

AGL

Broken Hill Solar Plant

SUBMISSIONS AND PREFERRED PROJECT REPORT

February 2013

SINCLAIR KNIGHT MERZ

Broken Hill Solar Plant Submissions and Preferred Project Report

- Final
- 7 February 2013

Executive Summary

AGL Energy Limited (AGL) proposes to develop the Broken Hill Solar Plant project. The project involves the construction and operation of a nominal 50 megawatt (MW) solar photovoltaic (PV) power station, located approximately 5 kilometres south-west of Broken Hill in far western NSW. The solar PV plant will connect to the existing electricity grid at the TransGrid Broken Hill substation via a proposed 22 kilovolt (kV) double circuit overhead transmission line, approximately 2.7 kilometres long. There is also an existing 22kV transmission line that traverses the proposed site which will be realigned around the solar plant and installed underground.

An Environmental Assessment (EA) of the project has been completed and this was placed on public exhibition from Monday 29 October to Friday 30 November 2012. A total of six submissions were received, all of which were from NSW government agencies. Two submissions were supportive of the project and do not require a formal response. No public submissions were received.

The Submissions Report outlines AGL's response to the submissions made during public exhibition of the EA and sets out AGL's revised Statement of Commitments. The Preferred Project Report sets out minor changes to the project layout that have occurred since the exhibition of the EA so as to minimise environmental impacts. In particular, changes to the project layout have resulted in a reduction to the vegetation clearing estimate and a reduction in visual impact.

Submissions were received for the following environmental factors:

- Flora and fauna.
- Aboriginal cultural heritage.
- Dust.
- Decommissioning.
- Hydrology.
- Traffic and transport.

A Statement of Commitments has been finalised and is inclusive of additions and amendments that have been made to adequately address the submissions. Four new commitments have been made and eight existing commitments have been amended. Minor amendments have been made to clarify a number of the remaining commitments. The final Statement of Commitments for the project is presented in Table 4-1.

Contents

1. Introduction and Background

1.1. The project

The Broken Hill Solar Plant project involves the construction and operation of a nominal 50 megawatt (MW) solar photovoltaic (PV) power station, located about 5 kilometres south-west of Broken Hill in far western NSW. The plant would comprise a series of PV solar modules mounted on fixed frames and would occupy approximately 200 hectares (ha) of land (Figure 1-1). The project includes installation and operation of a double circuit 22 kilovolt (kV) overhead transmission line, approximately 2.7 kilometres in length, to connect the PV plant to the electricity grid at the TransGrid Broken Hill substation. There is also an existing 22kV transmission line that traverses the proposed site which would be realigned around the solar plant and installed underground.

The project would comprise the following key elements:

- A solar PV plant constructed using cadmium telluride (CdTe) thin film solar PV modules, installed in regular arrays with an aggregate nominal capacity of approximately 50 MW. Each solar module would be fixed at a 25^0 tilt from the horizontal with a 0^0 north azimuth.
- A new 22kV double circuit transmission line approximately 2.7 kilometres long to connect the solar plant to TransGrid's Broken Hill substation.
- Diversion of an existing aboveground 22kV transmission line around the solar plant. The diverted section of line would be installed underground.
- Aboveground and underground electrical conduits and cabling which connect the arrays to the inverters and transformers.
- A system of inverters and step up transformers throughout the PV arrays.
- Marshalling switchgear to collect the power from the PV arrays.
- Internal access tracks to allow for maintenance of the site.
- Supervisory control and data acquisition (SCADA) control system.
- Site office and maintenance building.
- Temporary infrastructure associated with site construction including the site compound and storage areas.

1.2. Statutory context

On 12 November 2010, the Director, Infrastructure Projects under delegation from the Minister for Planning formed the opinion that the project is a development of a kind that is described in clause 24 of Schedule 1 of the *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP) and was declared to be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies due to its State and regional planning significance.

The Director-General's Requirements (DGRs) for the environmental assessment of the project were issued on 8 December 2010. While recent changes to the planning system have included the repeal of Part 3A, the project is a transitional Part 3A project under the EP&A Act. Clause 2(1)(c) of Schedule 6A to the EP&A Act provides that a project for which environmental assessment requirements were last notified or adopted within 2 years before the relevant Part 3A repeal date is a "transitional Part 3A project". As the DGRs were issued on 8 December 2010, being within two years before Part 3A was repealed on 1 October 2011, the project is a transitional Part 3A project. As such, the project has been assessed in accordance with Part 3A of the EP&A Act.

The EA was publically exhibited from 29 October 2012 to 30 November 2012. During this period, submissions were invited from anyone with an interest in the project including members of the community and government stakeholders. A total of six submissions were received during this period.

On 6 December 2012, in accordance with section 75H of the EP&A Act, the Director-General required AGL to respond to the issues raised in the submissions in a Submissions Report. The Director-General also notified AGL that if any changes to the project were proposed to minimise its environmental impact, a Preferred Project Report may be required (including any revision of the Statement of Commitments to reflect any proposed changes to the project).

This report:

- Addresses the issues raised in submissions.
- Proposes some minor changes to the project to minimise its environmental impact and address issues raised in the submissions.
- Provides a revised Statement of Commitments for the project.

1.3. Environmental Assessment exhibition

The Broken Hill Solar Plant Environmental Assessment was placed on public exhibition from Monday 29 October to Friday 30 November 2012 at:

- Department of Planning and Infrastructure website (majorprojects.planning.nsw.gov.au)
- AGL website (agl.com.au/brokenhill/index.php/environment/)
- Department of Planning and Infrastructure Information Centre, 23-33 Bridge Street, Sydney.
- Broken Hill City Council, Council Administration Offices, 240 Blende Street, Broken Hill.
- Charles Rasp Memorial Library, 249 Blende Street, Broken Hill.
- The Nature Conservation Council of NSW, Level 2, 5 Wilson Street, Newtown.

Local residents and community members were notified of the exhibition period through:

- Letters to 300 residents within 3 kilometres of the site sent on 2 November 2012.
- Newspaper advertorials placed in the Barrier Daily Truth on 3 and 16 November 2012.
- Community meetings on 22 November at the Broken Hill Centre for Community.

