor responsible for constructing the grid connection works. These latter works involve the erection of 2.7 km of overhead transmission line.

This Landscape Plan forms part of CPP's CEMP and deals exclusively with visual impacts associated with the grid connection works.

A second CEMP (and by default a second Landscape Plan) is being prepared by First Solar for the solar plant and associated access.

H.2 Objective

COA C3(c) states that the Landscape Plan should include:

(i) *identification of landscaping objectives and standards based on visual impacts and local environmental values (in particular the Pinnacles);*

(ii) *details of species used to enhance, mitigate and/or augment landscaping to minimise the visual impact of the project, particularly with respect to the impacts on nearby residences;*

(iii) *implementation, management and monitoring strategies to ensure the establishment and ongoing maintenance of landscaped areas;*

(iv) *a consultation strategy to seek feedback from affected residents and the interested community on the proposed landscape measures.*

H.3 Visual Impact

The Environmental Assessment prepared for the Broken Hill Solar Plant included a Visual Impact Assessment (Appendix F of the Environmental Assessment, skm). The project was approved on the basis of this assessment.

The visual impact assessment determined that the construction of the project may give rise to visual impacts associated with the presence of cranes, materials and general construction activity. These impacts would be limited to the construction period, which is expected to be approximately 17 months. On completion of construction, all construction plant, equipment and materials would be removed from the project site and all disturbed areas would be restored to a level that matches or improves upon their preconstruction condition. For this reason, the visual impact assessment focuses on the impacts that would be experienced once construction is completed over the lifetime of the project's operation.

The only location where the project is predicted to have a high visual impact is the area on the Barrier Highway, approximately 770 metres to the north east of the solar PV plant site, where the PV plant would affect views south west toward 'The Pinnacles'. The planting of locally indigenous, shrubby vegetation along the north eastern and part of the north western boundary of the solar PV plant site would reduce this adverse impact by a considerable amount while also preserving the visual amenity of 'The Pinnacles'. Planting along these site boundaries would also reduce the impact experienced from viewpoints on Silverton Road and Magazine Way.

These landscape plantings relate to the solar plant, as distinct from the grid connection line, and are to be undertaken by First Solar.

Significantly, the visual impact assessment concluded that visual impact mitigation was not required for the proposed transmission line.

This conclusion was predicated on the assumption that the power poles would be galvanised steel. This is still the case. The preference for the poles to be earthy tones such as pale green and pale brown is not being adopted.

It is also noted that the array of existing overhead transmission line infrastructure in the locality is galvanised finish.

Based on the above, no landscaping is proposed as part of CPP's works to minimise visual impact. There are two reasons for this.

1. The first is that the impact assessment (which was approved) determined that visual impact mitigation was not required.
2. The second reason is one of practicality. The transmission line will be in excess of 15m above ground level and it would not be possible to establish native endemic vegetation that would ever grow anywhere near the height needed to provide visual screening. Native vegetation communities in this locality typically do not exceed 3-5 metres in height.

H.4 Mitigation Measures

Measures that will be implemented by CPP during construction to minimise visual impacts include the following.

- Vegetation removal would be avoided as far as practicable during construction.
- Vehicles would remain on designated paths during construction to avoid degradation of the landscape.
- Construction equipment and infrastructure would be demobilised from site as soon as practicable and all unnecessary project flagging and signage would be removed and disposed of at the completion of construction.

H.5 Roles and Responsibilities

- The roles and responsibilities for the implementation of the Landscape Plan are indicated in the following table.

Table H1: Roles and Responsibilities

Implementation Entity Role	Responsibility
CPP Project Manager	Implementation of the Landscape Plan Construction Traffic Management Plan
All Personnel	Follow and adhere to the mitigation measures specified in this Landscape Plan.

Appendix I – Construction Noise Management Plan

I.1 Objective

COA C3(d) requires that a Construction Noise Management Plan (CNMP) form part of the Construction Environmental Management Plan (CEMP) for the Broken Hill Solar Plant.

Two CEMPs are being prepared for this project. First Solar is the contractor responsible for building the solar plant and associated access to the site. CPP is the contractor responsible for constructing the grid connection works. These latter works involve the erection of 2.7 km of overhead transmission line.

This CNMP forms part of CPP's CEMP and deals exclusively with managing noise impacts associated with the grid connection works.

A second CEMP (and by default a second CNMP) is being prepared by First Solar for the solar plant and associated access.

I.2 Scope

The scope of the CNMP is to identify all feasible and reasonable noise mitigation measures to be employed during construction. Specifically, COA C3(d) requires that the CNMP include:

(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.*

I.3 Construction Activities and Schedule

COA C3(d)(i) requires that the CNMP include details of construction activities and an indicative schedule for construction works.

The construction of the 2.7 km of new overhead transmission line will commence in end-June 2014 with site demobilisation finished by end-October 2014. The construction timeframe is 2.5 months.

Construction activities will entail the following:

Pole Delivery

The 18 poles will be delivered by standard truck direct to their respective erection point.

Civil Works

Civil works includes construction activity up to the point of establishing the foundations for pole erection. At each pole location a truck mounted auger will first dig a footing. A concrete agitator truck would pour the foundation. One agitator truck per two foundation pours is assumed (conservatively). Concrete foundations would then be left to cure over a nominal 14 day period. The foundations will be established sequentially allowing the next stage of construction (pole erection) to commence after the last pole foundation is poured.

Apart from the standard truck (with mounted auger) and concrete agitator truck, a crew of four (4) workers would undertake the civil works. Two utility vehicles for the civil crew is assumed.

Pole Erection

A crew of three (3) along with a crane operator and rigger would then erect the 18 poles. Two utility vehicles for the erection crew is assumed.

Stringing Conductor

Conductor would then be delivered to select ETL poles by a standard truck (fitted with a winch). A line crew of six (6) would then string the conductors. Three utility vehicles for the line crew is assumed. Three truck mounted elevated work platforms (EWP) would be used in the erection of the poles and stringing & clipping of conductors.

I.4 Construction Activities and Potential Noise Impacts

COA C3(d)(ii) requires that the CNMP include identification of construction activities that have the potential to generate noise impacts on surrounding land uses, particularly residential areas.

The construction works do not entail the use of any plant or equipment that would result in impulsive or tonal noise emission (such as rock breaking, rock hammering, pile driving).

Standard construction hours are defined as:

- 7:00 am to 6:00 pm Mondays to Fridays, inclusive;
- 8:00 am to 1:00 pm Saturdays; and
- at no time on Sundays or public holidays.

CPP propose to undertake construction on an 11/3 rotation and therefore construction activity would occur on some Saturday afternoons and some Sundays.

In these circumstances the Out of Hours Work Protocol would be followed prior to these works occurring.

The closest residential receiver is located approximately 970 m north-east of the transmission line on the Barrier Hwy. A further two receivers are located approximately 1 km south of the electricity sub-station on Pinnacles Road. Various light industrial businesses are located on the western outskirts of Broken Hill within 1 km of the transmission line.

The equipment to be used, the restriction of construction to standard construction hours, and the existing buffer to sensitive receptors, indicates that construction associated with the grid connection works have minimal potential to generate adverse noise impacts on surrounding land uses.

It is noted that the above is consistent with the noise impact assessment undertaken in the Environmental Assessment for the project. This assessment demonstrated that construction noise would comply with the applicable Noise Management Level (NML) specified in the Interim Construction Noise Guideline (DECC, 2009).

I.5 Noise Impact Statements

COA C3(d)(iii) requires that the CNMP detail the requirements for Noise Impact Statements (NIS) for discrete work areas, including construction site compounds.

Noise Impact Statements will be prepared if CPP, for reasons other than an emergency or a NSW Police instruction, want to work outside the approved standard construction hours and it does not have evidence that potentially affected residents do not object to the works.

These Noise Impact Statements will be prepared to demonstrate the ability to comply with applicable noise performance criterion, and will be submitted to the Environmental Representative, along 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.

In addition to the above, the Noise Impact Statements will provide detail on predicted noise levels in terms of compliance with the relevant noise criterion: generated 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.

I.6 Mitigation Actions

COA C3(d)(iv) requires that the CNMP detail what reasonable and feasible actions and measures would be implemented to minimise noise impacts.

General Induction Document

Employees and contractors will be informed of noise management measures, construction hours and nearest sensitive receptors.

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.

I.7 Sensitive Receiver Notification

COA C3(d)(v) requires that the CNMP include 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.

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.

I.8 Out-of-hours-work Protocol

COA C3(d)(vi) requires that the CNMP include an out-of-hours-work (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined in Condition B25 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.

Development consent condition B25 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 this Construction Noise Management Plan.*

In circumstances apart from an emergency, or NSW Police Force instruction, or CPP having evidence that potentially affected residents do not object to the works being undertaken outside standard construction hours, a risk assessment would be undertaken of the potential for out-of-hours-work to compromise acoustic amenity values. This assessment would be documented and detail anticipated compliance with the applicable noise performance criteria.

The documentation of this assessment would be in the form of a Noise Impact Statement

The Noise Impact Statement will provide detail on predicted noise levels in terms of compliance with the relevant noise criterion: generated 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.

Where impacts can demonstrate compliance, and are assigned a low risk, the case for out-of-hours-work, along with the risk assessment and Noise Impact Statement will be provided to the Environmental Representative for approval prior to out-of-hours-work being undertaken.

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 do 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.

Where impacts can not demonstrate compliance, and are assigned a high risk, the case for out-of-hours-work, along with the risk assessment, will be provided to Director General, for approval prior to out-of-hours-work being undertaken.

I.9 Monitoring

COA C3(d)(vii) requires that the CNMP include 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.

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.

I.10 Complaints Investigation

In the event that a complaint is made, CPP will immediately investigate the source of the noise and implement measures to avoid recurrence. Any complaint received will be documented and reported to the Environmental Representative.

I.11 Corona and Aeolian Noise

COA B29 states that the proponent 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.

I.11.1 Corona discharge.

The calculations show a conductor surface voltage gradient of 0.68 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.

I.11.2 Aeolian Vibration

The Sulphur AAAC/1120 conductor is to be installed at 21.5% CBL on the Broken Hill 22kV line. With reference to AS7000 Table Z1, we are using a Type C clamp category and the terrain on site is Type 2. Note that dampers are being installed on the Broken Hill line and hence Aeolian vibration is mitigated.

I.12 Responsibilities

The Project Manager would have overarching responsibility for ensuring compliance with the specific provisions of the CNMP 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 CNMP including reporting and restorative measures to address any non-compliance.

Appendix J – Aboriginal Heritage Plan

J.1 Aboriginal Heritage Management Plan

An Aboriginal Heritage Management Plan (AHMP) was commissioned by AGL Energy Limited (AGL) and has been prepared by OzArk Environmental and Heritage Management (October 2013). This AHMP was developed in consultation with registered Aboriginal stakeholders and the NSW Office of Environment and Heritage (OEH).

Actions required to protect indigenous heritage, as detailed below, are drawn from this approved AHMP.

J.2 Management of Identified Aboriginal Heritage

An artefact scatter (recorded as site BHS-11) comprising three silcrete artefacts in a loose association has been recorded along the transmission line route. Consistent with the recommendations of the AHMP, in December 2013 OzArk Environmental and Heritage Management documented actions completed in fulfilment of the conditions of the AHMP.

Site BHS-11 is located adjacent to the proposed 22kV transmission line route, and it has been possible to avoid impacts to this location by pole placement and controlling access to the site area.

