Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided that sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
    - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
    - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.
- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.

- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act). If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referral Business Entry Point (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from http://www.gbrmpa.gov.au/ or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379
Townsville QLD 4810
AUSTRALIA

Phone: + 61 7 4750 0700
Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

Do I have to pay for my referral or assessment / what are the fees?

Currently the department does not impose fees for environmental impact assessments referred and assessed under the EPBC Act. However, new fees are proposed as part of cost recovery reforms to the EPBC Act from 1 December 2012. Final cost recovery arrangements will be subject to an amending Bill being passed by Parliament and the making of regulations. Fees for environmental impact assessments are proposed to apply to:

- all proposed actions referred after 8 May 2012 that are still undergoing assessment, decision on approval or that may be subject to post approval management plans after 1 December 2012 (fees will only apply to the work undertaken by the department after 1 December 2012); and
- all referrals on or after 1 December 2012.

For projects that are referred after 8 May 2012, that may be subject to fees, the department will inform proponents of their liability for potential fees prior to the introduction of cost recovery arrangements on 1 December 2012. Further details on the proposed cost recovery arrangements can be found here http://www.environment.gov.au/epbc/publications/consultation-draft-cost-recovery.html.

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in green text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below two megabytes (2mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referral Business Entry Point for advice. Attachments larger than two megabytes (2mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I submit a referral?

Referrals may be submitted by mail, fax or email.

Mail to:

Referral Business Entry Point
Environment Assessment Branch
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are appreciated.

Fax to: 02 6274 1789

- Faxed documents must be of sufficiently clear quality to be scanned into electronic format.
- Address the fax to the mailing address, and clearly mark it as a 'Referral under the EPBC Act'.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have **a** significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have **a** significant impact IF undertaken in **a** particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have **a** significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park,"* p.2, for more details).

For more information

- call the Department of Sustainability, Environment, Water, Populations and Communities Community Information Unit on 1800 803 772 or
- visit the web site www.environment.gov.au/epbc

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title: Broken Hill Solar Plant

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 Short description

Use 2 or 3 sentences to uniquely identify the proposed action and its location.

AGL PV Solar Developments Pty Limited, a wholly owned subsidiary of AGL Energy Limited (AGL) is proposing to construct and operate a solar photovoltaic (PV) plant at Broken Hill in far western New South Wales called the Broken Hill Solar Plant Project (Proposed Action). The Proposed Action is part of the Solar Flagships Program.

The Proposed Action incorporates the following key elements:

- Construction and operation of a nominal 50 MW solar PV plant located about five kilometres south west of Broken Hill City;
- Construction and operation of a new 22kV double circuit transmission line, approximately 2.7 kilometres long, connecting the solar PV plant to an existing TransGrid substation at Broken Hill with a 30 metre wide easement;
- Realignment of an existing 22kV transmission line; and
- Decommissioning after approximately 30 years of operation including removal of PV modules, brackets and posts, electrical cabling and equipment, and all buildings and fencing.

The proposed solar PV plant would occupy approximately 200 hectares of land bounded by the Barrier Highway to the north and the Peterborough-Broken Hill rail line to the south (Figure 1).

The new 22kV transmission line would follow an existing 30 metre wide easement that parallels an existing transmission line and maintenance track. It would be constructed on concrete poles approximately 14 metres high and spaced approximately 100 metres apart.

Main access to the solar PV plant would be via an existing unsealed road from the Barrier Highway with a minimum width of 8 metres. Maintenance access to the transmission line would be via an existing unsealed track.

The Proposed Action does not include survey, fencing, building/road dilapidation surveys, geotechnical surveys and preliminary works.

1.2 Latitude and longitude

The solar PV plant is sited within an area bounded by the following ten coordinate points:

location point	Latitude degrees minutes seconds	Longitude degrees minutes seconds
P1.	-31.9875	141.384
P2.	-31.9874	141.3877
P3.	-31.9819	141.3881
P4.	-31.9805	141.3914
P5.	-31.9806	141.3928
P6.	-31.9886	141.3996
P7.	-31.9902	141.3994
P8.	-31.9946	141.3899
P9.	-31.9946	141.389
P10.	-31.9885	141.384

The new transmission line is linear in nature and its route is defined by the following five points:

location point	Latitude degrees minutes seconds	Longitude degrees minutes seconds
T1.	-31.9831	141.3955
T2.	-31.9781	141.4099
T3.	-31.9831	141.4155
T4.	-31.9842	141.4184
T5.	-31.9855	141.4192

The existing main access road is also linear in nature and its route is defined by the following three points:

location point	Latitude degrees minutes seconds	Longitude degrees minutes seconds
A1.	-31.9765	141.3927
A2.	-31.9789	141.3938
A3.	-31.9795	141.3924

The realignment of the existing 22kV transmission line is defined by the following four points:

location point	Latitude degrees minutes seconds	Longitude degrees minutes seconds
R1.	-31.9876	141.3831
R2.	-31.9823	141.3863
R3.	-31.9797	141.3924
R4.	-31.983	141.3953

1.3 Locality and property description

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

The Broken Hill Solar Plant Project is to be located in far western NSW, approximately five kilometres south west of the city of Broken Hill.