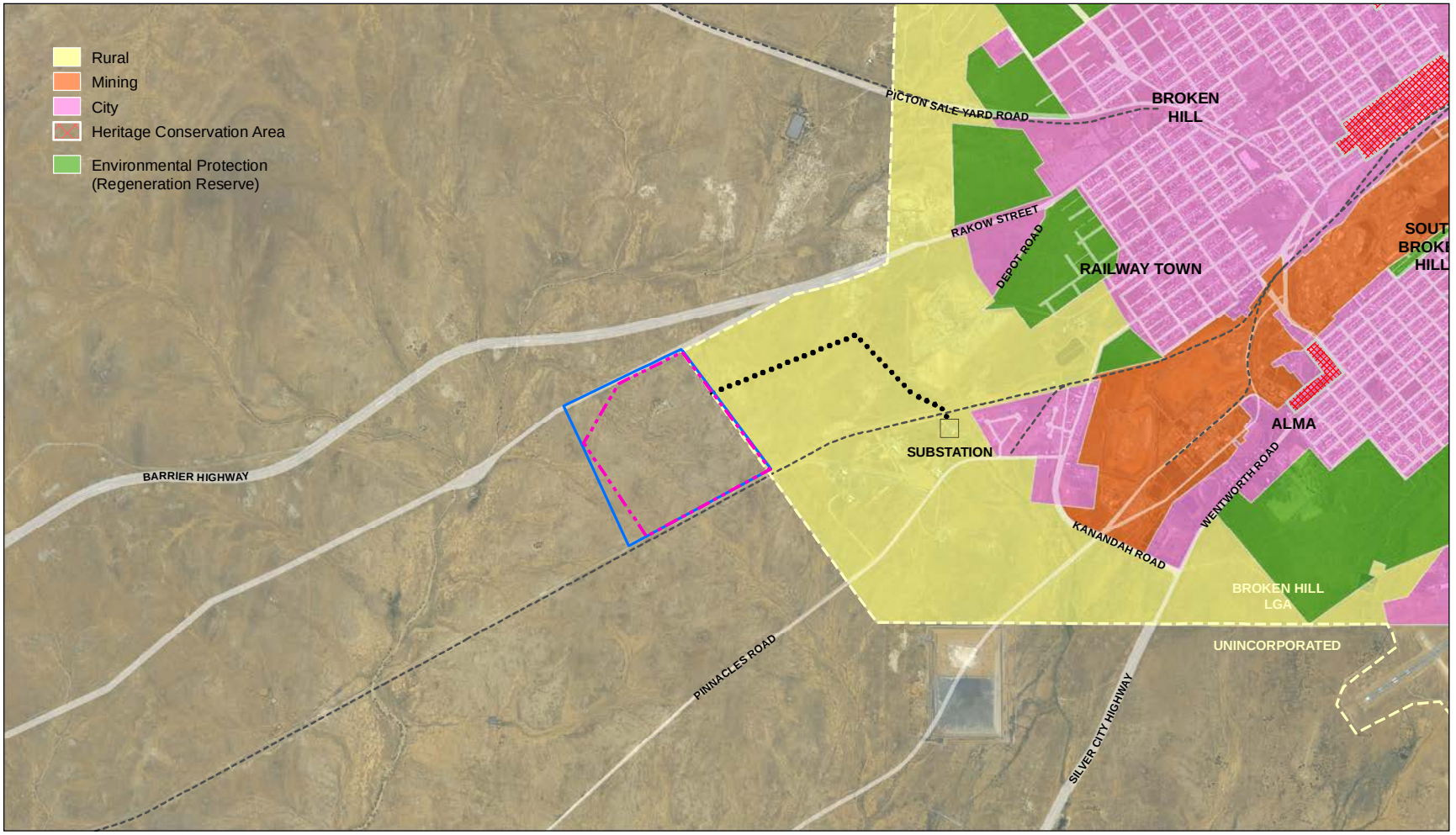

Figure 1-1 Indicative project layout and surrounds (subject to detailed design)

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1.4. Purpose of the document

The Submissions and Preferred Project Report has been prepared by Sinclair Knight Merz (SKM). This report:

- Considers and responds to the issues raised in the agency submissions for the Broken Hill Solar Plant. No public submissions were received.
- Includes the results of any additional evaluations undertaken to assess the impact of the proposal.
- Proposes some minor changes to the project to minimise its environmental impact and presents a revised Statement of Commitments

1.5. Structure of the document

This document contains five sections and is structured as follows:

- **Section 1**: This section provides a brief introduction to the project, its assessment under the EP&A Act, and the purpose of this document.
- **Section 2**: This section responds to the issues raised in agency submissions.
- **Section 3**: This section describes proposed changes to the project layout and the implications of these changes.
- **Section 4**: This section provides a revised Statement of Commitments proposed by AGL.
- **Section 5**: This section provides a list of all references made in preparing this document.

2. Response to Issues

2.1. Respondents

The Department of Planning and Infrastructure received a total of six submissions, all of which were from government agencies. No public submissions were received.

The following government agencies provided submissions that require formal responses:

- Office of Environment and Heritage (OEH).
- Department of Primary Industries (DPI) (including both the Catchments & Lands Division and the NSW Office of Water).
- Roads and Maritime Services.
- Broken Hill City Council.

Two further submissions were supportive of the project and require no further response. These submissions were provided by the following government agencies:

- NSW Environmental Protection Authority.
- NSW Trade and Investment (Resources and Energy Division).

The full submissions are provided in **Appendix A**.

2.2. Overview of the issues raised

The issues raised in the four submissions have been extracted and responses to the issues have been provided in the following subsections. Issues were raised for the following environmental factors:

- Flora and fauna.
- Aboriginal cultural heritage.
- Dust.
- Decommissioning.
- Hydrology.
- Traffic and transport.

2.3. Flora and fauna

The following comments relating to flora and fauna were provided in submissions made by OEH and the Department of Primary Industries (Catchments and Lands). These comments have been categorised into a number of themes as stated in the following subsections.

2.3.1. General

SUBMISSION: OEH considers that any changes to vegetation during construction and operation should be considered permanent, as it is unclear how re-vegetation will be implemented following decommissioning.

RESPONSE: All proposed changes to vegetation during construction and operation will be considered permanent, although there will be a number of areas which are only disturbed temporarily. All proposed changes to vegetation are indicative based on preliminary design and may change subject to detailed design.

2.3.2. Vegetation communities

SUBMISSION: OEH seek clarification regarding the vegetation clearing estimates, as there is a discrepancy in the document. In addition, OEH seek clarification regarding whether temporary areas associated with the construction of the solar plant, and the location of these temporary areas to determine if they are likely to impact on the ongoing management of offsets that are identified as part of the approval conditions.

RESPONSE: The clearing estimates have been updated based on a revised site layout. This layout is illustrated in Figure 3-1. The revised vegetation clearing estimate is 140.4 ha. This is indicative and based on preliminary design. All proposed clearing will be assumed permanent. The following elements of the project were included in the vegetation clearing estimate:

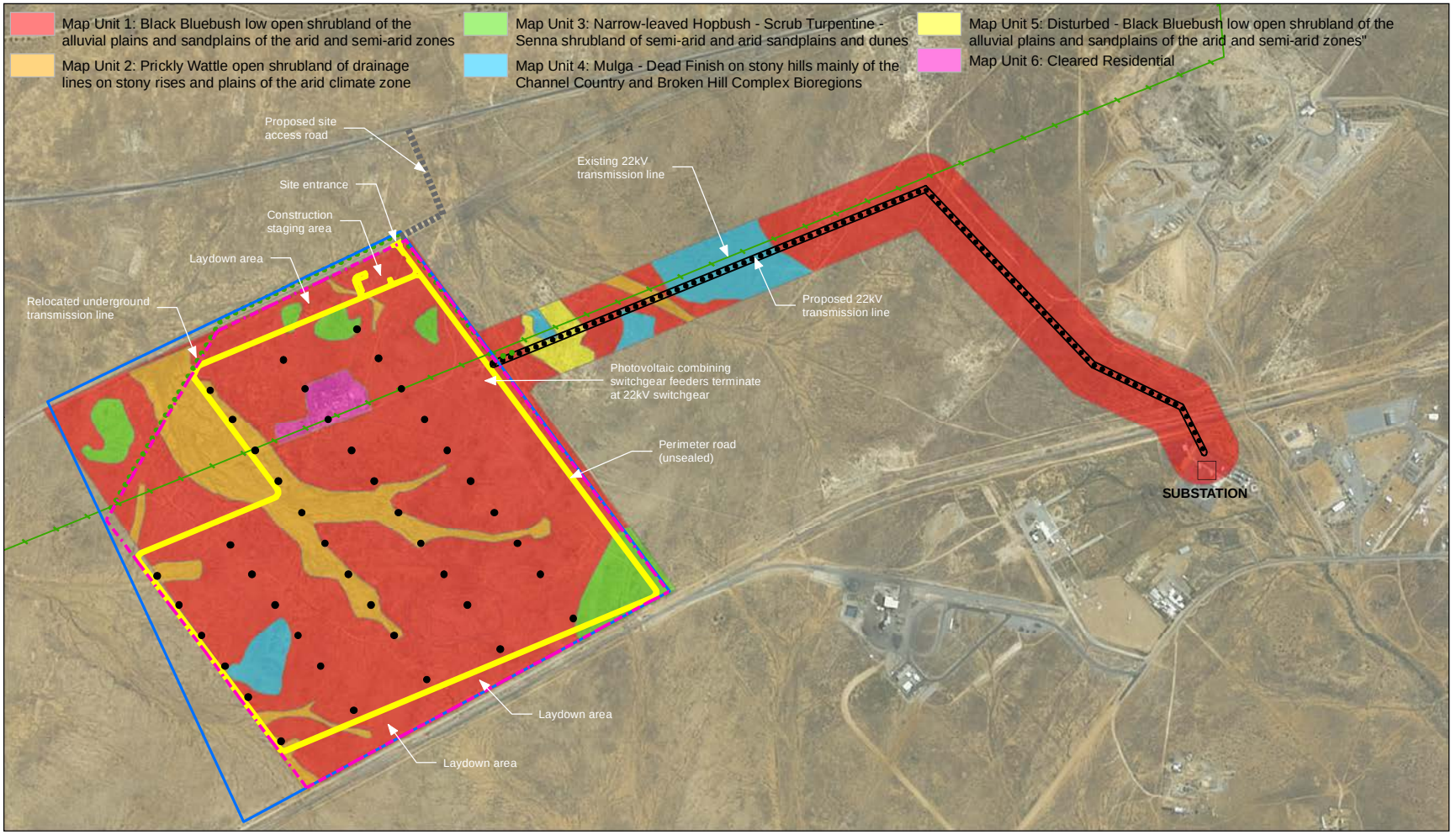
- Solar plant.
- Construction staging area.
- Laydown areas.
- Overhead transmission line.
- Underground transmission line.
- Property boundary fence.