This has been achieved by fencing the perimeter around the site.

CPP will avoid any disturbance to this fenced area.

J.3 Unanticipated Finds Protocol

Should any previously unidentified Aboriginal object or site be revealed during construction, then work in the area should cease and the local vicinity of the find should be cordoned off until confirmed by a Wilyakali Traditional Owner representative or an archaeologist.

Should suspected ancestral human 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 area off;
- Notify the NSW Police;
- Notify the OEH's Environment Line on 131555 as soon as practicable and provide available details of the remains and their location; and
- Do not re-commence work in the area unless authorised in writing by OEH.

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

J.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.

The Site Manager will deliver the induction training. This induction will:

- inform workers/contractors of the location of sites within the Project Area;
- include presentation of photographs and descriptors recorded by the consulting archaeologist (OzArk, 17 December 2013) so that all parties can examine what artefacts recorded in the Project Area actually look like;
- emphasise that it is illegal to knowingly (or otherwise) disturb Aboriginal heritage sites;

- emphasise the need to stop works and immediately report the presence of any material that may be an Aboriginal object or site – the key message will be to exercise pre-caution and stop work if uncertain; and
- confirm all sites legislative protection under Section 90 of the NSW National Parks and Wildlife Act 1974.

Members of the construction team, including sub-contractors, machine operators and truck drivers, etc will undergo site induction concerning Aboriginal cultural heritage issues, prior to working on the site.

Those workers attending such inductions will sign a register indicating their understanding of the cultural heritage importance and legislative requirements to protect Aboriginal sites.

J.5 Protocol for Continued Aboriginal Community Consultation

For the purpose of any further consultation, the Traditional Owners, identified as the Wilyakali people (as contacted through the Broken Hill LALC) be the primary point of contact.

In the event that any of the following incidents occur, CPP will immediately contact AGL:

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

AGL will then, consistent with the AHMP, contact OEH and the Traditional Owners, identified as the Wilyakali people (as contacted through the Broken Hill LALC) within 24 hours.

J.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.

J.7 Responsibilities

The Project and Site Manager will assume responsibility for the implementation of required safeguards and procedures detailed in the approved *AHMP.*

J.7 References

OzArk Environmental and Heritage Management Pty Ltd (October 2013) *Aboriginal Heritage Management Plan Broken Hill Solar Plant*

OzArk Environmental and Heritage Management Pty Ltd (December 2013) *Documentation of actions in relation to the Aboriginal Cultural Heritage Management Plan, for AGL Energy Limited (AGL), Broken Hill Solar Plant*

Appendix K – Conditions of Approval

Development Consent Condition	Brief Description	Relevance to CPP CEMP Yes No/Who	CPP CEMP Reference
Part A – Administrative Conditions			
A1	Obligation to minimise harm to the environment	Yes	Full CEMP
A2	Terms of Approval	Yes	Full CEMP
A3	Terms of Approval	Yes	Full CEMP
A4	Terms of Approval	Yes	Sect 26
A5	Limits of Approval	No/AGL	-
A6	Staging	No/AGL	-
A7	Structural Adequacy	No.	-
A8	Decommissioning	No/AGL	-
A9	Decommissioning	No/AGL	-
A11	Decommissioning	No/AGL	Sect 21
A12	Compliance	Yes	Sect 8.9
A13	Compliance	Yes	Sect 8
A14	Compliance	No/AGL	-
Part B –Environmental Performance – General Conditions			
B1	Ancillary Facilities	Yes	Sect 5.2
B2	Ancillary Facilities	Yes	Sect 25
B3	Bushfire Risk	Yes	Sect 17.3.7
B4	Bushfire Risk	Yes	Sect 17.3.3
B5	Dangerous Goods	Yes	Sect 19
B6	Dust Generation	Yes	Sect 16

B7	Water Quality Impact	Yes	Sect 14
B8	Water Quality Impact	Yes	Sect 14.4
B9	Construction Soil and Water management	Yes	Sect 14
B10	Waterways	Yes	Sect 14.4
B11	Waste Management	Yes	Sect 22
B12	Waste Management	Yes	Sect 22
B13	Waste Management	Yes	Sect 22
B14	Utilities and Services	Yes	Sect 21
B15	Flora and Fauna – Native Vegetation Impacts	Yes	App F
B16	Flora and Fauna – Native Vegetation Impacts	Yes	App F
B17	Flora and Fauna – Fauna Impacts	Yes	App F
B18	Flora and Fauna – Fauna Impacts	Yes	App F
B19	Flora and Fauna – Fauna Impacts	Yes	App F
B20	Visual Amenity – Landscaping Requirements	No/AGL	-
B21	Visual Amenity – Landscaping Requirements	No/AGL	-
B22	Visual Amenity – Landscaping Requirements	Yes	App H
B23	Visual Amenity – Rehabilitation and Revegetation	Yes	Sect 25
B24	Noise Construction – Construction Noise	Yes	App I
B25	Noise Construction – Construction Noise	Yes	App I
B26	Noise Construction – Construction Noise	Yes	App I
B27	Noise Construction – Construction Noise	Yes	App I
B28	Noise Operation – Operational Noise Criteria	No/AGL	-
B29	Noise Operation – Operational Noise Design Standards – Overhead Transmission Line	Yes	App I.11
B30	Traffic and Transport – Road Dilapidation	Yes	App C
B31	Traffic and Transport – Road Dilapidation	No/AGL	-

B32	Heritage – Heritage Impacts	Yes	App J
B33	Heritage – Heritage Impacts	Yes	App J
Part C –Environmental Management, Reporting and Auditing			
C1	Environmental Representative	No/AGL	Sect 8.8
C2	Environmental Management - Construction Environmental Management Plan (CEMP)	Yes	This CEMP
a	a description of all relevant activities to be undertaken on the site during construction including an indication of stages of construction, where relevant;	Yes	Sect 3
b	identification of the potential for cumulative impacts with other construction activities occurring in the vicinity and how such impacts would be managed;	Yes	Sect 4
c	details of any construction sites and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented;	Yes	Sect 5
d	statutory any other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and polices;	Yes	Sect 6
e	evidence of consultation with relevant public authorities required under this condition and how issues raised by the agencies have been addressed in the plan;	Yes	Sect 7
f	a description of the roles and responsibilities for all relevant employees involved in the construction of the project 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 approval;	Yes	Sect 8

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;	Yes	Sect 9
h	specific consideration of relevant measures identified in the documents referred to under conditions A2b) and A2c) of this approval;	Yes	Sect 11
i	the additional requirements of this approval;	Yes	CEMP
j	a complaints handling procedure during construction identified in conditions C12 and C14;	Yes	Sect 12
k	register of construction work hazards and the anticipated level of risk associated with each;	Yes	Sect 13
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;	Yes	Sect 14
m	measures to monitor and manage flood impacts in consultation with NOW;	Yes	Sect 15
n	measures to monitor and manage dust emissions including dust generated by traffic on unsealed public roads and unsealed internal access tracks;	Yes	Sect 16
o	emergency management measures including measures to control bushfires; and	Yes	Sect 17
P	information on water sources.	Yes	Sect 18

C3	Environmental Management - Construction Environmental Management Plan (CEMP)		
a)	Flora and Fauna Management Plan	Yes	App F
b)	Ground Cover Management Plan	No/First Solar	App G
c)	Landscape Plan	Yes	App H
d)	Construction Noise Management Plan	Yes	App I
e)	Traffic Management Plan	Yes	App E
f)	Aboriginal Heritage Plan	Yes	App J
C4	Operational Environmental Management Plan	No/AGL	-
C5	Biodiversity Offset Management Plan	No/AGL	App F
C6	Decommissioning Management Plan	No/AGL	-
C7	Decommissioning Road dilapidation	No/AGL	-
C8	Reporting - Incident Reporting	Yes	Sect 20
C9	Reporting – Regular Reporting	Yes	Sect 9 & Sect 26
C10	Community – Community Information, Consultation and Involvement	No/AGL	-
C11	Community - Provision of Electronic Information	No/AGL	-
C12	Community - Community Information Plan	No/AGL	-
C13	Community - Complaints Procedure	No/AGL	Sect 12
C14	Community - Complaints Procedure	No/AGL	Sect 12
C15	Community - Complaints Procedure	No/AGL	Sect 12
C16	Compliance - Compliance Tracking Program	No/AGL	Sect 26

Appendix L – Statement of Commitments

No.	Project Phase	Relevance	CEMP Reference
Environmental Management			
EM1	Construction	CPP has a performance and compliance auditing program.	Sect 9
EM2	Pre–Construction & Construction	AGL has finalised the Aboriginal Heritage Management Plan, and this forms the basis for the Aboriginal Heritage Plan prepared as part of this CEMP.	App J
EM3	Pre–Construction, Construction & Operation	Yes	Needing evidence of NOW, OEH and RMS sign-off. App C
Community Consultation			
CC1	Pre–Construction & Construction	Indirectly. CPP will provide reporting data to AGL who has ownership of the community consultation plan.	Sect 26
Visual Impacts			
V1	Construction	Yes	App F
V2	Construction	Yes	App F
V3	Construction	Yes	Sect 25
V4	Construction & Operation	No	App H
V5	Construction & Operation	No	Sect 3.3
V6	Pre–Construction, Construction & Operation	Yes	App H
V7	Construction & Operation	No	App H

No.	Project Phase	Relevance	CEMP Reference
Noise Impacts			
N1	Construction	Yes	App I
N2	Construction	Yes	App I
N3	Construction	Yes	App I
N4	Construction	Yes	App I
N5	Construction	Yes	App I
Flora and Fauna			
FF1	Pre–Construction & Construction	Yes	App F
FF2	Construction & Operation	Yes	App F
FF3	Construction	Yes	App F
FF4	Construction	No	App F
FF5	Construction	Yes	App F
FF6	Construction	Yes	App F
FF7	Construction & Operation	Yes	App F & Sect 25
FF8	Construction & Operation	Yes	App F& Sect 25
FF9	Construction & Operation	Yes	Sect 23
FF10	Pre-Construction	No/AGL	App F
Aboriginal Heritage			
IH1	Pre-Construction & Construction	Yes	App J
IH2	Pre-Construction & Construction	Yes	App J
IH3	Construction	Yes	App J
Traffic and Transport			
TT1	Pre-Construction	Yes	App E
TT2	Pre-Construction	Yes	App E
TT3	Pre-Construction & Construction	Yes	App E

No.	Project Phase	Relevance	CEMP Reference
TT4	Pre-Construction & Construction	Yes	App E
Hazards and Risks			
HR1	Pre-Construction	No	-
HR2	Construction & Operation	Yes	Sect 17.3.7
HR3	Construction & Operation	Yes	Sect 19
HR4	Construction	Yes	Sect 19
HR5	Construction	Yes	Sect 19
HR6	Construction	Yes	Sect 19
HR7	Pre-Construction & Construction	Yes	Sect 13
Water Management (Water Supply, Water Quality and Waterways)			
WM1	Construction	Yes	Sect 14
WM2	Construction	Yes	Sect 14
WM3	Construction	Yes	Sect 14
WM4	Construction	Yes	Sect 14
WM5	Construction	Yes	Sect 25
WM6	Construction	Yes	Sect 19
Land Use			
L1	Pre-Construction	Yes	App I.7
L2	Pre-Construction	No	-
L3	Pre-Construction	No	-
L4	Construction	Yes	App E
L5	Pre-Construction	No	-
Non-Indigenous Heritage			
H1	Pre-Construction & Construction	Yes	Sect 27

No.	Project Phase	Relevance	CEMP Reference
H2	Construction	Yes	Sect 27
Socio-Economic Issues			
S1	Pre-Construction & Construction	Yes	App I
Geology and Soils			
GS1	Pre-Construction & Construction	Yes	Sect 14
Air Quality and Climate			
AQ1	Construction	Yes	Sect 16
AQ2	Construction	No	Sect 4
AQ3	Construction	Yes	App F & Sect 25
AQ4	Construction	Yes	Sect 16
AQ5	Construction	Yes	Sect 16
AQ6	Construction	Yes	Sect 16
AQ7	Construction	Yes	Sect 16
Waste Management			
W1	Construction	Yes	Sect 22
W2	Construction	Yes	Sect 22
W3	Construction	Yes	Sect 22
W4	Construction	Yes	Sect 22
W5	Construction	Yes	Sect 22
W6	Construction	Yes	Sect 22
W7	Construction	Yes	Sect 22
W8	Construction	Yes	Sect 22
W9	Construction	Yes	Sect 22
W10	Construction	Yes	Sect 22

Appendix M – Project Induction

BROKEN HILL SOLAR PLANT CONNECTION ASSETS.