The proposed solar PV plant site is classed as Crown land and is located within an unincorporated area administered by the NSW Department of Primary Industries (Catchments and Lands). The site is located between the Barrier Highway to the north and the Peterborough – Broken Hill rail line to the south, wholly within Lot 6806 Plan 823918. Approximately 200 hectares of land would be required for the proposed nominal 50 MW solar PV plant.

The site comprises a cleared, relatively flat area with numerous unsealed access tracks scattered throughout. There is currently one residence located in the northern part of the property with several other sheds scattered nearby. This residence will be relocated as part of plant construction. Main access to the plant will be from the Barrier Highway following the route of an existing unsealed road.

Along with the solar PV plant, the Proposed Action would also include the installation and operation of a double circuit 22kV overhead transmission line, approximately 2.7 kilometres long, to connect the solar PV plant to the TransGrid Broken Hill substation. A 30 metre easement would be established to accommodate construction and maintenance of the proposed transmission line. The proposed transmission line would be located within the Broken Hill local government area and would traverse four land holdings, including the Peterborough – Broken Hill rail line and its associated easement.

The existing 22kV transmission line traversing the proposed solar PV plant site would be realigned as part of site works.

The locations of the plant site, transmission line, realigned transmission line, access roads and the nearest residence are shown in Figure 1. Photographs of the site are included in Figure 4 and vegetation communities in the study area are included in Figure 5.

1.4	Size of the development footprint or work area (hectares)	200 hectares total site area. 140 hectares (solar PV plant) 8.1 hectares (transmission line)
1.5	Street address of the site	The Proposed Action is located between the Barrier Highway to the north and the Peterborough – Broken Hill rail line to the south.

1.6 Lot description

Describe the lot numbers and title description, if known.

The proposed solar PV plant site and 22kV transmission line realignment is located wholly within Lot 6806 DP 823918.

The proposed transmission line (and existing maintenance track) would traverse four land holdings, including the Peterborough – Broken Hill rail line and its associated easement. Affected land parcels include:

- Willyama Common Trust Crown Land, Lot 6667 DP 822054;
- Willyama Common Trust Crown Land, no Lot and DP;
- Australian Rail Track Corporation Ltd, Lot 1 DP 533250; and
- TransGrid, Lot 2 DP 1102040.

The proposed main access road from the Barrier Highway would be the existing unsealed road that is located within Crown land.

1.7 Local Government Area and Council contact (if known)

If the project is subject to local government planning approval, provide the name of the relevant council contact officer.

The Proposed Action is located within the Broken Hill Local Government Authority (LGA). However as the Proposed Action would be located in an unincorporated area administered by the NSW Department of Primary Industries (Catchments and Lands), local environmental planning instruments are not applicable to this area. Nevertheless the Broken Hill City Council Rural Development Control Plan's development guidelines were considered during the planning and assessment of the transmission line component of the Proposed Action.

Correspondence has been sent to the Broken Hill City Council in regards to the Proposed Action. The relevant council contact officer and contact details are:

Name: Frank Zaknich, General Manager
Telephone: (08) 8080 3300
Email: council@brokenhill.nsw.gov.au

1.8 Time frame

Specify the time frame in which the action will be taken including the estimated start date of construction/operation.

Construction of the Proposed Action would commence in mid-2014, subject to the granting of project approval, grid connections and discussions with stakeholders. Construction would be anticipated to take approximately 17 months. The Proposed Action is expected to be commissioned by late 2015. The Proposed Action is anticipated to operate for approximately 30 years. Following this, the Proposed Action would be decommissioned.

1.9	Alternatives to proposed action Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?		No
		X	Yes, you must also complete section 2.2
1.10	Alternative time frames etc Does the proposed action include alternative time frames, locations or activities?		No
		X	Only alternative locations were considered. These locations are discussed further in Section 2.3
1.11	State assessment Is the action subject to a state or territory environmental impact assessment?		No
		X	Yes, you must also complete Section 2.5

1.12	Component of larger action Is the proposed action a component of a larger action?	X	No
			Yes, you must also complete Section 2.7
1.13	Related actions/proposals Is the proposed action related to other actions or proposals in the region (if known)?	X	No
			Yes, provide details:
1.14	Has the person proposing to take the action received any Australian Government grant funding to undertake this project?		No
		X	Yes, provide details: The Australian Government has committed $129.7 million to support the implementation of the Broken Hill Solar Plant project and the Nyngan Solar Plant project as part of the Solar Flagships Program.
1.15	Great Barrier Reef Marine Park Is the proposed action inside the Great Barrier Reef Marine Park?	X	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