SUBMISSION: OEH seek clarification about a discrepancy between the map units identified in the body of the Environmental Assessment (EA) (Table 7-2) and the map units displayed in Figure 7-3.

RESPONSE: Figure 7-3 presented in the EA has been updated as Figure 2-1 in this report. Figure 2-1 reflects the Vegetation Classification and Assessment (VCA) database map units, which are consistent with the map units described in the EA (refer to Table 7-2 of the EA).

Map Unit 1 (Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones) in Figure 2-1 of this report is the same as Chenopod Low Shrubland mapped in Figure 7-3. Up to 80% of the site is dominated by this vegetation type.

Figure 2-1 also illustrates the proposed project layout and proposed construction work sites in relation to the spatial distribution of vegetation communities.



Indicative site boundary
Fence line
Proposed transmission line relocation
Proposed transmission line easement
Perimeter road (unsealed)

GDA 1994 | MGA Zone 54

0 800
Metres

NSW

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

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Spatial Team - Prepared by : SS
Checked by : JC & ABS

2.3.3. Threatened fauna

SUBMISSION: OEH considers that the fauna surveys undertaken were inadequate to determine the full range of species within the project site. As such, OEH considers that there is a reasonable likelihood that a number of species, particularly threatened mammals and reptiles will occur at the site. However, OEH note that the Assessment of Significance does adequately address all the species that would likely be impacted by the project and agrees that the development of an appropriate offset will assist with mitigation, and as such the project will not cause a significant impact. In addition, OEH state that the Construction Environmental Management Plan (CEMP) should provide details on how clearing operations will be undertaken, so as to minimise impacts on threatened fauna.

RESPONSE: The CEMP will provide details on management procedures required to minimise impacts associated with clearing of vegetation. The CEMP will include the requirement for: (i) a pre-clearing survey to be undertaken by an ecologist before vegetation is cleared, and (ii) an ecologist to be present during all clearing activities to minimise impacts on threatened fauna. An additional statement of commitment is provided to address this requirement and is stated below:

FF5: The site CEMP will specify management procedures for vegetation clearing and details for an ecologist to undertake a pre-clearing survey and to be present during all clearing activities.

SUBMISSION: OEH support the precautionary approach towards the raptor nesting site near the project site, possibly being a Black-breasted Buzzard. OEH also agree with the implementation of a 500 metres buffer zone. However, OEH expressed concerns about the potential impacts on the nesting site during operation and would like to see monitoring of breeding activity and further mitigation if the species does abandon the site, such as the provision of an artificial structure.

RESPONSE: The CEMP and the Operation Environment Management Plan (OEMP) will include content for the monitoring of breeding activity of the raptor nesting site. The CEMP and OEMP will be prepared in consultation with OEH and will include the following detail:

- Timing and frequency of monitoring of the nesting site with consideration to annual variations in activity such as nesting and breeding periods.
- Monitoring methodology.
- Contingency and mitigation measures, should they be required, including the provision of an artificial structure.

An additional statement of commitment is provided to address this requirement and is stated below:

FF4: The Construction Environmental Management Plan and the Operation Environment Management Plan will include monitoring requirements for the raptor nest located near to the project site. The monitoring requirements will be prepared in consultation with OEH.

2.3.4. Threatened fauna - other

During the Department of Planning and Infrastructure's preparation of the Project's Assessment Report, the Department has queried the number of threatened fauna likely to occur within the site boundary. The number of species stated in the Flora and Fauna Assessment report differs to the number stated in the Environmental Assessment. This query was not a formal submission, but is important to address as detailed below.

RESPONSE: A total of nine threatened fauna species have been identified with likelihood of occurring within the site boundary. These are listed in Table 3-2 of the Flora and Fauna Assessment report and below (Table 2-1). The full updated list of threatened fauna determined from OEH consultation in August 2012 was omitted in the Environmental Assessment document. Also, a test of significance for the Little Eagle was omitted from the Flora and Fauna Assessment report and is now provided in **Appendix B**.

- **Table 2-1 List of threatened fauna with likelihood to occur within the site boundary**

Ref.	Common Name	Comment
1	Little Eagle	-
2	Black-breasted Buzzard	-
3	Spotted Harrier	-
4	Redthroat	-
5	Rufous Fieldwren	Included in assessment following OEH consultation.
6	White-throated Chat	Included in assessment following OEH consultation.
7	Australian Bustard	Included in assessment following OEH consultation.
8	Pied Honeyeater	Included in assessment following OEH consultation.
9	Bolam's Mouse	Included in assessment following OEH consultation.

2.3.5. Offsets

SUBMISSION: OEH supports the commitment in the EA to develop an Offset Strategy, in addition to the 60 hectares that is to remain undeveloped within the north west corner of the site. However, OEH feel that significant progress is required to ensure a viable offset is available before the proposal is operational.