Version Control

Revision Number	Date	Author	Change Description
1	3/6/2014	Mark Derry	Initial Issue

PROJECT SPECIFIC INDUCTION

It is a regulatory requirement that all employees are inducted prior to commencing work on any project.

The purpose of this induction is to ensure employees commencing work on this project are familiar with;

* Work Health & Safety Management;
* Environmental Management;
* Quality Management.
* Scope of Works for the project;
* Tasks being conducted on the project;
* Emergency Response;
* Injury Management.

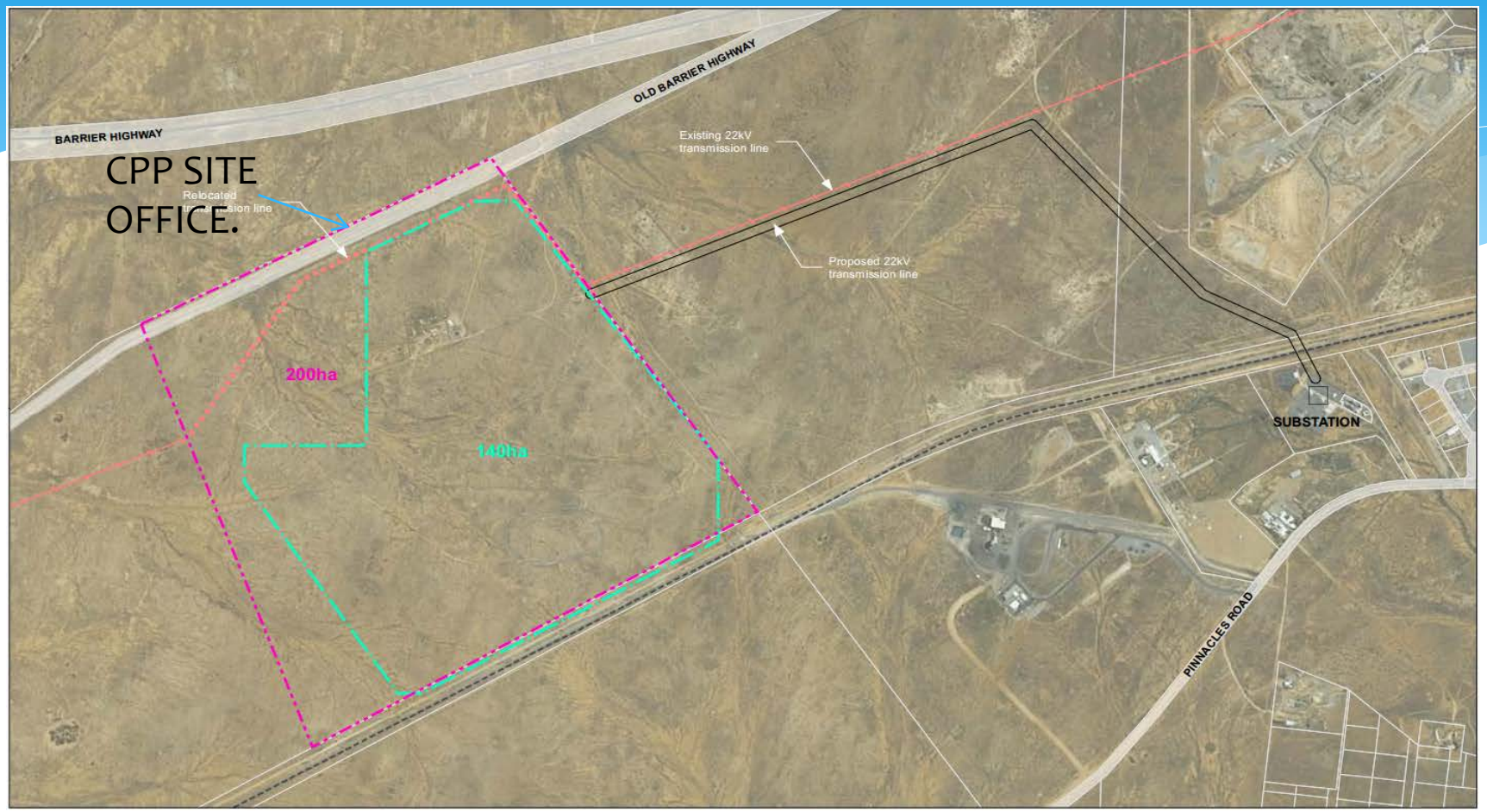
PROJECT SPECIFIC DETAILS

Project Name	BROKEN HILL SOLAR PLANT CONNECTION ASSETS		
Project Number	10506		
Principal Contractor	AGL		
Project Manager:	Grant Johnstone	Mobile:0488990527	
Site Manager:	Mark Derry	Mobile: 0428303367	
WHSE & QA Manager:	Seamus Hickey	Mobile: 0400882776	

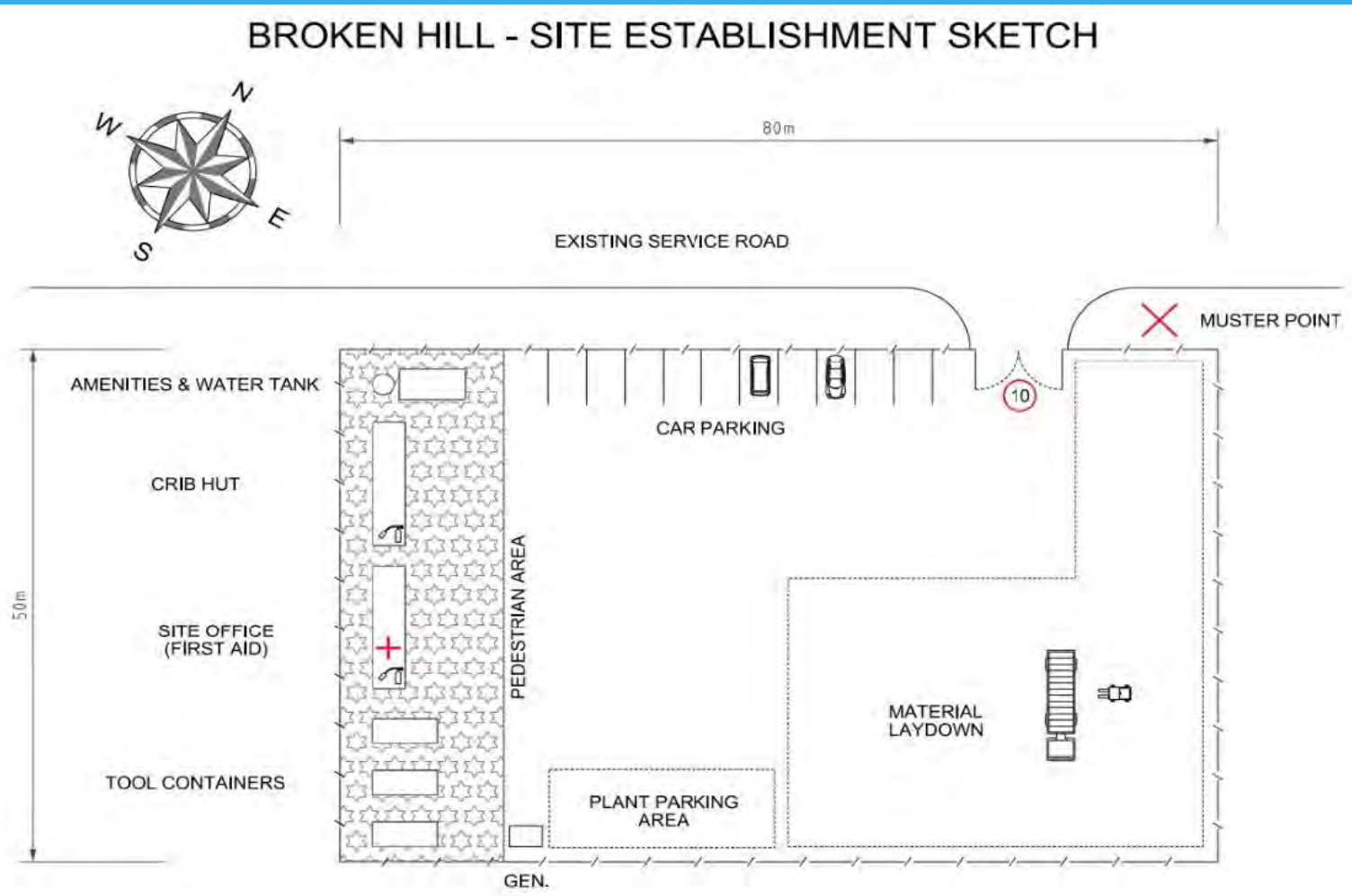
SCOPE OF WORKS

* The objective of the Broken Hill Power Station Connection Assets project is to provide to AGL, a suitable energy transfer connection between the new Broken Hill Solar Plant and the existing high voltage distribution network. This will be achieved via a new double circuit 22kV transmission line constructed between the new Solar Plant and the existing Broken Hill substation.
* In addition to this, to allow for the construction of a 53 MW photovoltaic solar plant, CPP shall divert an existing 22kV distribution line that currently runs through the solar plant site, around the site by means of underground cable.
* Two additional 22kV radial extensions shall be constructed and connected to this existing line to provide two new LV supplies to two, relocated domestic dwellings to the west of the solar plant site.
* A private domestic water supply pipe shall be re-routed around the site and directed to the two domestic dwellings.

PROJECT LAYOUT



COMPOUND LAYOUT



WHSE MANAGEMENT PLAN

What is a WHSE Management Plan?

* A Work Health Safety and Environmental Management Plan is a system or set of documents that helps manage the Work Health Safety and Environment at your site through the use of procedures, work method statements, safety data sheets, emergency response procedures, safety rules, forms etc.;
* It includes the activities that assist you to manage Work Health Safety and Environmental risks and ensures that hazards at the project are dealt with in a systematic way, rather than in response to an accident or incident;
* The Work Health Safety and Environmental Management Plan helps to protect your project, employees, contractors, visitors and customers and your personal liability as an owner, employer or manager;
* It enables you to demonstrate your “due diligence” in maintaining “duty of care” requirements of WHSE legislation; and
* The Work Health Safety and Environmental Management Plan can, when implemented, reduce the impact and costs associated with work-related injury and illness, environmental impact etc.