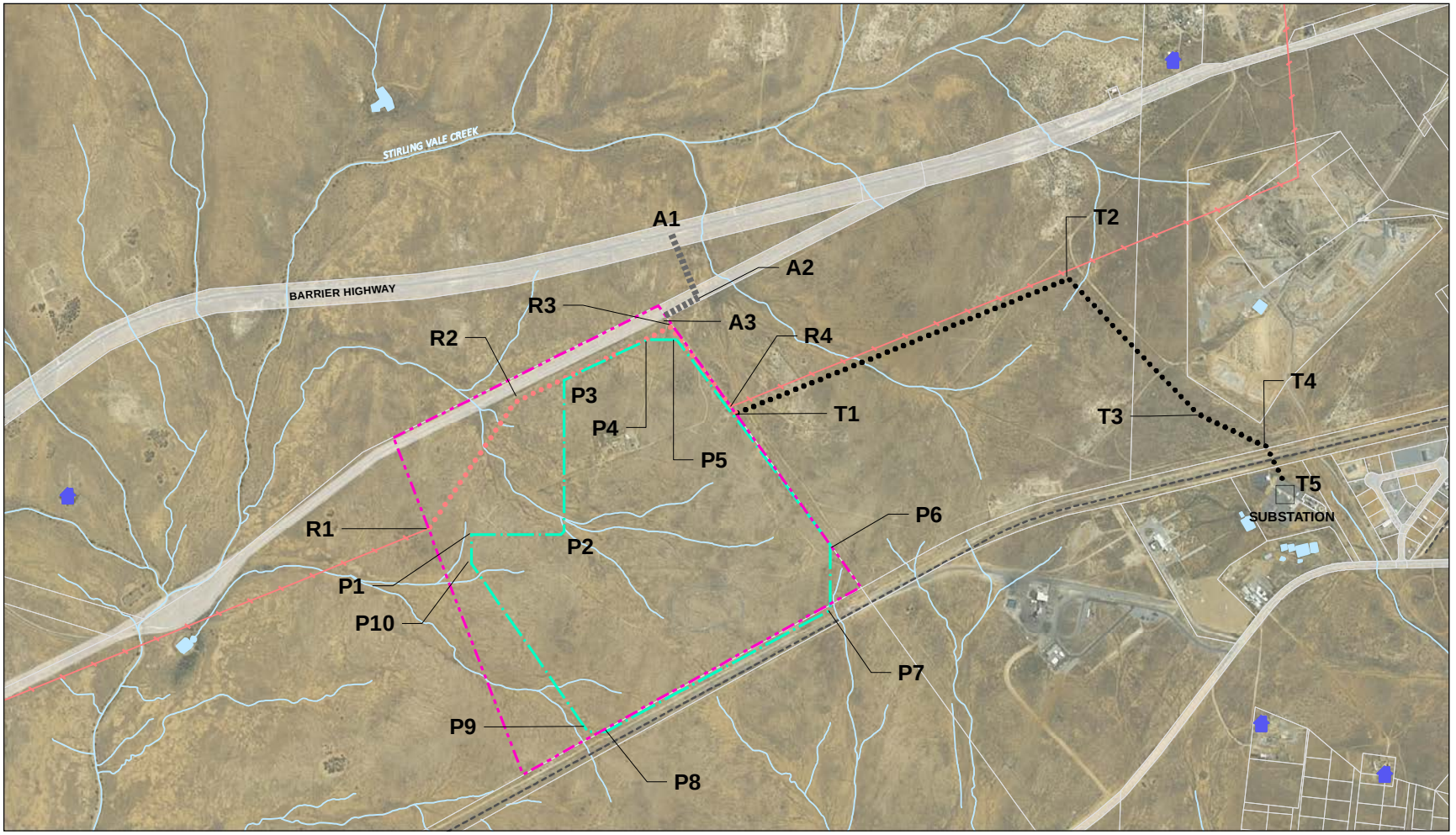

Figure 1 Site layout and location points

SINCLAIR KNIGHT MERZ

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Spatial Team - Prepared by : JC
Checked by : JL

2 Detailed description of proposed action

NOTE: It is important that the description is complete and includes all components and activities associated with the action. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in section 2.7.

2.1 Description of proposed action

This should be a detailed description outlining all activities and aspects of the proposed action and should reference figures and/or attachments, as appropriate.

The Broken Hill Solar Plant Project is part of the Solar Flagships program which would assist the Australian Government to achieve its Renewable Energy Target (RET). The RET calls for 20 per cent of Australia's electricity supply to be derived from renewable sources by 2020.The main drivers for the Solar Flagships Program and its component solar projects include the need to:

- Demonstrate that large scale solar power plants can be constructed and operated within major electricity grids in Australia;
- Optimise the business models for constructing, generating and wholesaling electricity generated from large scale solar power plants;
- Develop the solar power industry in Australia;
- Provide research infrastructure for solar power generation;
- Encourage regional development;
- Build initial infrastructure for further development of solar power;
- Develop Australian intellectual property and know-how in solar power; and
- Develop and share technical and economic knowledge of the operation of large scale solar power plants in a competitive energy market.