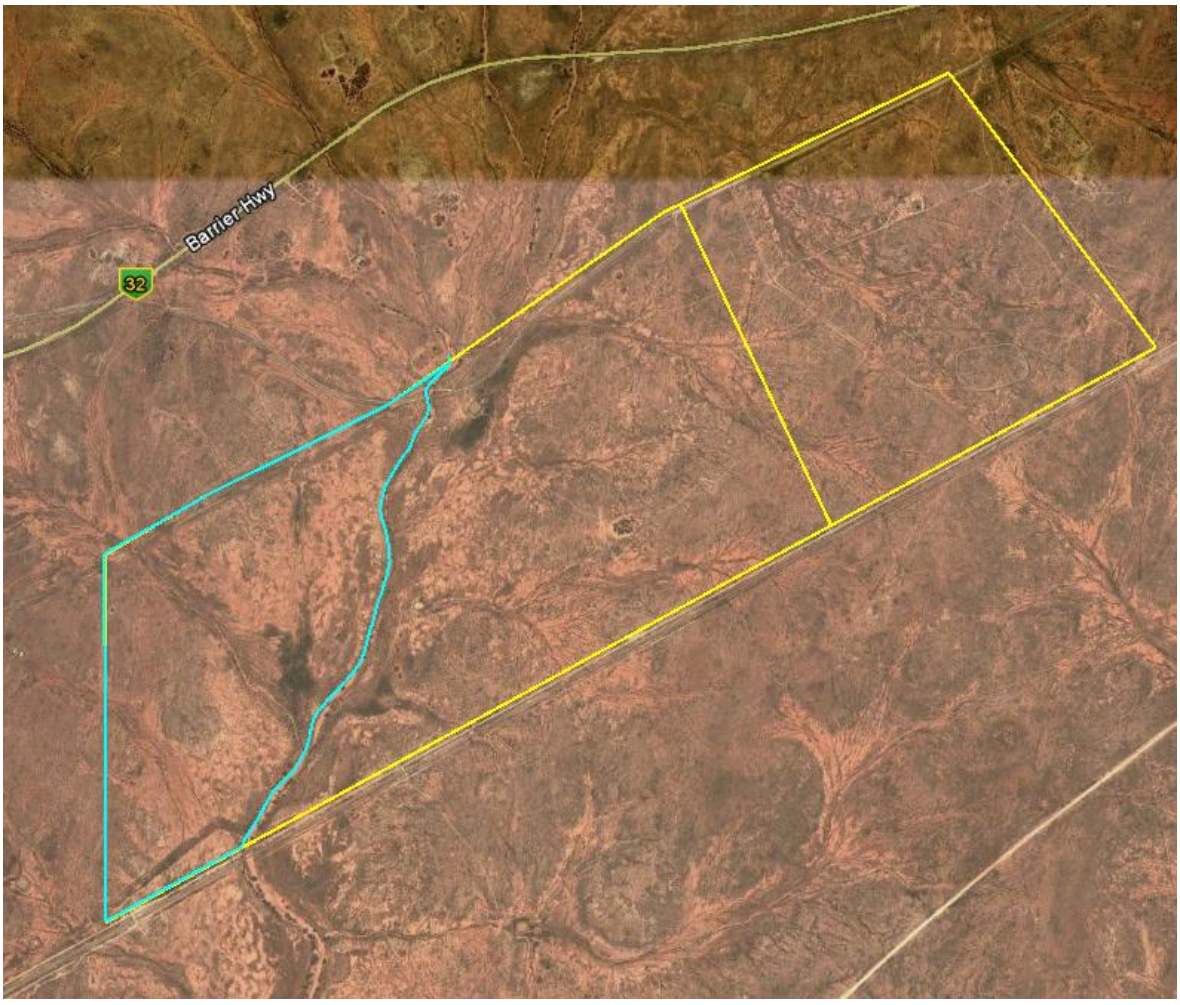
RESPONSE: The Offset Management Strategy will be completed before clearing commences at the site. OEH will be consulted during the preparation of the Offset Strategy.

AGL has identified a suitable area of land on the property from which the proposed solar plant site will be subdivided. AGL has had discussions with the lessee of that property (Western Lands Lease (WLL) 14240). The area of the proposed Conservation Area located on the western portion of

WLL 14240 is identified by the blue outline in Figure 2-2. The lessee has agreed to the proposed establishment of a Conservation Area on that land.

This area would be fenced to exclude livestock and managed to remove weeds and debris.

AGL met with an officer of the OEH at the site who supported the approach of establishing a Conservation Area on a nearby area of land containing similar habitats.



- **Figure 2-2 – Proposed Conservation Area (blue outline).**

AGL has surveyed the proposed Conservation Area and the area is approximately 160 hectares in size.

AGL has discussed this proposed Conservation Area with the Catchment & Lands Division of DPI. Catchment & Lands has indicated that registration of this Conservation Area would require the lessee of WLL 14240 to apply for a Change of Lease Purpose (COLP). The Conservation Area will be registered on the WLL and the existing lease purpose of WLL 14240 will be changed from

"grazing" to "grazing and conservation," with several additional management conditions added to the lease.

Catchment & Lands has acknowledged that a COLP application will be submitted to the Department once the OEH and the Department of Planning & Infrastructure have agreed to this offset proposal.

SUBMISSION: In addition, OEH has asked that they be involved in the development of the Offset Strategy and that it be finalised before any clearing commences. OEH have asked that details regarding the area of the offset, vegetation communities, tenure, identification/costing of management issues and monitoring details be included in the strategy. In addition, OEH would like identification of a mechanism that protects the area in perpetuity.

RESPONSE: This submission has been addressed in the revised commitment FF8 below.

SUBMISSION: OEH has asked that the cumulative impacts of clearing in the Willyama Common for the transmission line be considered in consultation with the agencies responsible for the management of the Common (Broken Hill City Council and the Department of Primary Industries (Catchments and Lands)).

RESPONSE: The existing Statement of Commitment (FF8) has been modified as follows to include consultation with OEH and to address cumulative clearing impacts in the Willyama Common:

FF8: An Offset Management Strategy will be developed, including an Offset Management and Rehabilitation Plan, in consultation with OEH. The Strategy is to include:

- *Details on the area of the offset.*
- *Vegetation communities present and their current condition.*
- *Tenure of the land within the offset.*
- *Identification of a mechanism that protects the area in perpetuity.*
- *Identification and costing of management issues, including fencing and weed/feral animal control.*
- *Monitoring details to determine the effectiveness of the management actions.*

The Offset Management Strategy will be prepared in consultation with the agencies responsible for the management of the Willyama Common and will consider the cumulative impacts of clearing in the Willyama Common for the transmission line.

2.3.6. Re-vegetation

SUBMISSION: The Department of Primary Industries (Catchments and Lands) has asked that the site be re-vegetated with locally endemic native species.

RESPONSE: The existing Statement of Commitment (FF6) has been modified as follows to include the specific requirements around re-vegetation:

FF6: Site restoration and re-vegetation activities will be undertaken during and after construction. All re-vegetation activities will be undertaken using locally endemic native species.

2.4. Aboriginal cultural heritage

SUBMISSION: OEH would like the following revisions to the Statement of Commitments:

- IH1: Aboriginal Heritage Management Plan (AHMP) to be developed in consultation with OEH.
- IH2: Inclusion of 'protocols' for protection and management of unidentified Aboriginal objects or suspected human remains in the AHMP.
- EM1 and EM2: The Construction Environmental Management Plan (CEMP) should include details on the AHMP. The AHMP will need to be finalised and implemented prior to the commencement of operation of the solar plant.

RESPONSE: Three existing Statement of Commitments have been modified to include OEH requirements. No changes to Commitment EM1 is proposed as all of OEH's requirements, as stated above, are captured in EM2. SKM has assumed that OEH would like the AHMP finalised and implemented prior to commencement of construction, rather than operation, and EM2 has been modified based on this assumption.

IH1: The proponent will consult with Aboriginal stakeholders regarding management of the 14 Aboriginal heritage sites recorded during the site survey. An Aboriginal Heritage Management Plan (AHMP) will be developed in consultation with these stakeholders and OEH to specify how the sites will be protected in-situ, relocated or salvaged.

IH2: Protocols will be developed to manage and protect Aboriginal artefacts or suspected human remains which may be encountered during construction. These protocols will be specified in the AHMP and may include stopping works in the vicinity of the find, notification of relevant stakeholders and implementation of an appropriate management strategy.

EM2: A construction environmental management plan (CEMP) will be prepared and implemented before the start of any construction activities. The CEMP will include details on the Aboriginal Heritage Management Plan, which will be finalised and implemented prior to the commencement of construction of the solar plant.

2.5. Dust

SUBMISSION: Broken Hill City Council ask that all bare (un-vegetated) areas in the project site be actively managed so that dust is not lifted during changes in weather or prevailing winds and impact the city of Broken Hill. Council have suggested suitable ground covers or dust suppressants.

RESPONSE: Dust suppression measures will be adopted during construction and operation. During construction, a water cart will be used to water exposed surfaces and any stockpiled topsoil or other materials that may generate dust. Stabilising techniques and/or environmentally acceptable dust suppressant chemicals will be utilised if water application is not effective. During operation, dust will be minimised by re-vegetating temporarily disturbed areas. Other disturbed areas that have not been compacted will be treated with environmentally acceptable dust suppressant chemicals or, if suitable, be re-vegetated. The existing Statement of Commitment (AQ1) has been modified to include these requirements:

AQ1: During construction and operation, all exposed surfaces will be monitored for dust generation and appropriate dust suppression measures, such as watering, re-vegetation or application of environmentally acceptable dust suppressant chemicals will be implemented as required.