SAFE WORK METHOD STATEMENTS

What are Safe Work Method Statements?

Safe Work Method Statements (SWMS) are developed by the employer for their employees or by a sub-contractor for work that they are performing. It details how specific risks in the workplace will be managed.

Safe Work Method Statements are a regulatory requirement.

The purpose of Safe Work Method Statements are to;

* Identify the Hazards and Risks associated with the Project;
* Determine the impact and consequence of the identified Hazards & Risks;
* Use the Hierarchy of Controls when determining the controls;
* Identify controls to eliminate and/or reduce the impact of the identified Hazards & Risk;
* Identify hazardous and dangerous substance being used on the Project;
* Identify plant, equipment & training requirements for the Project;
* Identify regulatory and standard requirements for the Project;
* Its contents must be relayed to all workers involved with the task, and
* signed as understood by the workers.

DAILY JSEA/SWMS REVIEW LOG

Daily JSEA/SWMS Review Logs will be prepared;

* By the Site Manager;
* Prior to commencing work;
* In consultation with all site personnel;
* Using the information provided in JSEA/SWMS.

Should site conditions change throughout the day these changes will be reflected in the Daily JSEA/SWMS Review Log:

* All visitors attending site will receive training in the contents of the Daily JSEA/SWMS Review Log;
* At the end of each day the Site Manager will account for all personnel who have attended the site on that day.
* Note – All CCP & subcontract personnel will meet at the commencement of each shift and conduct their Daily JSEA/SWMS Review Logs in conjunction with each other.

TRAINING REQUIREMENTS

The minimum training requirements to commence on this Project are;

* Construction Industry Card;
* CPP Project Induction Training;
* Safe Work Method Statement Training.

Other Project Specific Tasks include (but not limited to);

* First Aid;
* Asbestos Removal;
* Demolition License;
* Operators Competency; (Excavator/Crane)
* Vehicle Licenses; (Car, Ute, Rigid Truck, Heavy Goods Vehicle, etc)
* Use of Spill Kits

MINIMUM APPROACH DISTANCES TO EXPOSED CONDUCTORS

For the purposes of this regulation, the approach limits for a person, including an article of clothing worn by a person, or a conductive object held or carried by the person, are set out below—

Voltage of conductor or equipment	Approach limit A	Approach limit B	Approach limit C (i)	Approach limit C (ii)
	(Distance in metres)			
Not more than 1000V	0	0.3	3.0	1.0
More than 1000V but not more than 11kV	0.3	0.6	3.0	2.0
More than 11kV but not more than 33kV	0.45	0.9	3.0	3.0
66kV	0.7	1.4	4.0	4.0
132kV	1.2	2.4	5.0	5.0
275kV	2.0	4.0	6.0	6.0

where—

(a) approach limit A applies to a person suitably qualified and trained to work in proximity to exposed high and low voltage conductors or exposed parts of high and low voltage electrical equipment;

(b) approach limit B applies to a person who has been instructed in the identification of high and low voltage overhead conductors and the safety aspects of work near live powerlines;

(c) approach limit C(i) applies to a person using power operated tools;

(d) approach limit C(ii) applies to a person using manually operated tools.

The minimum approach distances to exposed conductors is listed in this table.

However, a spotter/observer will be used for all plant movements within a substation/switchyard.

An example of plant include excavators & elevated work platforms.

An earth strap will be attached to all mobile plant. The earth strap in turn will be attached to the earth grid of the switchyard.

MINIMUM APPROACH DISTANCES TO EXPOSED CONDUCTORS

	Cranes AS 2550.1 Crane Code. (Approved Code of Practice) Earthmoving machinery and Elevating Work Platforms		Machinery Electricity Act/Regulations Schedule 6 – Distance to operation of machinery, vehicle or vessel with elevating component or shear legs	Safe Approach Limits Electricity Regulations 23A(3) Safe Approach Limits		Buildings and Structures, including Scaffolds Electricity Regulations Schedule 2, Table 1	
Voltage (in volts)	No Spotter	Spotter required	Risk assessment and spotter required	Equipment and manually operated tools	Power operated tools	Horizontal direction	Vertical direction
240	6.4m	3.0m	1.0m	1.0m	3.0m	1.5m	3.7m
415	6.4m	3.0m	1.0m	1.0m	3.0m	1.5m	3.7m
7,600	6.4m	3.0m	1.5m	2.0m	3.0m	3.1m	5.5m
11,000	6.4m	3.0m	1.5m	2.0m	3.0m	3.1m	5.5m
19,000	6.4m	3.0m	1.5m	3.0m	3.0m	3.1m	5.5m
33,000	6.4m	3.0m	1.5m	3.0m	3.0m	3.1m	5.5m
66,000	6.4m	3.0m	3.0m	4.0m	4.0m	5.5m	6.7m
132,000 pole	6.4m	3.0m	3.0m	5.0m	5.0m	15m	NA
132,000 tower	10.0m	8.0m	3.0m	5.0m	5.0m	20m	NA
275,000	10.0m	8.0m	4.0m	6.0m	6.0m	25m	NA

MOBILE PLANT

Mobile plant consists of cranes, excavators, bobcats, elevated work platforms etc.

All mobile plant will:

* Be operated by personnel with the correct competency class;
* Be inspected by the operator prior to use and recorded in an inspection form;
* Contain a minimum of a 1Kg Fire Extinguisher with current inspection tag;
* Plant required for lifting will be marked with a visible Safe Work Load (SWL);
* Plant required for lifting will be fitted with a rated load chart;
* Excavators used for lifting loads over 1 Tonne will be fitted with Controlled Release Valves;
* If working within the switchyard all plant will have an earth strap installed. The earth strap in turn will be attached to the earth grid of the switchyard;
* All plant movements will be monitored by a spotter/observer.

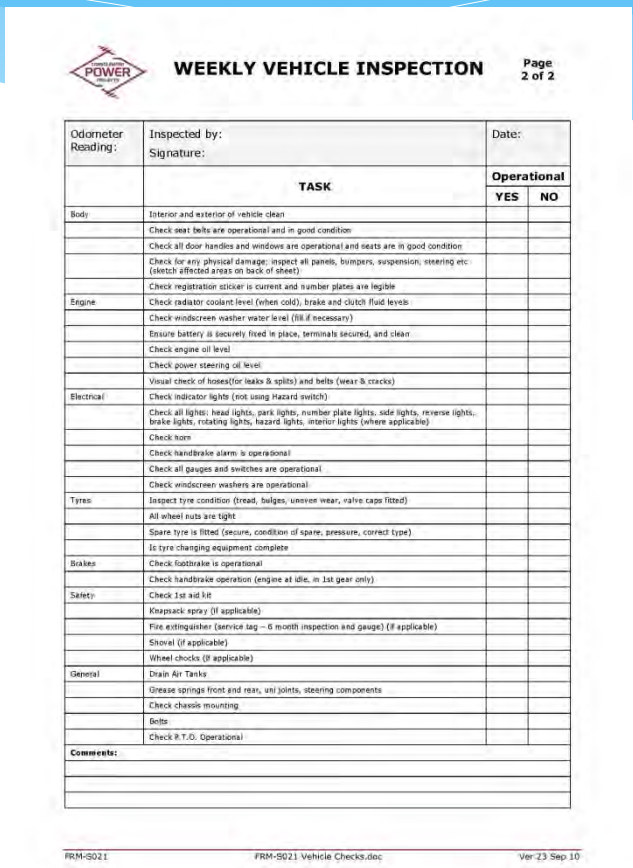
SPECIFIC SITE ISSUES

* Slippery Ground conditions after rain.
* Spreading of weeds. (vehicle to be clean on entry and after leaving site)
* Excavation/ Trenches.
* High voltage.
* Aboriginal Cultural Heritage.
* Buffer zone around nesting area.
* Working at Height.
* Mobile plant and equipment.

TRUCKS & VEHICLES

As a guide trucks & vehicles must be:

* Operated by personnel with the correct class of licence;
* Formally inspected on a weekly basis by the operator;
* Contain a Fire Extinguisher with current inspection tag;
* All faults must be recorded in the weekly inspection check list and reported to the Plant and/or Fleet Manager.
* Note – The Water Cart is not to be used in the switch yard for fire fighting.



WEEKLY VEHICLE INSPECTION Page 2 of 2

Odometer Reading:	Inspected by: Signature:	Date:	
	TASK	Operational YES	NO
Body	Interior and exterior of vehicle clean		
	Check seat belts are operational and in good condition		
	Check all door handles and windows are operational and seats are in good condition		
	Check for any physical damage; inspect all panels, bumpers, suspension, steering etc (sketch affected areas on back of sheet)		
	Check registration sticker is current and number plates are legible		
Engine	Check radiator coolant level (when cold), brake and clutch fluid levels		
	Check windscreen washer water level (fill if necessary)		
	Ensure battery is securely fixed in place, terminals secured, and clean		
	Check engine oil level		
	Check power steering oil level		
	Visual check of hoses(for leaks & splits) and belts (wear & cracks)		
Electrical	Check indicator lights (not using Hazard switch)		
	Check all lights: head lights, park lights, number plate lights, side lights, reverse lights, brake lights, rotating lights, hazard lights, interior lights (where applicable)		
	Check horn		
	Check handbrake alarm is operational		
	Check all gauges and switches are operational		
	Check windscreen washers are operational		
Tyres	Inspect tyre condition (tread, bulges, uneven wear, valve caps fitted)		
	All wheel nuts are tight		
	Spare tyre is fitted (secure, condition of spare, pressure, correct type)		
	Is tyre changing equipment complete		
Brakes	Check footbrake is operational		
	Check handbrake operation (engine at idle, in 1st gear only)		
Safety	Check 1st aid kit		
	Knapsack spray (if applicable)		
	Fire extinguisher (service tag – 6 month inspection and gauge) (if applicable)		
	Shovel (if applicable)		
	Wheel chocks (if applicable)		
General	Drain Air Tanks		
	Grease springs front and rear, uni joints, steering components		
	Check chassis mounting		
	Bolts		
	Check P.T.O. Operational		
Comments:			

FRM-S021 FRM-S021 Vehicle Checks.doc Ver 23 Sep 10

PERSONAL PROTECTIVE EQUIPMENT

Minimum PPE Requirements are:

- Hard Hat;
- Long Pants and Long Sleeves;
- Steel Toe Capped Boots;
- High Visibility Clothing or Vests;

Other PPE as required by task include;

- Gloves;
- Face Shields;
- Sunscreen;
- Insect Repellent;
- Hearing Protection.

HANDTOOLS ELECTRICAL SAFETY

Always inspect Electrical Equipment prior to use:
Components to check include

* Plugs / Outlets and Cables;
* Earth Leakage, RCD/ELCB;
* Are inspection tags installed and current (monthly)?
* Keep liquids/water away from electrical equipment.
* Suspend or protect electrical equipment when in trafficable (pedestrian and vehicular) areas.

HOT WORKS

* Hot Work is work which could generate fire, naked flame, heat or spark.
* Any person who needs to undertake any hot work, including grinding of any description, shall contact the Site Manager to obtain a Hot Work permit.