The construction and operation of the Proposed Action would comprise the following 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 22 kV double circuit transmission line approximately 2.7 kilometres long to connect the site to TransGrid's Broken Hill substation;
- Main access to the solar PV plant via an existing unsealed road from the Barrier Highway;
- Maintenance access to the proposed transmission line via an existing access track that occurs with the current 30 metre easement;
- Diversion of an existing 22 kV overhead line;
- 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 arrays;
- Marshalling switchgear to collect the power from multiple array blocks;
- Internal access tracks to allow for maintenance of the site;
- Perimeter security fencing and landscaping around the site;
- Site office and maintenance building; and
- Temporary infrastructure associated with site construction including the site compound and storage areas.

The proposed site layout is shown in Figure 1.

Decommissioning would occur after approximately 30 years of operation. Decommissioning would involve the removal of:

- PV modules;
- Brackets and posts;
- Cabling and all other electrical equipment; and
- All buildings and fencing.

Following this, the site would be revegetated as necessary to return it to its original state, as far as practicable.

Solar PV array

A PV cell is a semiconductor device that converts sunlight into electricity. Cells are combined to form a single module, which are then combined to create arrays. The array is the actual solar generation system that connects to the energy grid.

The modules are connected together in strings. These strings are then connected together to form arrays. This is required to provide a certain amount of voltage and current to the input of the inverters.

The PV modules would be supported on mounting frames consisting of vertical posts and horizontal rails. The modules would be mounted facing due north at a fixed tilt from a horizontal of 25 degrees.

The overall plant capacity would be rated at approximately 50 MW alternating current (AC). The plant would indicatively comprise 42 x 1.26 MW AC arrays, consisting of over 650,000 modules. Similar posts, racking and modules to the proposed works are shown in Figure 2 and a typical cross section of the PV array is provided in Figure 3.

Figure 2 Example of solar modules and racking tables

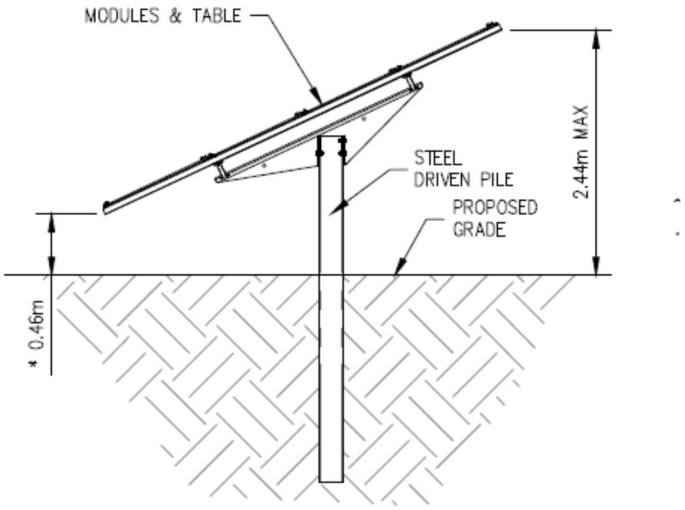

Figure 3 Typical cross section of the PV array

The PV mounting structure would comprise steel posts driven approximately 1.5 metres below ground using a pile driver. Module racking tables would be installed on vertical steel posts. Electrical cablings would be attached beneath the modules.

Inverters and transformers

An inverter is a device which converts direct current (DC) to alternating current (AC) that can then be fed into the grid network. The DC power produced by the panels would be converted by the inverters before being fed into a transformer. A transformer is an electrical device by which the AC of one voltage is changed to another AC voltage. The power from the transformers would then be fed into the electricity grid. A total of 42 transformers would be installed as part of the project.

There would be one inverter and one transformer installed per block on a pad-mounted kiosk. The transformer would feed into 22 kV reticulation cables that would be connected to combining switchgear installed in the project switchyard.

Electrical connections

A proposed double circuit 22 kV overhead transmission line would be required to connect the PV Plant to the existing TransGrid Broken Hill substation. The transmission line would be approximately 2.7 kilometres long and the proposed easement would be 30 metres wide. The poles would be approximately 14 metres high and approximately 100 metres apart.

Underground electrical cables would also be required to connect the PV panels to the inverters and the transformers, and then from the transformers to the combiner switchgear. All underground cabling would be installed in trenches, generally measuring approximately 800 mm deep by 600 mm wide. Sand bedding would be placed under the cabling. Once the cables are installed, the cables would be covered by a layer of sand and the trench backfilled with existing fill.

Fencing and landscaping

The Broken Hill Solar Plant would be enclosed by security fencing around the perimeter. The preferred fencing would include top and bottom rails and three barbed wires along the top and would be approximately 2,370 to 2,970 millimetres high. Landscaping would be undertaken around the site for visual amenity purposes. This would include restoration and planting of endemic native species. Where possible, green waste from construction would be mulched for re-use on site or ‘wind-rowed’ along the edges of the transmission line easement where possible.