2.6. Decommissioning

Department of Primary Industries (Catchments and Lands) ask that costs and timeframes associated with the decommissioning process be outlined.

RESPONSE**:** It is estimated that decommissioning will occur over a period of approximately three months. Decommissioning costs, inclusive of labour, rehabilitation and salvage of materials, are estimated to cost approximately $7.7 million in 2013 Australian dollar terms. The proponent is a large publicly listed company with ample resources to fund the decommissioning costs. In any event, decommissioning costs will be funded from cash flow generated during the final years of project operation.

2.7. Hydrology

The following submissions were provided by the Department of Primary Industries – NSW Office of Water.

SUBMISSION: The Office of Water seeks clarification regarding how sediment and erosion control in relation to the flow paths shown in Figure 11-2 of the EA will be managed during construction and operation. In addition, the Office of Water recommend that any works within 40 metres of a watercourse, be carried out in accordance with the *Guidelines for Controlled Activities on Waterfront Land (July 2012).*

RESPONSE: To clarify, the “flow paths” shown in Figure 11-2 of the Environmental Assessment are drainage channels which may convey water during heavy rainfall events which result in significant surface runoff. These drainage channels are ephemeral only and do not support surface water flows all year round. Sediment and control measures in relation to these “flow paths” will be detailed in the CEMP and OEMP. Typical measures such as silt fences and surface stabilising materials will be considered for the control of erosion within the solar plant site. In developing the CEMP and OEMP, relevant aspects of the Guidelines for Controlled Activities on Waterfront Land

(July 2012) that apply to ephemeral drainage channels will be considered to identify best environmental management practices for sediment and erosion control.

SUBMISSION: The Office of Water asks that the proponent prepare a CEMP and an Operation Environment Management Plan (OEMP) in consultation with and to the satisfaction of the Office prior to construction and operation commencing.

RESPONSE: The Office of Water will be consulted during the preparation of these plans. It is recommended that a new statement of commitment be made, as below:

EM3: A CEMP and an OEMP will be prepared for the site in consultation with the relevant authorities including the NSW Office of Water, OEH and RMS.

2.8. Traffic and transport

The Roads and Maritime Services (RMS) provided the following responses in relation to traffic and access.

SUBMISSION: RMS requests they be consulted during the preparation of the Traffic Management Plan (TMP) to outline measures associated with delivery and construction of the solar plant or ancillary structures, any construction or excavated materials, any machinery and personnel involved in the construction, operation or decommissioning process. RMS requests that the TMP address the following:

- Details about the vehicles accessing/exiting the site.
- Details about haulage and construction related vehicles.
- Management and coordination of construction worker vehicles.
- Scheduling of haulage vehicle movements.

RESPONSE: It is recommended that an existing statement of commitment (TT2) be modified, as below:

TT2: A 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.*
- *Origin, number, size and frequency of vehicles accessing/exiting the site.*
- *Speed limits and directions of travel on the access roads within the site.*
- *Loads, weights and lengths of haulage and construction related vehicles.*
- *Scheduling of haulage vehicle movements to minimise convoy length and platoons.*
- *Traffic control requirements, including requirements for signage, barriers and traffic control personnel.*

- *The management and coordination of vehicle movements to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables.*
- *Details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS supplements.*

SUBMISSION: In addition, RMS requests that an appointed traffic contractor and RMS determine the final details of haulage and that road and intersection improvement works be approved and completed prior to the commencement of construction of the solar plant. All works are to be at no cost to RMS.

RESPONSE: It is recommended that a new statement of commitment be made, as below:

TT1: 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.

SUBMISSION: RMS indicates that a formal agreement in the form of a Works Authorisation Deed is required between the developer and RMS prior to works commencing on the intersection upgrade. A Road Occupancy Licence is required prior to works commencing within three metres of the travel lanes on the Barrier Highway.

RESPONSE: Table 2-2 specifies the roads licences and approvals required for the project. This includes the Works Authorisation Deed and the Road Occupancy Licence as stipulated by RMS. These licences and approvals will be sought prior to works commencing on or near the Barrier Highway.

Table 2-2 Summary of licensing and approvals required

Requirement	Timing
Works Authorisation Deed	Prior to commencement of works on the intersection upgrade.
Road Occupancy Licence	Prior to works commencing within three metres of the travel lanes on the Barrier Highway.

SUBMISSION: RMS requests that in the event that any gate, grid or similar structure is installed for the access, it should be set back 20 metres from the edge of the road for single articulated trucks.

RESPONSE: The access road from the Barrier Highway to the solar PV plant site will also be used by the lessee of the land to the west of the solar plant. As a result, no gate, grid or similar structure will be installed within 20 metres of the edge of the Barrier Highway.

The main entry to the solar plant site (turn off to the south of the access road) will comprise a gate for security purposes. The main entry is located approximately 350 metres from the Barrier Highway.

SUBMISSION: RMS recommends that in the event that glare from solar panels is evident on a public road, the proponent shall immediately implement glare mitigation measures.

RESPONSE: It is recommended that an existing Statement if Commitment (V7) be modified, as below:

V7: In the event that glare from the solar plant is evident from a public road and causes a nuisance, distraction and/or hazard to motorists, the proponent shall immediately implement further glare mitigation measures.

3. Project Changes

3.1. Site layout changes

Minor changes have been made to the proposed solar plant layout since the EA was exhibited in November 2012. These changes were made as part of ongoing engineering design and in an effort to reduce environmental impact. Changes to the plant layout include:

- The overall solar plant footprint has been reduced.
- The site entry and operation and maintenance building have been relocated to the east.
- A temporary laydown area will be established to the north of the solar arrays, and two smaller laydown areas will be located to the south of the arrays.

The revised plant layout is shown on Figure 3.1 and in Appendix C.

3.2. Diversion of existing transmission line

The existing 22kV transmission line to be diverted around the boundary of the site is now proposed to be placed underground. This was originally assessed as being above ground in the EA.

Approximately 1.3 kilometres of the existing 22kV line needs to be diverted. Based on the planned diversion route, the length of the diverted line will be approximately 1.8 kilometres long.

To remove the existing 22kV line, in accordance with Essential Energy requirements, AGL will engage an accredited Level 1 Service Provider as contractor for the work. The contractor will first remove the wires from the poles. The contractor will then remove the poles. The poles will be transported to the Essential Energy Broken Hill Depot and will be disposed of in accordance with Essential Energy's waste management procedures.

Installing the 22kV line underground will reduce the visual impact of the plant relative to an aboveground power line. Installing the line underground will also improve construction and operational safety by removing the risk of vehicle collisions with poles or overhead wires. Finally, installing the line underground will eliminate the potential for shading of the PV modules which could reduce plant output.

Trenching will be required along the proposed underground transmission line route. The route originally assessed in the EA for the aboveground line remains the same. The trench will be approximately 800mm deep by 600mm wide. A sand bedding will be placed under the cabling. Once the cables are installed, the cables will be covered by a layer of sand and the trench backfilled with existing fill. The cable will be mechanically protected in accordance with AS/NZS 3000.

A small amount of vegetation will be cleared during construction of the underground trench. As discussed in Section 2.3.2, the clearing required for the underground transmission line has been

included in the total vegetation clearing estimate for the project. This clearing estimate assumes a disturbance corridor width of 5 metres along a total length of approximately 1.8 kilometres based on preliminary design.

No impact will occur to any threatened or significant ecological communities or habitats as a result of trenching. During clearing and trenching, vegetation matter and topsoil will be stockpiled separately to subsurface soil. This material will be stockpiled within the disturbance corridor and will be re-used to refill the trench line following the installation of the transmission line. Topsoil and vegetation matter will be re-spread across the disturbed surface to enable native vegetation to re-establish. To minimise the potential for fauna to become trapped within the trench, the trench will be progressively back-filled as the transmission line is installed. All open trenches will be inspected twice daily to remove any fauna that may become trapped.