* A hot work permit shall only be issued after the permit user has personally inspected the area of work, and has defined the conditions and area in which the work is to be carried out. In situations where there is an elevated risk (eg. Combustible materials that cannot be removed) a watcher shall be present for the entire duration of the work and, if necessary, a post-work watch period. The requirements of this responsible person are to be spelled out through suitable training and job briefing.

HOT WORKS – CONTROLS

There are a number of specific hot work protective measures that should be established before a Hot Work Permit can be issued. They include :

* the use of screens, barriers and warning signs;
* utilisation of a nominated fire watcher;
* sealing of open drains or conduits nearby;
* a suitable and fully charged fire extinguisher positioned near the work area;
* if available, a fire hose to be laid out near the work area;
* work area free of combustibles (to a nominated distance);
* the requirement of fire watch after the work has been completed; and
* all temporary portable power driven machinery must be located a safe distance from sources of flammable vapours (upwind).

FIRE PREVENTION

* Fire Extinguishers will be present in all plant, containers, emergency assembly points & crib sheds;
* Fire Extinguishers will possess a tag indicating that they have been formally inspected on a 6 monthly basis;
* Cigarette butts must be extinguished correctly & disposed of appropriately.

When using a Fire Extinguisher

1. Pull the pin;
2. Aim the nozzle at the base of the fire;
3. Squeeze the handle; and
4. Sweep the nozzle back and forth.

And remember you have less than 4 minutes to bring any fire under control so speed is vital but please remain calm at all times

EMERGENCY RESPONSE PLANS

* Emergency Response Plans will be prepared prior to a project commencing;
* Emergency Response Trials will be conducted within 2 weeks of a Project Commencing;
* Emergency Response Trials will be conducted 6 monthly thereafter.

EMERGENCY EVACUATION PLAN FROM SITE

STEP 1	STEP 2	STEP 3
1. Raise the alarm by shouting 'Evacuate the Site'. 2. The person who observes the emergency will notify the Consolidated Power Projects Site Manager immediately. The Site Manager will in turn implement this emergency evacuation process. 3. If the emergency services are required the person who observes the emergency will contact the emergency services immediately. 4. If you hear shouts of 'Evacuate the Site', leave the site at once using the nearest available exit. 5. Do not stop for anything (e.g. tools, clothing etc). 6. Assemble at the 'Emergency Assembly Point' at the main gate for a headcount.	1. If the emergency services are required, the Consolidated Power Projects Site Manager or the person who observed the situation will ensure that a representative is sent to the nearest site entrance, crossroads etc to guide the emergency services to the exact location of the incident. 2. Do not attempt to rescue or administer first aid until the work area is deemed safe by the Consolidated Power Projects Site Manager. 3. Do not move the injured person unless they are in immediate danger. 4. Determine the level of injury. If unsure wait for the emergency services to determine the level of injury. 5. If there is no risk of spinal injury to the injured person but they have mobility problems then a stretcher (supplied by the emergency services) will be used to remove the injured person from the work area.	1. Never attempt to re-enter the site until the all clear has been given by the Consolidated Power Projects Site Manager. 2. Do not leave the 'Emergency Assembly Point' until a headcount is complete and you obtain clearance to do so from the Consolidated Power Projects Site Manager. Remember, it could be you trapped inside. 3. Be aware at all times of the exit and escape routes from your workplace. Remember they could change from day to day. 4. Follow all instructions given in this Emergency Evacuation Process.

NOTE:

- First aid facilities are located at the Site Office adjacent to the Emergency Assembly Point.
- A minimum of one Senior First Aid Trained Person will be on site at all times.
- To contact a Senior First Aid Trained Person, check the site contact list posted in the Site Office, Smoko Sheds & Emergency Assembly Point.
- All injury treatments will be recorded in the Injury Register at the time that they occur.

EMERGENCY EVACUATION PLAN – TRAVELLING TO & FROM SITE

STEP 1	STEP 2	STEP 3
1. Driving to or from site is only to be conducted during day light hours; 2. If an employee is involved in an incident on their way to work and does not require immediate attention they are to stay with their vehicle until assistance arrives. 3. If passing vehicles are in a position to take the employee to site or the nearest town, please leave a note with the vehicle advising (CPP personnel who may be searching for you) where you are. 4. If the employee requires urgent medical attention they are to use their mobile phone to call 000 if mobile coverage is available and 112 if mobile coverage is not available.	1. If an employee fails to arrive at the worksite at their designated time, the Site Manager will immediately try and phone the employee. 2. If the Site Manager fails to contact the employee they will then try to contact where the employee is staying; 3. If the Site Manager fails to contact the employee by mobile phone or at their designated accommodation the Site Manager or his delegate will drive towards the employees accommodation in an attempt to locate employee; 4. If the Site Manager or his delegate locates the employee and they are unconscious and require urgent medical attention they are to use their mobile phone to call 000 if mobile coverage is available and 112 if mobile coverage is not available. 5. The Site Manager or his delegate will administer first aid and follow all instructions from the medical services.	1. At the completion of each shift and after travelling to their designated accommodation, employees are to phone or text their "buddy" to advise that they have arrived safely at their accommodation; 2. If an employee fails to return to their accommodation their "buddy" will contact the Site Manager immediately; 3. The Site Manager will follow the steps outlined in Step 2. Note – ▪ A First Kit is to be available with each vehicle; and ▪ Each first aid kit should contain Consolidated Power Projects Emergency Contact Details.

EMERGENCY EVACUATION PLAN DURING A BUSH FIRE

STEP 1	STEP 2	STEP 3
As a fire alert is given: 1. Ensure all personnel are dressed in appropriate clothing (full cover from wrist to ankles and 100% cotton clothing); 2. Remove flammable items from exposed work areas; 3. Ensure personnel have access to drinking water; 4. Close all doors and windows of any site huts or control rooms; 5. Wet down work area, as and if appropriate; 6. Remain vigilant for spot fires in the near vicinity.	**Well before the front arrives:** 1. Gather all personnel together and account for all in a written log (Daily JSEA/SWMS Review Log); 2. The Site Manager is responsible for giving the order to evacuate the site; 3. The Site Manager is also responsible for nominating the safe assembly point prior to evacuation. If possible evacuate to the Neighbourhood Safer Place/Bushfire Safer Place; 4. Evacuate the site in a direction at 90 degrees from the prevailing wind; 5. While evacuating, all personnel are to travel in convoy; 6. Take sufficient drinking water, first aid and fire fighting equipment while evacuating; 7. All personnel to meet at the agreed Safe Assembly Point.	**After the front has passed:** 1. Never attempt to re-enter the site until the all clear has been given by the Site Manager. 2. Do not leave the agreed Safe Assembly Point until a headcount is complete and you obtain clearance to do so from the Site Manager. Remember, it could be you trapped inside. 3. Follow all instructions given in this Emergency Evacuation Process.

NOTE:

- First aid facilities are located at the Site Office adjacent to the Emergency Assembly Point.
- A minimum of one Senior First Aid Trained Person will be on site at all times.
- To contact a Senior First Aid Trained Person, check the site contact list posted in the Site Office, Smoko Sheds & Emergency Assembly Point.
- All injury treatments will be recorded in the Injury Register at the time that they occur.

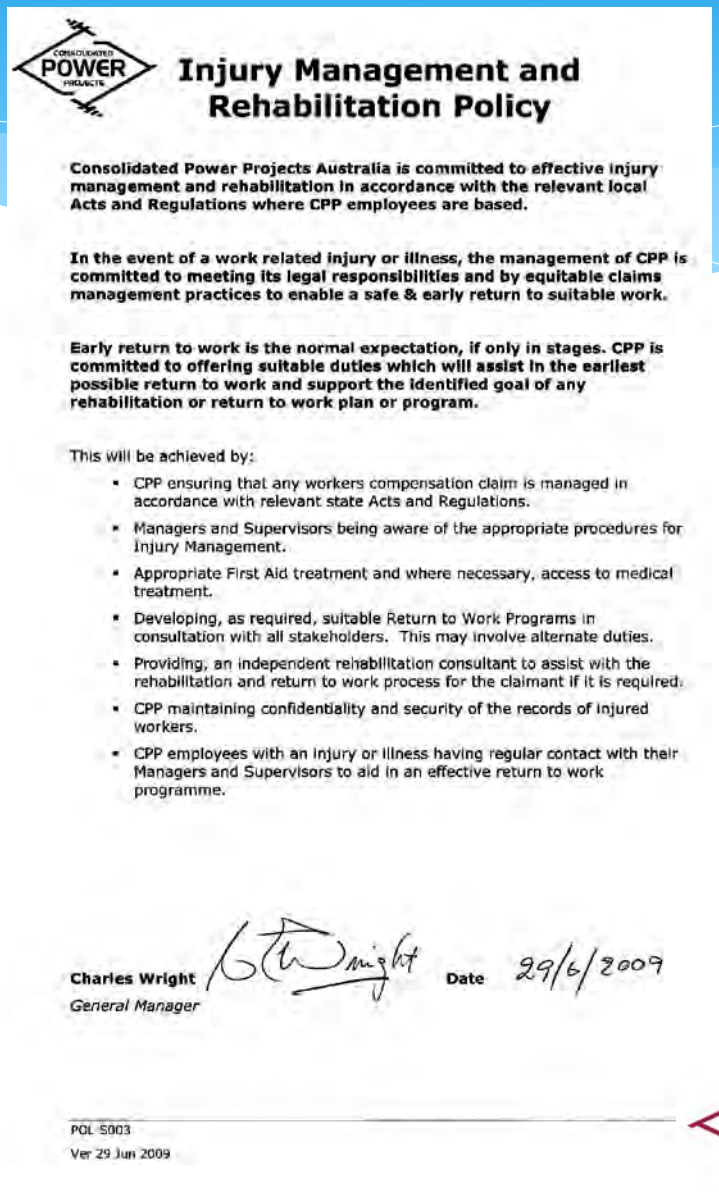
EMERGENCY CONTACT DETAILS

* Broken Hill Hospital
* 176 Thomas Street
* 80801333
* 000

* Site First Aid Officer: Mark Derry 0428303367

INJURY MANAGEMENT

* Should personnel receive an injury at the workplace they have the right to choose their own doctor – however CPP also have the right to request that the injured employee attend a CPP nominated doctor (if required);
* Should an injury occur at the workplace the WHSE & QA Manager will assist the injured person to the nearest medical centre ;
* The WHSE & QA Manager will advise the doctor of suitable duties should the injury result in a Lost Time or restricted duties;
* All incidents must be reported to your Site Manager immediately.



Injury Management and Rehabilitation Policy

Consolidated Power Projects Australia is committed to effective injury management and rehabilitation in accordance with the relevant local Acts and Regulations where CPP employees are based.

In the event of a work related injury or illness, the management of CPP is committed to meeting its legal responsibilities and by equitable claims management practices to enable a safe & early return to suitable work.

Early return to work is the normal expectation, if only in stages. CPP is committed to offering suitable duties which will assist in the earliest possible return to work and support the identified goal of any rehabilitation or return to work plan or program.

This will be achieved by:

- CPP ensuring that any workers compensation claim is managed in accordance with relevant state Acts and Regulations.
- Managers and Supervisors being aware of the appropriate procedures for Injury Management.
- Appropriate First Aid treatment and where necessary, access to medical treatment.
- Developing, as required, suitable Return to Work Programs in consultation with all stakeholders. This may involve alternate duties.
- Providing, an independent rehabilitation consultant to assist with the rehabilitation and return to work process for the claimant if it is required.
- CPP maintaining confidentiality and security of the records of injured workers.
- CPP employees with an injury or illness having regular contact with their Managers and Supervisors to aid in an effective return to work programme.