Proposed access

Proposed access to the site is via an existing 8 metre wide unsealed access road from the Barrier Highway (see Figure 1). As this road would be an adequate width to accommodate construction vehicles and equipment, no widening is proposed. The surface of the unsealed road will be investigated during detailed engineering to determine whether the surface requires an upgrade. Consultation with RMS would be undertaken to identify the requirements for any turning lane or upgrade of the intersection with the Barrier Highway.

2.2 Alternatives to taking the proposed action

This should be a detailed description outlining any feasible alternatives to taking the proposed action (including not taking the action) that were considered but are not proposed (note, this is distinct from any proposed alternatives relating to location, time frames, or activities – see section 2.3).

The Broken Hill Solar Plant is proposed as part of the Federal Government's Solar Flagships Program. Feasible alternatives to the provision of renewable energy have not been considered as the intent of the Program is to facilitate and support the development of solar PV plants in Australia.

The 'do nothing' option was not considered as a solar plant is necessary to help achieve the Renewable Energy Target commitment of deriving 20 per cent of Australia's electricity supply from renewable sources by 2020. Current projections by the Australian Energy Market Operator indicate that NSW will not experience a shortfall of electricity prior to 2021/22 (AEMO, 2012). There has been significant interest in generation as indicated by investment across the various sectors of electricity generation sources. A total of 13,192 MW has been publicly announced of which solar represents 600 MW (AEMO, 2012).The Broken Hill Solar Plant would contribute a nominal 50 MW.

2.3 Alternative locations, time frames or activities that form part of the referred action

If you have identified that the proposed action includes alternative time frames, locations or activities (in section 1.10) you must complete this section. Describe any alternatives related to the physical location of the action, time frames within which the action is to be taken and alternative methods or activities for undertaking the action. For each alternative location, time frame or activity identified, you must also complete (where relevant) the details in sections 1.2-1.9, 2.4-2.7, 3.3 and 4. Please note, if the action that you propose to take is determined to be a controlled action, any alternative locations, time frames or activities that are identified here may be subject to environmental assessment and a decision on whether to approve the alternative.

A number of alternative locations and layouts were considered during the development of this project. The alternative locations included:

- Broken Hill, NSW;
- Moree, NSW;
- Nyngan, NSW;
- Port Augusta, SA; and
- Mildura, VIC.

Broken Hill was considered a preferred location as it meets a number of essential site conditions. These include:

- Flat topography which enhances solar energy production potential and reduces construction costs and risks.
- No threatened ecological communities or significant wetlands, and unlikely to provide important habitat for threatened or migratory species.
- Currently more than one kilometre from the nearest residence and as such is unlikely to result in noise or visual impacts for the local community or adjacent land uses.

Alternative layouts and heights of the solar panels within the 200 hectare site have been considered as part of preliminary engineering design. This has included various orientations and panel heights of up to 10 metres. All alternatives have been considered unfavourable for several reasons, including unacceptable environmental effects, potential adverse effects to the implementation schedule and additional project costs.

The option of building a single large solar plant at one site versus smaller solar plants across multiple sites was considered. Two smaller sites were selected in NSW (Broken Hill and Nyngan) as the preferred option for delivering approximately 150 MW of renewable energy for the following reasons:

- Multiple small areas of land would limit significant environmental and community impacts as opposed to a large parcel of land.
- Local communities are likely to be more accepting of a relatively small solar PV project than a large solar PV project.
- Multiple small projects provide the opportunity to better manage increasing peak demands during summer.
- A geographic spread of sites would reduce the risks associated with unfavourable climatic conditions such as cloud cover.
- Job creation, skills transfer and economic development would occur in multiple locations, rather than one location.

No alternative time frames have been considered as the Proposed Action is required to meet the Renewable Energy Target by 2020.

2.4 Context, planning framework and state/local government requirements

Explain the context in which the action is proposed, including any relevant planning framework at the state and/or local government level (e.g. within scope of a management plan, planning initiative or policy framework). Describe any Commonwealth or state legislation or policies under which approvals are required or will be considered against.

AGL has been selected by the Australian Government as the successful proponent in the solar PV category of the Solar Flagships Program independent reassessment process. The Broken Hill Solar Plant Project will be one of two solar PV power stations built by AGL under the Solar Flagships Program, with the second project being constructed at Nyngan in central NSW. The Australian Government and NSW Government have committed funding to support project implementation.

On 12 November 2010, by order of the Minister for Planning, the Broken Hill Solar Plant was declared to be a project to which Part 3A of the NSW *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 under Part 3A of the EP&A Act were issued on 8 December 2010. While recent changes to the planning system have included the repeal of Part 3A, transitional provisions in the EP&A Act mean that projects that have received DGRs within the last two years will continue to be assessed in accordance with Part 3A provisions.

Section 75R(3) of the EP&A Act excludes the application of environmental planning instruments (other than SEPPS) to approved projects. While SEPPs apply to the carrying out of a project, they only apply to critical infrastructure projects (such as this project) to the extent that the provisions of the SEPP expressly provide that they apply to the particular project (section 75R(2)(b) of the EP&A Act). There are no SEPPs that expressly apply to the Broken Hill Solar Plant Project.