Clearing, spoil management and fauna management procedures will be detailed in the Construction Environmental Management Plan (CEMP). Commitments EM3, FF5 and FF8 address the requirements for a CEMP, vegetation clearing procedures and re-vegetation activities for disturbed areas, respectively.

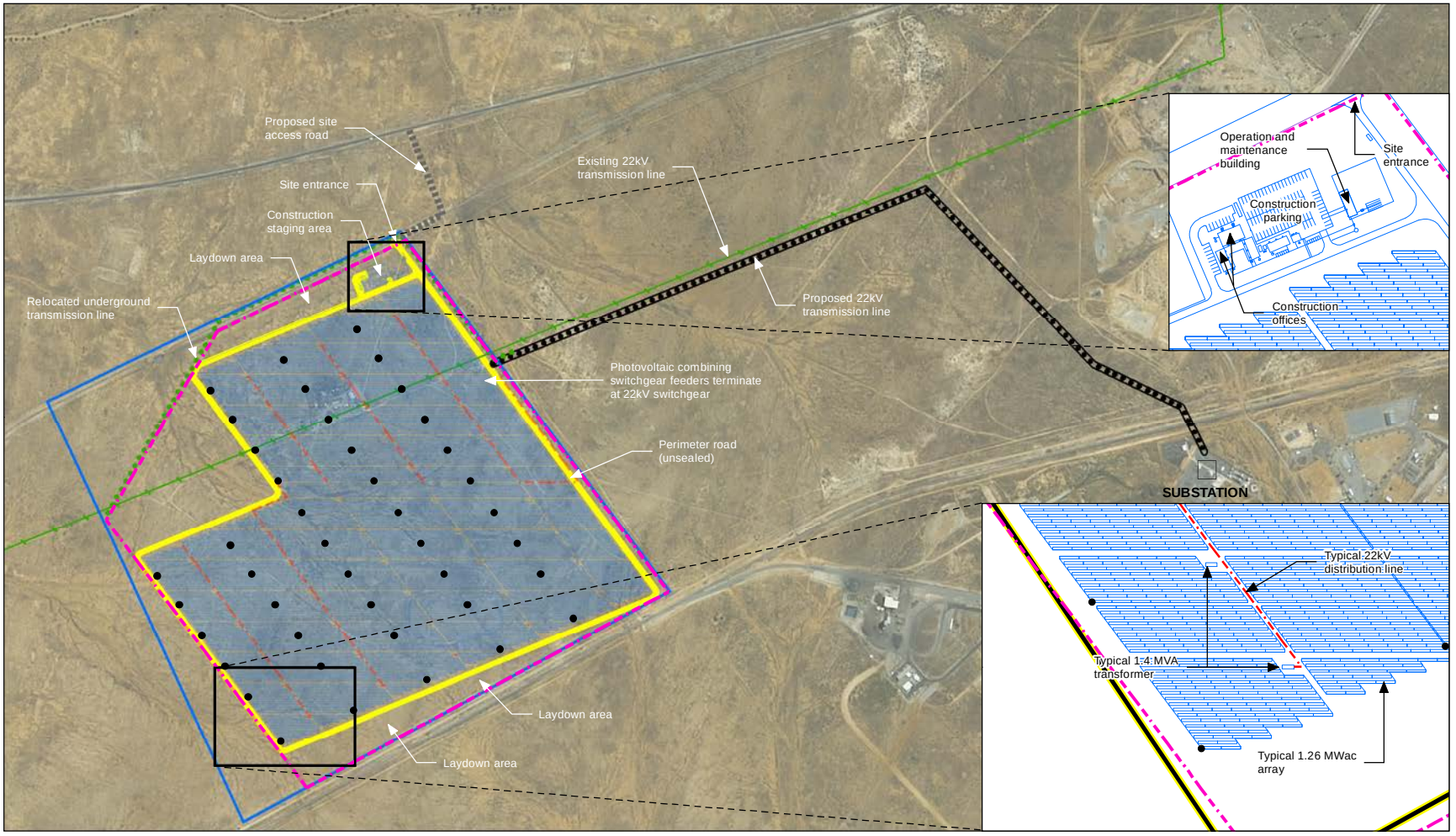
One artefact identified during the cultural heritage survey (BHS-12) could potentially be impacted by installation of the underground trench, subject to final project design of the underground transmission line alignment. If this artefact will be impacted, the proponent will relocate or salvage the artefact in accordance with the Aboriginal Heritage Management Plan, and in consultation with Aboriginal stakeholders, pursuant to commitment IH1.

Trenching activities may uncover buried Aboriginal sites not previously identified at the site. The Aboriginal Heritage Management Plan will detail the necessary procedures to manage potential impacts on previously unidentified heritage sites and objects, pursuant to commitment IH2.

3.3. Implication of project changes

The proposed changes are considered minor and will reduce the environmental impact of the project. In particular:

- The vegetation clearing estimate has been revised from 149.3 ha to 140.4 ha. No threatened or significant ecological communities or habitats occur within the plant site.
- Visual impact will be reduced by installing the diverted 22kV line underground instead of aboveground. Also, construction and operational safety will be improved by reducing the potential for vehicle collisions with poles and overhead wires.



Indicative site boundary
Fence line
Proposed transmission line relocation

Proposed transmission line easement
Perimeter road (unsealed)

Total area encompassed within perimeter road is 125ha.
Total area encompassed within fence line is 170ha

GDA 1994 | MGA Zone 54

0 800
Metres

Figure 3-1 Indicative project layout (subject to detailed design)

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Spatial Team - Prepared by : SS
Checked by : JC & ABS

4. Revised Environmental Management Measures

As a result of the submissions, a number of changes have been made to the Statement of Commitments as follows:

4.1. New Commitments

The following new commitments are proposed:

FF4: The Construction Environmental Management Plan and the Operation Environment Management Plan will include monitoring requirements for the raptor nest located near to the project site. The monitoring requirements will be prepared in consultation with OEH.

FF5: The site CEMP will specify management procedures for vegetation clearing and details for an ecologist to undertake a pre-clearing survey and to be present during all clearing activities.

EM3: A CEMP and an OEMP will be prepared for the site in consultation with the relevant authorities including the NSW Office of Water, OEH and RMS.

TT1: 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.

4.2. Modified Commitments

The following commitments have been modified based upon the responses made to submissions. The numbering refers to the publically exhibited EA. Minor amendments have been made to clarify a number of the remaining commitments.

FF6 (renumbered to FF8): Site restoration and re-vegetation activities will be undertaken during and after construction. All re-vegetation activities will be undertaken using locally endemic native species.

FF8 (renumbered to FF10): An Offset Management Strategy will be developed, including an Offset Management and Rehabilitation Plan, in consultation with OEH. The Strategy is to include:

- *Details on the area of the offset.*
- *Vegetation communities present and their current condition.*
- *Tenure of the land within the offset.*
- *Identification of a mechanism that protects the area in perpetuity.*
- *Identification and costing of management issues, including fencing and weed/feral animal control.*

- *Monitoring details to determine the effectiveness of the management actions.*

The Offset Management Strategy will be prepared in consultation with the agencies responsible for the management of the Willyama Common and will consider the cumulative impacts of clearing in the Willyama Common for the transmission line.

IH1: The proponent will consult with Aboriginal stakeholders regarding management of the 14 Aboriginal heritage sites recorded during the site survey. An Aboriginal Heritage Management Plan (AHMP) will be developed in consultation with these stakeholders and OEH to specify how the sites will be protected in-situ, relocated or salvaged.

IH2: Protocols will be developed to manage and protect Aboriginal artefacts or suspected human remains which may be encountered during construction. These protocols will be specified in the AHMP and may include stopping works in the vicinity of the find, notification of relevant stakeholders and implementation of an appropriate management strategy.