Charles Wright *General Manager* **Date** 29/6/2009

POL 5003
Ver 29 Jun 2009

FIRST AID

* Should you require first aid treatment or medical treatment notify the Site Manager or first aider immediately;
* This project will have a minimum of 1 senior first aid trained people;
* First Aid Kits will be located at the site office and within vehicles.
* All incidents regardless of how significant or insignificant they may appear are to be reported to the Site Manager Immediately;
* The Site Manager in turn will notify the WHSE & QA Manager.
* More serious cases will be treated at medical centres and/or hospitals;
* Should you require treatment at a medical centre and/or hospital the WHSE & QA Manager (or senior member of staff) will accompany you.

MANUAL HANDLING

EIGHT PRINCIPLES OF SAFE LIFTING.

1. Assess the size and weight of the load;
2. Bend your knees;
3. Keep a broad stable base;
4. Keep your back straight but not necessarily vertical;
5. Keep a firm grip with your hands;
6. Keep your arms close to your body;
7. Keep the weight of the load close to the centre of the gravity;
8. Point and pivot your feet in the direction of movement;

AND REMEMBER

"LIFT WITH YOUR LEGS"

SAFETY DATA SHEETS

What is a Safety Data Sheet (SDS)?

An SDS is a document containing important information about all chemicals (which may be hazardous substance and/or dangerous goods) and must state:

* a hazardous substance's product name
* the chemical and generic name of certain ingredients
* the chemical and physical properties of the hazardous substance
* health hazard information
* precautions for safe use and handling
* the manufacturer's or importer's name, Australian address and telephone number.

The SDS provides employers with the necessary information to safely manage the risk from hazardous and dangerous substance exposure.

HAZARDOUS SUBSTANCES & DANGEROUS GOODS

* Safety Data Sheets (SDS) will be obtained for all substances (including sub-contractors) being used on this Project;
* The SDS will be assessed to determine if the substance is Hazardous and/or Dangerous;
* If the substance is identified as Hazardous and/or Dangerous a risk assessment will be conducted to determine the controls required while handling the substance;
* The controls identified during the risk assessment will be incorporated into the Safe Work Method Statement;
* Fuels, chemicals & lubricants will be stored in impervious container/bund. This being 10% bigger than the capacity of the stored fluid.
* Have a spill kit in a prominent location adjacent to the stored substance;
* All spill must be contained immediately and reported to the Site Manager;
* An up to date SDS Register of substances will be kept in the office;
* SDS's and Risk Assessments for Hazardous and/or Dangerous Substances will also be kept in the office.

COMMON SPILL KIT CONTENTS

* PPE – gloves, eye protection
* Booms – sausages – these help dam up spills and leaks.
* Pads – absorb fluids.
* Loose absorbent – absorb fluids.
* Plastic bags – to contain contaminated material for disposal.
* Brooms & dust pan to help in clean up.

WHAT KIT AND EQUIPMENT TO USE

- **Spill Response Selection Guide:**
  - General purpose kit for hydrocarbons. (oils & fuels)
  - Hazchem kit for hazardous chemicals
  - General purpose kit for water based chemicals (including paint and pesticides)
- **Kit size**
  - 1000L kit or 4x240 L kits for 1000L Bulk Container
  - 240L kit for 205 L drum
  - 120L kit for 20 to 60 L drums

- **Surfaces**
  - Dirt – Loose absorbents
  - Bitumen – Loose absorbents
  - Concrete – Pads or Loose absorbents
  - Water – Hydrocarbon only absorbents (if spill is a hydrocarbon)
- **NOTE: Pads and booms can be used to dam a spill.**

USE OF SPILL RESPONSE KITS

* Know where spill response kits are located and the Emergency Response Plan.
* Action
  * Put on required PPE
  * Contain the spill (use of booms and pads to dam it up)
  * Absorb the spill (convert from a fluid to a solid by absorption – loose absorbent material or pads)
  * Dispose of the used materials correctly – this may include contaminated soil.
  * Report the incident
  * Restock the spill kit

WORKING HOURS

Working Hours will be:

* Monday to Sunday

  7am to 5pm
* 11 days on 3 days off.

There may be the need for work to be undertaken outside of these hours.

Approval to work outside of these hours will require the approved of the Project Manager and/or Site Manager.

FATIGUE MANAGEMENT

With regards to fatigue, an overly tired worker can be as much of a hazard to others as an intoxicated worker!

It is the responsibility of the Site Manager to manage and monitor working hours and worker alertness.

It is also the individuals responsibility to be well rested prior to work, and to let Site Managers know if they feel fatigued.

CONSULTATION & COMMUNICATION

Consultation & Communication is an integral part of CPP'S Management philosophy. Methods employed by CPP to consult & communicate are (but not limited to)

1. Project Specific Inductions,
2. Training in Project Specific JSEA/Safe Work Method Statements,
3. Consultation during the preparation of Daily Safe Work Method Statements,
4. Frequent Tool Box Talks,
5. Personnel given the opportunity to form a Safety Committee or elect a Safety Representative,
6. Issuing frequent Safety Bulletins or similar.

TOOLBOX TALKS

* Tool Box Talks are safety talks aimed at sharing information & lessons learnt from this Project and other Projects both internal and external.
* Tool Box Talks are intended to educate workers about creating and maintaining safer work conditions.
* 1 Tool Box Talks will be conducted at least every week;
* Site Managers & QA WHSE Manager may increase the frequency. This may be as a result of incidents, poor work practices etc.

SITE RULES

Safety Rules are to be displayed on noticeboards and other suitable locations at the work site and must be provided to all personnel who may work on the site, or visit the site.

Induction and safety training
Before starting work on site all personnel must:

- Attend General Induction training in Workplace Health and Safety aspects of general construction.
- Attend site-specific induction training for the particular work activity being undertaken.
- Attend training in Safe Work Method Statement training prior to conducting an activity.

All personnel on the work site must be involved in regular discussion of work site OH&S matters (Daily Pre-Starts and Tool Box Talks as a minimum).

All visitors when on the work site must be accompanied by a person who has received the above training.

Personal protective equipment
All personnel and visitors must wear appropriate personal protective equipment (PPE) when on the work site. Personal protective equipment is to be supplied by the Sub-contractor to its employees and sub-contractors.

PPE required on the site is:

- Safety Helmet shall be worn at all times by all persons working on site.
- Steel toe capped safety footwear to be worn at all times on site.
- High visibility vest or fluro shirts, coats etc. to be worn at all times on site.
- Safety glasses or eye protection
- Hearing protection (where required).
- Sun protection – UV cream, protective clothing.

Site access and security
Gates to remain closed and locked at all times. ***Insert details***

Illness/injury and emergency procedures
First aid facilities will be located at the site office. First aid trained personnel will be listed and posted throughout the site

All incidents must be reported to the Site Manager immediately. All incidents will be investigated and recorded in the Incident Register. ***insert details***

Emergency procedures must be prepared for all activities and trialled within 2 weeks of commencing the activity and 6 monthly thereafter.

Elevated work
Users of fall arrest equipment and all people undertaking tasks associated with harness based work at heights shall be trained and assessed in height safety theory.

Elevated Work Platforms (EWP's)
EWP's will be operated by trained and competent personnel wearing fall arrest equipment attached to an approved anchor point.

Electrical work
Work will not commence in a permit area until

- The appropriate permit is issued by an authorised person
- The permit area is clearly defined with one entry and exit point
- Only trained and authorised persons work within the permit area.

SITE RULES

	Electrical work Two qualified personal will be available while working on live panels. Low voltage rescue kits will be available and personnel will be trained on their usage.
	Electrical leads, equipment and installations will comply with the following requirements. • No lead will be longer than 32 metres • All leads to be kept off the ground, except within 4 metres of work area • All plugs on leads and power tools shall be either clear re-wireable or moulded type • All leads and power tools will be formally inspected and tagged on a 3 monthly basis.
	**Substations and Switchyards** – Do not use metal measuring tapes, ladders etc.
	**Substations and Switchyards** – Erect barriers to maintain minimum approach distances to live electrical conductors. Do not carry objects above shoulder height. A minimum of 2 people will carry long objects below shoulder height.
	**Trailing Earth** - All plant & equipment operating within minimum approach distances will be electrically bonded to the substation earth using a trailing earth lead and in turn will make the required connection to the sub-station earth mat
	**Plant and Equipment** - All plant & equipment will be operated by trained and competent personnel All plant and equipment movements will be monitored by a spotter/observer.
	**Hazardous materials and dangerous goods** A register of substances must be kept and maintained for all substances brought onto the work site. The register will identify hazardous and dangerous substance. A risk assessment will be conducted on these substances and hazards and controls will be identified in Safe Work Method Statements. All hazardous substances and dangerous goods must be used, handled and stored in accordance with the Material Safety Data Sheet, the risk assessment and Safe Work Method Statements.
	**Ladders** Aluminium or fibreglass ladders are to be used. Ladders will be used for access and egress only. If work is to be conducted from ladders, platform ladders are to be utilised.
	**Drug and Alcohol Policy** The consumption or use of alcohol, drugs or any other substances that may affect a person's ability to work safely or efficiently is not permitted on the site. People taking prescription or over-the-counter medications that may impair performance are to advise the Site Manager. Such advice will be treated confidentially.
	**Fire Prevention** must be employed by all persons. Hot Works Permit is required for any hot work. An appropriate fire extinguisher must be on hand for each item of hot work performed on site.
	**Work Areas and the Site** must be kept clean tidy and safe with all rubbish and other hazards cleaned and removed promptly.
	**Smoking** is not permitted in offices, lunch rooms or company vehicles. Smoking is only permitted in designated smoking areas.
	**Unsafe acts or conditions** are required to be reported without delay to CPP Management.

Site Rules.

* There is a one warning policy for not following the site rules.
* Take you time to understand them ,they are there for your safety.
* If the site safety rules are not followed you will be removed from site and reported to you line manager.

ENVIRONMENTAL SPECIFICS

What is a Construction Environmental Management Plan?