Under Section 75V of the EP&A Act, if the Broken Hill Solar Plant Project is granted approval under Part 3A of the EP&A Act, certain approvals, if necessary for carrying out the approved project, cannot be refused by the relevant approval authority and such approvals must be substantially consistent with the terms of the project approval.

Relevant NSW legislation against which the Proposed Action will be considered includes:

- *Protection of the Environment Operations Act 1997*;
- *Roads Act 1993*;
- *Native Vegetation Act 2003*;
- *Threatened Species Conservation Act 1996*;
- *National Parks and Wildlife Act 1974*;

- *Western Lands Act 1901; and*
- *Crown Lands Act 1989*.

Relevant Commonwealth legislation against which the Proposed Action will be considered includes the *Native Title Act 1993*, as there is a Native Title Claimant in the project area, being the Barkandji Traditional Owner.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If you have identified that the proposed action will be or has been subject to a state or territory environmental impact statement (in section 1.11) you must complete this section. Describe any environmental assessment of the relevant impacts of the project that has been, is being, or will be carried out under state or territory legislation. Specify the type and nature of the assessment, the relevant legislation and the current status of any assessments or approvals. Where possible, provide contact details for the state/territory assessment contact officer.

Describe or summarise any public consultation undertaken, or to be undertaken, during the assessment. Attach copies of relevant assessment documentation and outcomes of public consultations (if available).

On 12 November 2010, the Director, Infrastructure Projects under delegation from the NSW 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 EP&A Act applies. Therefore, the Proposed Action is subject to an environmental assessment as per the Director-General's requirements. The environmental assessment (EA) covers the following key issues:

- Visual impacts;
- Noise impacts;
- Flora and fauna;
- Indigenous heritage;
- Traffic and transport;
- Hazard and risks; and
- Water supply, water quality and waterways.

It also includes AGL's Draft Statement of Commitments for environmental impact mitigation and management.

The consultation process for the Proposed Action has been developed and implemented in accordance with the NSW Department of Planning & Infrastructure's Guidelines for Major Project Community Consultation. This has included the development of a Community Engagement Plan to support the environmental assessment and planning approvals process.

The consultation process to date has involved sending letters to relevant agencies and other key stakeholders. It has also included establishment and operation of a free-call 1800 number and project email address for community enquiries and complaints. Community engagement to date has included:

- Letters to the 13 adjoining neighbours and key stakeholders;
- Letters to all properties within a three kilometre radius of the site (approximately 330 properties);
- The 'Energy Cube', located in Broken Hill township from 13 – 15 September 2012; and
- Advertisement in the Barrier Daily Truth, promoting the 'Energy Cube'

The letters sent to agencies and key stakeholders provided information on the project and invited stakeholders to raise any issues or concerns. Responses were received from directly affected landholders, the Environment Protection Authority (formerly NSW Office of Environment and Heritage), Lower Murray Darling Catchment Management Authority, PlatSearch NL, Department of Primary Industries (Catchments and Lands) (formerly Land and Property Management Authority) and

Roads and Maritime Services (RMS, formerly Roads and Traffic Authority of NSW (RTA)). Landholders had no specific issues to raise in the environmental assessment.

Consultation will continue throughout the planning approval process and, should the Proposed Action proceed, throughout the detailed design and construction phases.

An EA has been prepared and reviewed by the NSW Department of Planning and Infrastructure. The EA was placed on public exhibition from 29 October 2012 and will end on 30 November 2012.

The assessment officer within the NSW Department of Planning and Infrastructure that is assigned to the Broken Hill Solar Plant Project is:

Name: Toby Philp
Telephone: (02) 9228 6343
Email: toby.philp@planning.nsw.gov.au

2.6 Public consultation (including with Indigenous stakeholders)

Your referral must include a description of any public consultation that has been, or is being, undertaken. Where Indigenous stakeholders are likely to be affected by your proposed action, your referral should describe any consultations undertaken with Indigenous stakeholders. Identify the relevant stakeholders and the status of consultations at the time of the referral. Where appropriate include copies of documents recording the outcomes of any consultations.

Consultation for the project was implemented in accordance with the NSW Department of Planning and Infrastructure's *Guidelines for Major Project Community Consultation* (DoP, 2007).

A letter was sent to the following agencies in March 2011 providing information about the project and an opportunity to raise any issues to be considered in the EA:

- Australian Rail Track Corporation (ARTC);
- Bemax Resources Limited;
- Broken Hill City Council;
- Lower Murray Darling Catchment Management Authority (CMA);
- Western CMA;
- Essential Energy (formerly Country Energy);
- Office of Environment and Heritage (formerly Department of Environment, Climate Change and Water (Environment Protection and Regulation));
- Lessee;
- Industry and Investment NSW;
- NSW Department of Primary Industries (DPI) (formerly Land & Property Management Authority);
- NSW Office of Water (DPI as of June 2011);
- Perilya Limited;
- PlatSearch NL;
- NSW Rural Fire Service;
- Roads and Maritime Services; and
- TransGrid.