EM2: A construction environmental management plan (CEMP) will be prepared and implemented before the start of any construction activities. The CEMP will include details on the Aboriginal Heritage Management Plan, which will be finalised and implemented prior to the commencement of construction of the solar plant.

AQ1: During construction and operation, all exposed surfaces will be monitored for dust generation and appropriate dust suppression measures, such as watering, re-vegetation or application of environmentally acceptable dust suppressant chemicals, will be implemented as required.

TT2 (renumbered to TT3): A 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.*
- *Origin, number, size and frequency of vehicles accessing/exiting the site.*
- *Speed limits and directions of travel on the access roads within the site.*
- *Loads, weights and lengths of haulage and construction related vehicles.*
- *Scheduling of haulage vehicle movements to minimise convoy length and platoons.*
- *Traffic control requirements, including requirements for signage, barriers and traffic control personnel.*
- *The management and coordination of vehicle movements to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables.*
- *Details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS supplements.*

V7: In the event that glare from the solar plant is evident from a public road and causes a nuisance, distraction and/or hazard to motorists, the proponent shall immediately implement further glare mitigation measures.

4.3. Final Statement of Commitments

The final Statement of Commitments for the project is presented in Table 4-1.

Table 4-1 Statement of Commitments - Final

Objective	Reference	Commitment	Project phase
Environmental management			
Compliance and continuous improvement in environmental management	EM1	The head contractor for the project will have an environmental management system, including a performance and compliance auditing program.	Construction
Minimise impact of construction and operation on surrounding area	EM2	A Construction Environmental Management Plan (CEMP) will be prepared and implemented before the start of any construction activities. The CEMP will include details on the Aboriginal Heritage Management Plan, which will be finalised and implemented prior to the commencement of construction of the solar plant.	Pre-construction & construction
	EM3	A CEMP and an Operation Environmental Management Plan (OEMP) will be prepared for the site in consultation with the relevant authorities including the NSW Office of Water, OEH and RMS.	Pre-construction, construction & operation
Community consultation			
Stakeholders and the community are kept well informed about the project	CC1	A community consultation plan will be prepared and implemented. The plan will include a project phone number, e-mail and website for community input, a complaints handling procedure, and procedures for targeted consultation with affected stakeholders.	Pre-construction & construction
Visual impacts			
Minimise potential for adverse visual impacts during construction	V1	Vegetation removal will be avoided as far as practicable during construction. Any native vegetation near the outside edge of the solar PV plant site boundary will be cordoned off to minimise the risk of accidental disturbance.	Construction
	V2	Vehicles will remain on designated paths during construction to avoid degradation of the landscape.	Construction
	V3	Construction equipment and infrastructure will be demobilised from site as soon as practicable and all unnecessary project flagging and signage will be removed and disposed of at the completion of construction.	Construction
Minimise long-term visual impacts on the landscape	V4	Plantings of locally indigenous, shrubby vegetation will be provided along the north eastern and part of the north western boundary of the solar PV plant site to mitigate the visual impacts on views to The Pinnacles from the Barrier Highway, Silverton Road and Magazine Way. Plant species will be selected so as not to block views of The Pinnacles.	Construction & operation

Objective	Reference	Commitment	Project phase
	V5	Access tracks will be constructed of locally sourced gravel (to the extent required) that matches the colour of the existing site surface as far as practicable.	Construction & operation
	V6	Underground cabling will be used where practical. The colour of aboveground ancillary electrical equipment associated with the solar PV plant will be selected to best integrate with the surrounding landscape, with preference given to earthy tones such as pale green and pale brown.	Pre-construction, construction & operation
Minimise potential glare impacts	V7	In the event that glare from the solar plant is evident from a public road and causes a nuisance, distraction and/or hazard to motorists, the proponent shall immediately implement further glare mitigation measures.	Construction & operation
Noise impacts			
Minimise potential construction noise impacts on sensitive receivers	N1	Although construction noise impacts are unlikely, identified sensitive receivers in the vicinity of the project site are to be given adequate prior notice of the construction program, kept informed throughout the construction period, and provided with a name and contact number for construction noise information and complaints. Any noise complaints will be dealt with through the standard complaints management procedure identified in the community consultation plan.	Construction
	N2	Construction noise and vibration will be minimised as far as practical through the implementation of all feasible and reasonable measures. These measures will be specified within a Construction Noise and Vibration Management Plan (CNVMP). The CNVMP will also include project-specific objectives and protocols for management of construction noise.	Construction
	N3	Construction activities will take place during standard working hours (7.00am to 6.00pm Monday to Friday, 8.00am to 1.00pm Saturday and no work on Sunday or public holidays). Any work outside of these hours will be undertaken in accordance with the Interim Construction Noise Guideline (OEH, 2009). The CNVMP will specify protocols for notification of potentially affected receivers for out-of-hours work.	Construction
	N4	Where feasible, the proponent will conduct noisy construction activities in consultation with sensitive receivers.	Construction
	N5	Construction equipment and methodologies will be selected in consideration of the need to minimise noise levels where feasible and reasonable.	Construction

Objective	Reference	Commitment	Project phase
Flora and fauna			
Minimise clearing of native vegetation and habitat	FF1	Clearing of native vegetation will be restricted to the minimum area necessary for construction. Clearing boundaries will be specified within the CEMP and delineated on site with appropriate boundary or exclusion fencing.	Pre-construction & construction
Minimise potential impacts on fauna during construction	FF2	Vehicle speed limits will be enforced along internal access roads to minimise the incidence of wildlife mortality from construction and operation vehicles.	Construction & operation
	FF3	A buffer zone of 500 metres in radius will be placed around the raptor nest site should it still be present at time of construction. No construction vehicles or personnel will enter this restricted area unless assessing the presence of this species.	Construction
	FF4	The CEMP and the OEMP will include monitoring requirements for the raptor nest located near to the project site. The monitoring requirements will be prepared in consultation with OEH.	Construction
	FF5	The site CEMP will specify management procedures for vegetation clearing and details for an ecologist to undertake a pre-clearing survey and to be present during all clearing activities.	Construction
	FF6	Appropriate waste management practices will be followed to prevent attracting or encouraging feral animals to the site during the construction period.	Construction
Restore and re-vegetate the project site as far as practical to enhance its habitat value and prevent long term degradation	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.	Construction & operation
	FF8	Site restoration and re-vegetation activities will be undertaken during and after construction. All re-vegetation activities will be undertaken using locally endemic native species.	Construction & operation
	FF9	Appropriate weed management strategies will be implemented during construction and operation.	Construction & operation

Objective	Reference	Commitment	Project phase
	FF10	An Offset Management Strategy will be developed, including an Offset Management and Rehabilitation Plan, in consultation with OEH. The Strategy is to include: ■ Details on the area of the offset. ■ Vegetation communities present and their current condition. ■ Tenure of the land within the offset. ■ Identification of a mechanism that protects the area in perpetuity. ■ Identification and costing of management issues, including fencing and weed/feral animal control. ■ Monitoring details to determine the effectiveness of the management actions. The Offset Management Strategy will be prepared in consultation with the agencies responsible for the management of the Willyama Common and will consider the cumulative impacts of clearing in the Willyama Common for the transmission line.	Pre-construction
Aboriginal heritage			
Manage impacts on known Aboriginal artefacts recorded within the project site	IH1	The proponent will consult with Aboriginal stakeholders regarding management of the 14 Aboriginal heritage sites recorded during the site survey. An Aboriginal Heritage Management Plan (AHMP) will be developed in consultation with these stakeholders and OEH to specify how the sites will be protected in-situ, relocated or salvaged.	Pre-construction & construction
Minimise impacts on any previously unidentified Aboriginal heritage sites and objects	IH2	Protocols will be developed to manage and protect Aboriginal artefacts or suspected human remains which may be encountered during construction. These protocols will be specified in the AHMP and may include stopping works in the vicinity of the find, notification of relevant stakeholders and implementation of an appropriate management strategy.	Pre-construction & construction
	IH3	All construction personnel will receive training in the management of Aboriginal artefacts and objects, including legal obligations, the application of protocols, and the recognition of artefacts.	Construction
Traffic and transport			
Provide safe access to the project site from the Barrier Highway	TT1	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.	Pre-construction