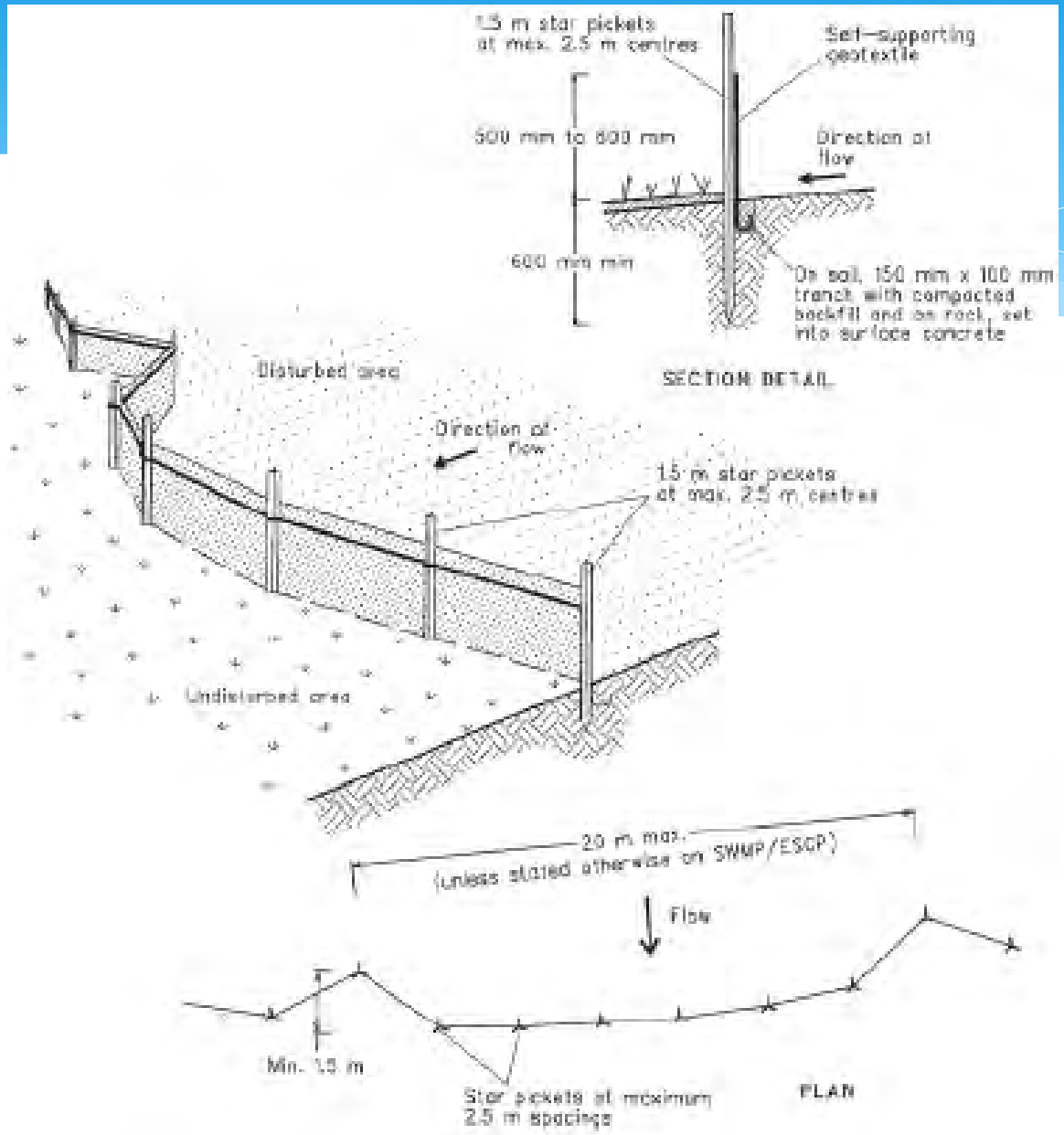
* A Construction Environmental Management Plan is a system or set of documents that helps you manage the Environmental Aspects of the Project through the use of procedures, Environmental Control Plans, Environmental work method statements, forms etc.;

* It includes the activities that assist you to manage Environmental Risks and ensures that hazards at the site are dealt with in a systematic way, rather than in response to an accident or incident.

EROSION & SEDIMENT CONTROL PLAN – SITE CONTROLS

* Site Access and Egress will be via established roads and tracks.
* Excavated Trench material will be stocked piled in a manner that will enable the silt to flow into the trench.
* Trenching along Water Course's will be planned during periods when rain is not forecasted.
* Trenches will be reinstated so they do not impede the water course.
* Silt fencing is to be installed around stock piles.

SEDIMENT FENCING – STANDARD DRAWINGS

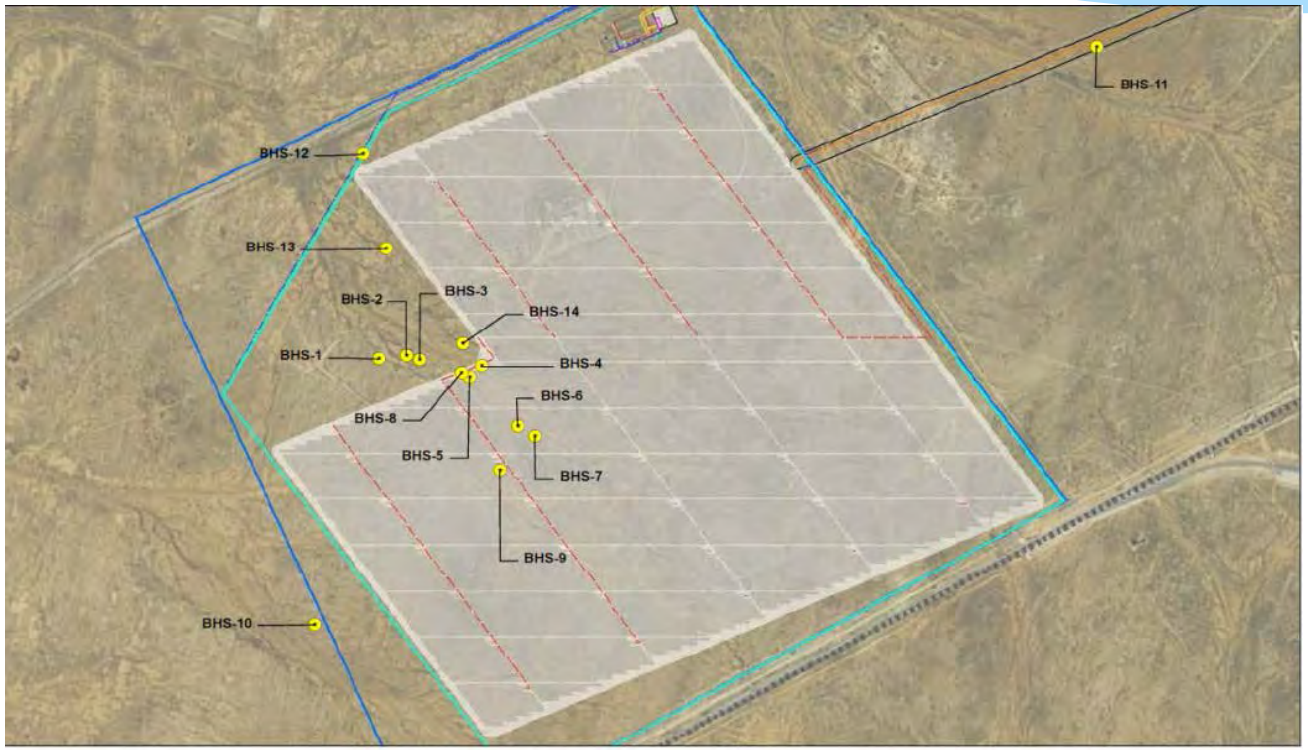


SEDIMENT FENCING – HOW TO INSTALL

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns (as shown in the drawing above) to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 meter long star pickets into the ground at 2.5 meter intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geo-textile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties. Only use geo-textile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geo-textile.

FLORA & FAUNA

* All project personnel should also be aware of the potential presence of possible threatened species & endangered ecological communities.
* Cultural heritage protected areas.



Aboriginal Artefact Locations –
Broken Hill Solar Plant

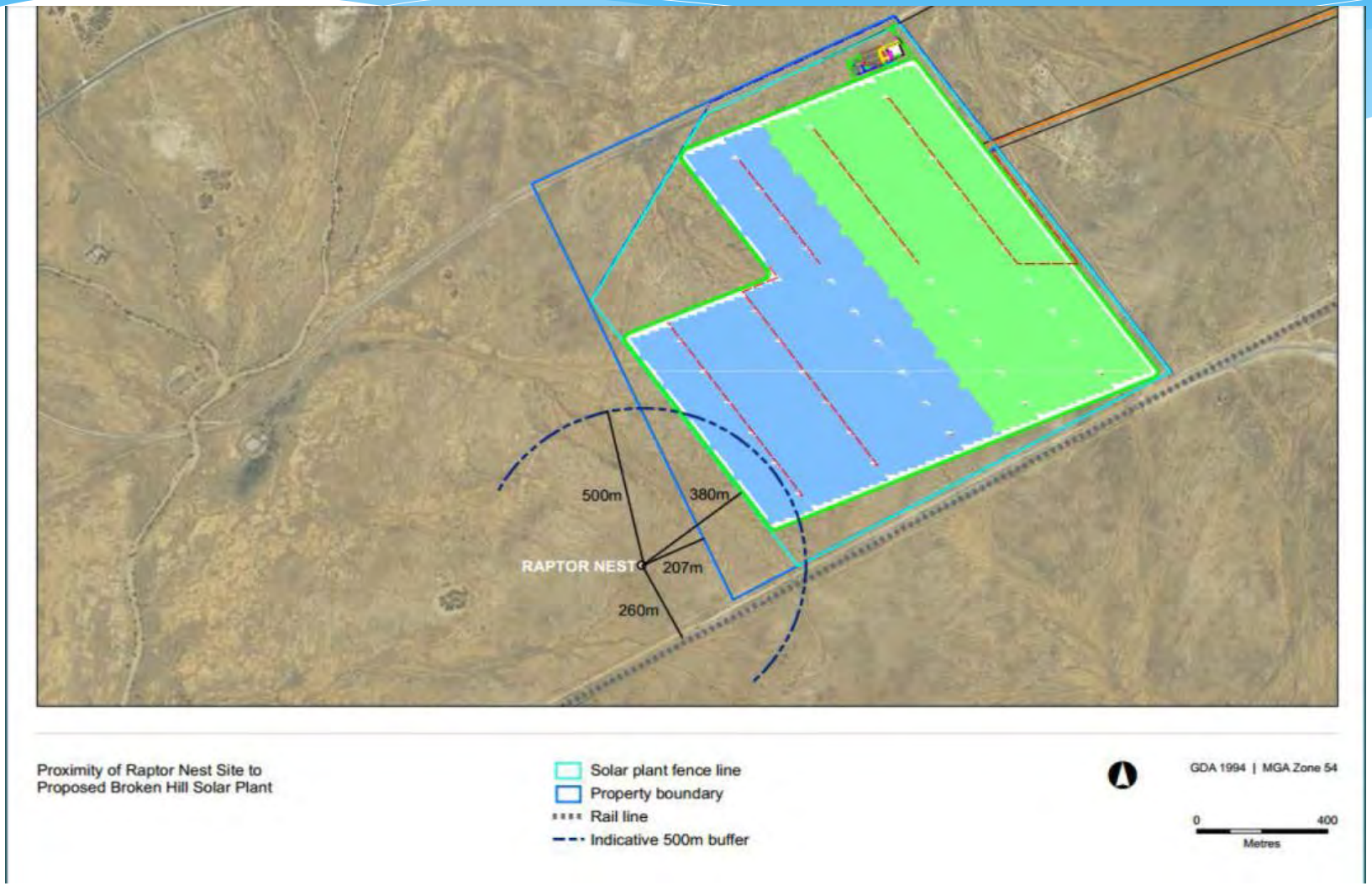
Solar plant fence line
Property boundary
Rail line
Aboriginal site

GDA 1994 | MGA Zone 54

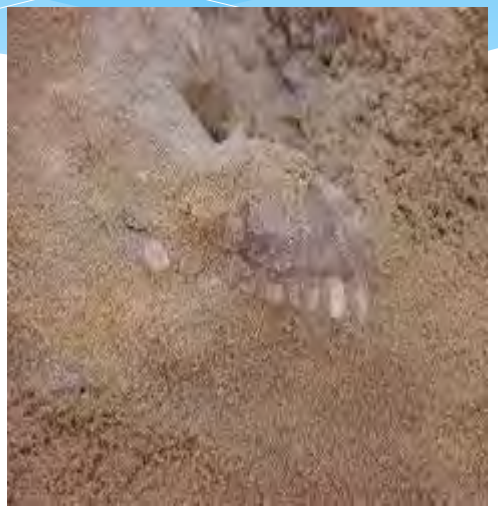
0 400
Metres

CONSOLIDATED POWER PROJECTS

* There is a 400Metre exclusion zone around the raptor nest site.