All directly affected landowners and lessees were notified in writing within 14 days of the Project Application being lodged, in accordance with clause 8F(3)(c) of the *Environmental Planning and Assessment Regulation* 2000.

Three Registered Aboriginal Parties (RAPs) have participated in Aboriginal heritage assessments. These have included Mutawintji National Park Board of Management, Mutawintji Local Aboriginal Land Council and Broken Hill LALC. All RAPs have been given the opportunity to review and make comment on heritage survey findings and assessment reports. One response was received, noting that they had no further comment. No responses or feedback were received from the other parties.

AGL will continue to consult with the RAPs as the detailed design and construction of the Proposed Action progresses.

2.7 **A** staged development or component of **a** larger project

If you have identified that the proposed action is a component of a larger action (in section 1.12) you must complete this section. Provide information about the larger action and details of any interdependency between the stages/components and the larger action. You may also provide justification as to why you believe it is reasonable for the referred action to be considered separately from the larger proposal (eg. the referred action is 'stand-alone' and viable in its own right, there are separate responsibilities for component actions or approvals have been split in a similar way at the state or local government levels).

Not applicable. This Proposed Action is not a staged development or a component of a larger project.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest.

Your assessment of likely impacts should refer to the following resources (available from the Department's web site):

- specific values of individual World Heritage properties and National Heritage places and the ecological character of Ramsar wetlands;
- profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*; and
- associated sectoral and species policy statements available on the web site, as relevant.

Note that even if your proposal will not be taken in a World Heritage area, Ramsar wetland, Commonwealth marine area, the Great Barrier Reef Marine Park or on Commonwealth land, it could still impact upon these areas (for example, through downstream impacts). Consideration of likely impacts should include both direct and indirect impacts.

3.1 (a) World Heritage Properties

Description

A search of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool indicated that there were no World Heritage areas or items within the study area.

Nature and extent of likely impact

Address any impacts on the World Heritage values of any World Heritage property.

There are no World Heritage areas or items within sufficient distance to the Proposed Action for direct or indirect impacts to occur.

3.1 (b) National Heritage Places

Description

A search of the EPBC Act Protected Matters Search Tool indicated that there are no National Heritage areas or items within the study area.

Nature and extent of likely impact

Address any impacts on the National Heritage values of any National Heritage place.

There are no National Heritage areas or items within sufficient distance to the proposed for direct or indirect impacts to occur.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

The Proposed Action is located in the same catchment as Lake Pinaroo, which is a listed Ramsar Wetland.

Nature and extent of likely impact

Address any impacts on the ecological character of any Ramsar wetlands.

The Proposed Action is unlikely to affect Lake Pinaroo due to the nature of the Proposed Action and the 320 kilometre distance between the Proposed Action's site and the wetland. Offsite emissions and discharges are not proposed by the Proposed Action and therefore would not indirectly affect this Ramsar site.

3.1 (d) Listed threatened species and ecological communities

Description

An EPBC Act Protected Matters Search identified the following threatened species with potential to occur within a 10 kilometre buffer of the Proposed Action's site.

Listed Species	Status under EPBC Act	Type of Presence
Birds		
Thick-billed Grasswren (eastern) (*Amytornis textilis modestus*)	Vulnerable	Species/species habitat likely to occur in the area
Malleefowl (*Leipoa ocellata*)	Vulnerable	Species/species habitat likely to occur in the area
Australian Painted Snipe (*Rostratula australis*)	Vulnerable	Species/species habitat likely to occur in the area
Fish		
Murray Cod (*Maccullochella peelii)*	Vulnerable	Species/species habitat may occur in the area
Mammals		
South-eastern Long-eared Bat (*Nyctophilus corbeni*)	Vulnerable	Species/species habitat may occur in the area
Plants		
Needle Wattle, Purple-wood Wattle (*Acacia carneorum*)	Vulnerable	Species/species habitat likely to occur in the area

A Threatened Species Assessment was undertaken for the flora and fauna assessment (SKM 2012a). The species lists from the assessment are provided in Appendix A.

Nature and extent of likely impact

Address any impacts on the members of any listened threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat.

SKM (2012a) undertook flora and fauna assessments of the study area and conducted field surveys in December 2010. Particular attention was given to the identification of potential threatened species. No nationally threatened flora and fauna species, were identified on the site and none are expected to occur. As such, there are no threatened species or threatened ecological communities that are likely to be impacted by the Proposed Action.

3.1 (e) Listed migratory species

Description

An EPBC Act Protected Matters Search identified the following migratory species with potential to occur within a 10 kilometre buffer of the Proposed Action's site.