Objective	Reference	Commitment	Project phase
	TT2	The existing site access road off the Barrier Highway and the associated intersection will be upgraded in accordance with RMS standards to accommodate construction traffic and on-going maintenance access.	Pre-construction
Minimise impacts on users of local roads and the Barrier Highway during construction	TT3	A 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. ■ Origin, number, size and frequency of vehicles accessing/exiting the site. ■ Speed limits and directions of travel on the access roads within the site. ■ Loads, weights and lengths of haulage and construction related vehicles. ■ Scheduling of haulage vehicle movements to minimise convoy length and platoons. ■ Traffic control requirements, including requirements for signage, barriers and traffic control personnel. ■ The management and coordination of vehicle movements to the site and measures to limit disruption to other motorists, emergency vehicles and school bus timetables. ■ Details of intersection improvement works in accordance with Austroads Guide to Road Design 2010 and RMS supplements.	Pre-construction & construction
Manage and rectify any impacts on road infrastructure	TT4	A road condition survey will be undertaken before construction to determine the potential impacts on the structural integrity of road infrastructure. The proponent will prepare a Traffic Management Plan in consultation with Broken Hill City Council and the RMS. This plan will set out the requirements for road management and monitoring.	Pre-construction & construction
Hazards and risks			
Minimise risk of exposure to EMFs	HR1	The proposed transmission line route has been selected to avoid EMF impacts on sensitive receivers.	Pre-construction
Minimise bushfire risks	HR2	An appropriate Asset Protection Zone will be maintained around the solar PV plant and transmission line.	Construction & operation

Objective	Reference	Commitment	Project phase
Minimise risks associated with use and storage of chemicals during construction	HR3	Any dangerous goods or hazardous materials kept at the construction site will be stored in a securely bunded area of sufficient containment capacity.	Construction & operation
	HR4	Where dangerous goods or hazardous materials are to be stored on the construction site, an effective spill kit will be available for use at all times. Any accidental spills will be contained and cleaned up immediately.	Construction
	HR5	Major plant and equipment will be re-fuelled either off site or by a mobile mini-fuel tanker with a spill procedure and spill kit.	Construction
	HR6	Transport of dangerous goods or hazardous materials will be undertaken by an appropriately licensed contractor.	Construction
	HR7	The proponent will develop a Risk Register to identify potential incidents that may occur during construction and the appropriate mitigation procedures.	Pre-construction & construction
Water management (water supply, water quality and waterways)			
Minimise potential for soil erosion and off-site transport of eroded sediments to waterways	WM1	Appropriate erosion and sediment control measures, consistent with the guidelines of the 'Blue Book' (Landcom, 2006), will be established before any clearing, excavation or ground disturbance begins and will be maintained in effective working order until the works have been completed and the affected ground surfaces stabilised.	Construction
	WM2	The area of soil exposure/ disturbance will be kept to the minimum amount necessary.	Construction
	WM3	Stockpiles of spoil, fill or erodible material will not be placed in or near watercourses or drainage lines.	Construction
	WM4	Construction traffic will be confined to existing established roads and access tracks. During construction, the site access junction with the Barrier Highway will be monitored for build up of soil or debris. Any soil or debris tracked onto the road will be removed at the end of each work day and disposed of appropriately.	Construction
	WM5	Disturbed surfaces will be stabilised and restored as soon as possible using appropriate stabilisation and re-vegetation measures. The plants used for site restoration will comprise native species endemic to the project site and suitable for the site conditions, taking into account soils, climate and shading.	Construction

Objective	Reference	Commitment	Project phase
Minimise risks associated with use of chemicals during construction	WM6	To avoid accidental contamination of receiving waterways with chemicals or fuels, the commitments identified for *Hazards and risks* (above) will be adhered to.	Construction
Land use			
Minimise general land use impacts	L1	Nearby landowners or leaseholders will be informed of the construction schedule and scope of works prior to construction.	Pre-construction
	L2	The NSW Department of Primary Industries and the affected leaseholder will be consulted regarding alteration of the lease conditions at the site.	Pre-construction
	L3	Easements and associated land use restrictions will be identified on property titles.	Pre-construction
	L4	Access to properties surrounding the construction site will not be impeded by construction activities.	Construction
Minimise impacts on future mining exploration	L5	The proponent will consult with current mining exploration and extraction licence and lease holders.	Pre-construction
Non-Indigenous heritage			
Minimise impacts on any previously unidentified non-Indigenous heritage items	H1	Protocols will be developed to manage and protect artefacts or suspected human remains which may be encountered during construction. The protocols may, as required, include stopping all works in the vicinity of the find, notification of relevant stakeholders and implementation of an appropriate management strategy.	Pre-construction & construction
	H2	All construction personnel will receive training in the management of non-Indigenous relics, including legal obligations, the application of protocols, and the recognition of relics.	Construction
Socio-economic issues			
Minimise potential impacts on the Broken Hill community	S1	Advance notification will be given to nearby residents (including any potentially affected property owners and occupants) on the construction schedule, construction works and access arrangements.	Pre-construction & construction
Geology and soils			
Minimise potential for soil erosion	GS1	The commitments identified for *Water management* above will address the risks of soil erosion. No additional actions are required for geology and soils.	Pre-construction & construction

Objective	Reference	Commitment	Project phase
Air quality and climate			
Minimise dust generation	AQ1	During construction and operation, all exposed surfaces will be monitored for dust generation, and appropriate dust suppression measures, such as watering, re-vegetation or application of environmentally acceptable dust suppressant chemicals will be implemented as required.	Construction
	AQ2	The access road connecting the Barrier Highway road verge to the project site will be constructed with packed gravel as required to minimise dust and soil impacts.	Construction
	AQ3	Disturbed surfaces will be stabilised and restored as soon as possible using appropriate stabilisation and re-vegetation measures.	Construction
	AQ4	Construction vehicles/machinery will not be left running or idling when not in use.	Construction
	AQ5	Construction plant will be fitted with appropriate emission controls and will be maintained to reduce exhaust emissions.	Construction
	AQ6	Vehicular loads of spoil and other erodible material will be suitably covered during transport.	Construction
	AQ7	No burning of vegetation or waste material will take place on the construction site.	Construction
Waste management			
Minimise waste generation and disposal	W1	All works will be conducted in accordance with the waste management hierarchy established by the *Waste Avoidance and Resource Recovery Act 2001.*	Construction
	W2	Excavated spoil will be re-used on the project site for fill or landscaping, where possible.	Construction
	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.	Construction
Ensure appropriate disposal of wastes	W4	Excess spoil or green waste which cannot be reused on site will be transported to the Broken Hill City Council Recycling facility.	Construction
	W5	Excess materials that are not re-usable or recyclable will be disposed of at the Broken Hill City Council Waste Depot.	Construction
	W6	Transport of wastes to recycling or waste disposal facilities will be undertaken by an appropriately licensed waste transporter.	Construction

Objective	Reference	Commitment	Project phase
	W7	Waste oils, greases and chemicals generated during construction will be stored in appropriately bunded areas prior to their removal for recycling or disposal.	Construction
	W8	Soils contaminated through fuel or chemical spills will be excavated and transported to a licensed waste facility and the resulting excavations will be backfilled with clean soil.	Construction
	W9	Invasive weeds will be collected in plastic bags to the extent possible and disposed of at a licensed green waste disposal facility or landfill.	Construction
	W10	General wastes will be segregated into recyclable and non-recyclable streams through the provision of appropriate bins on the construction site.	Construction