Reporting Aboriginal artefacts and burial sites.



All Aboriginal artefacts and burial sites are protected under section 90 of the NSW National Parks and Wildlife Act 1974.

Any items discovered during excavations shall be reported and work shall cease in the area that the item was discovered.

Identifying Aboriginal artefacts and burial sites

Artefacts likely to be found at Broken Hill:

Flakes

Identifying Aboriginal artefacts and burial sites

Flakes

Identifying Aboriginal artefacts and burial sites

Flakes

Pirie Point

WEED MANAGEMENT STRATEGY

* The following controls have been identified as part of the weed management strategy;

1. Manual removal and spot spraying of known noxious weeds within the site is to occur prior to any works commencing to prevent further spread of these weed species.
2. Before entering public roads from the site, any mud shall be brushed from the wheels and bodies of vehicles and hauling equipment.
3. If plant and machinery is particularly muddy (e.g. during periods of high rainfall) then the mud shall be scraped from machinery, to ensure all soil and vegetation is removed.
4. Prior to the commencement of construction works, all relevant personnel will be made aware of the presence of specific weed species in the vicinity of the site.

QUALITY MANAGEMENT PLAN

What is a Quality Management Plan?

* A Quality Management Plan details the activities planned for the project that will translate Consolidated Power Projects (CPP) **quality processe**s into operational results designed to ensure work conforms to the requirements of the contract.
* Quality process relevant to site construction activities and YOU include:
    - documentation and records control
    - drawing control
    - inspection and testing
    - conformance equipment and calibration
    - non-conformity and corrective action
    - QA inspection and audits
* The Quality Management Plan is supported by the Work Health Safety and Environmental Management Plan, which have been developed specifically for this Project.

QUALITY PROCESSES

Documentation and Records Control

* A Project Site documentation library containing documentation and records necessary for the implementation of the Project Plans has been established by the Site Manager.
* Folders and their contents are clearly identified and indexed. Workers should ensure that documentation is referred to as required. Reference documentation should not be removed from folders (or the library) without the Site Manager's consent.
* 'Field' documentation (drawings, ITC's etc.) should not be subjected to undue 'wear & tear' as most will be provided to the Client as project records.
* Hand-written entries involving project records must be legible and in ink. Records must be legible and identifiable as to the product or process concerned.
* Errors involving hand-written records must be corrected so as to not to obscure what was originally recorded. Do not attempt to erase and never use white-out. It may be important that the original record remain legible for legal reasons.

QUALITY PROCESSES

Drawing Control

* The Site Manager manages drawings used during construction using a *List/Register* and *Drawing Folder(s)* to control access to, revision checking, and issue of drawings at the point of use. You should use the Register to ensure that the drawing you are using is the correct version.
* *Issued for Construction* (*IFC*) drawings are marked as such. A set of hard-copy IFC are stamped 'SITE COPY', representing a 'first copy' of the drawings. These copies shall be used solely for the purpose of reference and insertion of 'As Built' mark-ups on a regular basis from the 'CONSTRUCTION COPY' and 'COMMISSIONING COPY (field copies) produced for each drawing. Hard-copies of 'SUPERSEDED' drawings are clearly marked as such, and archived.
* SITE COPIES are to remain in the Site Office and not used in the field. These copies represent the current 'As Builts', until the final CAD marked-up copies are delivered to the Client.

QUALITY PROCESSES

Inspection and Testing – ITP's/ITC's

* This process is supported by Inspection and Test Plans and Checklists (ITP's/ITC's), which specify inspection and testing activities conducted during construction, installation and commissioning .
* ITC's provide a procedural discipline, strategy and traceability for inspection and testing activities. This includes *inspection points* and *methods*, *conformance equipment* used, *acceptance criteria*, *hold/witness points* and documentation used to verify acceptance.
* The Site Manager or Engineer in charge of the work is responsible for ensuring individual ITC's are routinely completed and documented correctly, that *hold* and *witness* points are observed, and that any *defects* identified are subject to corrective action.
* **Note:** Drawings numbers (including revision numbers) and details of the actual 'conformance equipment' device used must be recorded on ITC's where required.

QUALITY PROCESSES

Inspection and Testing – Conformance Equipment and Calibration

* Measuring and test equipment used to demonstrate conformity to the contract by CPP must be calibrated and maintained for functional accuracy and/or performance.
* Conformance equipment may include, but is not limited to:

▪ multimeters	▪ insulation testers
▪ injection test sets	▪ polarity testers
▪ GPS	▪ laser levels
▪ switching equipment	▪ torque wrenches
▪ hydraulic crimpers	▪ specialised electronic apparatus

* Evidence of the *conformity status* and ID of such equipment (e.g. serial no.) must be displayed on, or available with, the equipment. Calibration labels must checked identify the testing authority, calibration expiry date and the calibration report number. You must check the calibration status to confirm that it is 'in date'.
* Such equipment are considered to be 'precision devices' and must used accordingly.
* **Note:** This requirement includes conformance equipment used by subcontractors.

WORKPLACE HEALTH & SAFETY AND ENVIRONMENTAL POLICIES

Consolidated Power Projects - Policy	POL-S001
Work Health and Safety Policy	Issue Date: 20th April 2012
Uncontrolled copy when printed. Refer to Intranet for latest version.	Page 1 of 1

WHS Commitment :

Consolidated Power Projects Australia Pty Ltd (CPP) acknowledges its fundamental legal and moral responsibilities to Work Health and Safety (WHS) in all of the company's operations. CPP is committed to promoting conditions of work that facilitate a healthy and safe work environment for all employees, subcontractors, consultants and visitors.

CPP believes that WHS and daily operations are integrated and indivisible activities that require management, employees, subcontractors and clients to work cooperatively together to ensure the highest possible WHS standards are maintained.

WHS Objectives :

CPP is committed to achieving and maintaining the highest standard of WHS by ensuring:

- The current requirements of relevant Acts, Regulations, approved Codes of Practice, Australian Standards and industry best practices are met;
- Resources necessary to ensure WHS compliance are provided;
- A minimum system standard based on recognised standards for WHS are maintained;
- A safe work place free from risk through the implementation of developed WHS systems;
- Selecting employees, consultants, contractors, and suppliers who support our aims and objectives within our WHS philosophy;
- A range of policies and procedures are in place to protect the health and safety of employees, subcontractors and others in the workplace;
- Management are actively involved in developing and promoting policies and procedures;
- Defining WHS responsibilities for all level of the organisation;
- Appropriate induction, training and supervision standards are provided to all employees, subcontractors, consultants and visitors;
- WHS management systems are maintained, reviewed, and improved periodically, based on consultation and communication with employees, subcontractors and consultants;
- Facilitating a culture that enables continuous improvement in WHS performance;
- The provision of a framework for setting and reviewing measurable objectives and targets to maximise WHS;
- This Work Health and Safety Policy is available to all employees, subcontractors and consultants and upon request to other interested parties;
- This Work Health and Safety Policy is reviewed and updated periodically for suitability.

Charles Wright

General Manager

Consolidated Power Projects Australia Pty Ltd

20th April 2012

Consolidated Power Projects - Policy	POL-S005
Environmental Policy	Issue Date: 24 Sep 2012
Uncontrolled copy when printed. Refer to Intranet for latest version.	Page 1 of 1

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

QUALITY AND DRUGS & ALCOHOL POLICIES

Quality Policy

Quality Statement

Consolidated Power Projects Australia Pty Ltd (CPP) is committed to building on its enviable reputation as a leader in the field of engineering design, construction, commissioning and maintenance of high voltage electrical infrastructure.

CPP will strive to meet customer requirements for quality, performance and value in relation to delivered products and services through compliance with CPP's Quality Management System. A philosophy of continual improvement via the systematic review of processes and procedures shall form the foundation of how CPP will strive for industry best practice.

Measurable quality objectives specifically related to the expectations of customers will be established and regularly reviewed within the framework of CPP's corporate and business planning. This Quality Policy will also be periodically reviewed to ensure it remains appropriate to CPP's operations.

Realisation of the company's quality policy and objectives is a responsibility of employees at all levels of the organisation and, as such, this Quality Policy is provided and explained to each employee by CPP Management. CPP encourages and assists employees to achieve personal and company goals that are necessary to meet their quality responsibilities through professional development and training.

To achieve this policy, CPP will maintain an effective Quality Management System through the following high level objectives:

a) complying with the requirements of AS/NZS ISO 9001:2008 and applicable legal requirements;

b) ensuring the supply of conforming products and services to the customer;

c) being fully aligned with the current business plan and values of the organisation; and

d) enhancing the company's reputation with its customers and other interested parties.

Charles Wright
General Manager
Consolidated Power Projects Australia Pty Ltd
15th November 2012

Certified System
Quality
ISO 9001
SAI GLOBAL

Consolidated Power Projects - Policy	POL-S006
Drug and Alcohol Policy	**Issue Date** 3 Sep 09
Uncontrolled copy when printed. Refer to Intranet for latest version.	**Page 1 of 1**

1 POLICY

This policy seeks to facilitate the health, safety and welfare of all Consolidated Power Projects employees, contractors, subcontractors, consultants, their employees and site visitors by:

- Promoting personal responsibility in relation to the consumption of alcohol;
- Prohibiting the use of illicit drugs by all employees; and
- Promoting responsible and lawful use of prescribed and over the counter medication.

Consolidated Power Projects will not allow any employee, contractor, subcontractor, consultant, their employees or visitors to:

- Consume alcohol during work hours;
- Consume alcohol at any work sites, excluding official sanctioned functions;
- Possess, consume or administer illegal drugs on Consolidated Power Projects premises or work sites at any time. Where illegal drugs are involved or suspected, then police will be informed;
- Present for work in a state where they are unable to perform their duties to acceptable standard due to the influence of alcohol or other drugs; and
- Bring illegal drugs into the workplace. This is strictly forbidden and will result in instant dismissal and notification to the police.

This policy applies to any training functions or seminars.

Employees and contractors are not permitted to visit the workplace if they are off-duty and impaired to any degree by any of these substances.

Where prescription medications are involved, the individual should advise their supervisor so that actions can be taken to ensure that safety is not affected and any performance impact is properly managed.

Workers can expect to be tested for alcohol and or drugs:

- Where testing is part of the principal's site entry conditions;
- When an incident occurs; and
- Where a supervisor suspects a person's performance is impaired.

Persons who return a positive test will face disciplinary action, which may include dismissal. They will not be allowed back on site until they supply a negative test result.

Information on drug and alcohol use will be given to all employees. Consolidated Power Projects will endeavour, upon request, to direct persons to agencies who may be able to help.

Charles Wright
General Manager
Consolidated Power Projects Australia Pty Ltd

INDUCTION DECLARATION

* Please ensure you have completed the following prior to leaving;

1. Complete an induction declaration including emergency contact details;
2. Provided copies of Construction Industry Induction cards;
3. Provided copies of competencies required to complete your task;
4. Completed the site induction Questionnaire.