Listed Species	Status under EPBC Act	Type of presence
Birds		
Fork-tailed Swift (*Apus pacificus*)	-	Species/species habitat may occur in the area
Great Egret (*Ardea alba*)	-	Species/species habitat may occur in the area
Cattle Egret (*Ardea ibis*)	-	Species/species habitat may occur in the area
Malleefowl (*Leipoa ocellata*)	Vulnerable	Species/species habitat likely to occur in the area
Rainbow Bee-eater (*Merops ornatus*)	-	Species/species habitat may occur in the area
Latham's Snipe (*Gallinago hardwickii*)	-	Species/species habitat may occur in the area
Painted Snipe (*Rostratula benghalensis*)	Vulnerable	Species/species habitat likely to occur in the area

Field surveys conducted in December 2010 (SKM, 2012a) did not observe any migratory species on site, and limited suitable habitat, such as Acacias and shrubs was observed. There is a chance that migratory species would make incidental use of this vegetation.

Nature and extent of likely impact

Address any impacts on the members of any listed migratory species, or their habitat.

The areas proposed for development of the solar PV plant do not provide unique or critical habitat, preferred habitat, or habitat of significance for any migratory bird species (SKM, 2012a). Clearing of Acacias and shrubs would be required for construction of the solar plant, removing a small amount of habitat for potential migratory species. However, it is anticipated that migratory species would be able to relocate to identical areas of habitat adjacent to the site. Consequently, the Proposed Action would not affect the visitation rates and behaviours of migratory species in the region. As such, the Proposed Action is unlikely to impact on migratory species.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

The Proposed Action is located inland and does not occur in proximity to a Commonwealth marine area.

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth marine area.

Not applicable.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

If the action will affect Commonwealth land also describe the more general environment. The Policy Statement titled *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* provides further details on the type of information needed. If applicable, identify any potential impacts from actions taken outside the Australian jurisdiction on the environment in a Commonwealth Heritage Place overseas.

The Proposed Action does not occur on, or in proximity to, Commonwealth land.

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth land. Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

There are no Commonwealth Lands within sufficient distance to the Proposed Action for direct or indirect impacts to occur.

3.1 (h) The Great Barrier Reef Marine Park

Description

The Proposed Action is located in inland NSW.

Nature and extent of likely impact

Address any impacts on any part of the environment of the Great Barrier Reef Marine Park.

Not applicable.

Note: If your action occurs in the Great Barrier Reef Marine Park you may also require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If so, section 37AB of the GBRMP Act provides that your referral under the EPBC Act is deemed to be an application under the GBRMP Act and Regulations for necessary permissions and a single integrated process will generally apply. Further information is available at www.gbrmpa.gov.au

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3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

You must describe the nature and extent of likely impacts (both direct & indirect) on the whole environment if your project:

- is a nuclear action;
- will be taken by the Commonwealth or a Commonwealth agency;
- will be taken in a Commonwealth marine area;
- will be taken on Commonwealth land; or
- will be taken in the Great Barrier Reef marine Park.

Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

3.2 (a)	Is the proposed action a nuclear action?	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))		

3.3 Other important features of the environment

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed above). If at Section 2.3 you identified any alternative locations, time frames or activities for your proposed action, you must complete each of the details below (where relevant) for each alternative identified.

3.3 (a) Flora and fauna

As stated in section 3.1(d) and 3.1(e) above, there are no threatened species of threatened ecological communities and listed migratory species that are likely to be impacted by the Proposed Action.

Set out below is a discussion of flora and fauna that are protected or of conservation significance under NSW legislation.

Flora

Vegetation communities

The area of the Proposed Action supports remnant vegetation in a relatively natural condition. However some areas show evidence of disturbance in the form of selective vegetation clearing, track formation and minor weed invasion due to past land use activities.

A total of 129 plant species from 32 families were identified during the site survey across the Proposed Action's site. Of these, 15 per cent were introduced species.

Up to 80 per cent of the site is characterised by chenopod shrublands, with some small areas also supporting Acacia species. The remainder comprises cleared tracks or building areas. The vegetation

is generally in a high quality condition and supports a diversity of native species with a low to moderate abundance of exotic plant species (SKM, 2012a)

There are six vegetation map units identified within the study area, including four main vegetation communities and two modified areas (Figure 4).

- Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zone.
- Prickly Wattle open shrubland of drainage line on stony rises and plains of the arid climate zone.
- Narrow-leaved Hopbush-Scrub Turpentine – Senna shrubland of semi-arid and arid sandplains and dunes.
- Mulga - Dead Finish on stony hills mainly of the Channel Country and Broken Hill Complex Bioregions.
- Disturbed Chenopod Low Open Shrubland.
- Cleared Residential.

Black Bluebush low open shrubland

Prickly Wattle open shrubland

Narrow-leaved Hopbush Scrub Turpentine

Mulga-Dead Finish on stony hills

Disturbed Chenopod Low Open Shrubland

Figure 4 Photographs of identified vegetation communities within the study area

The distribution of these vegetation communities is shown in Figure 5.

The Proposed Action would result in the clearing or indirect disturbance of up to 149.3 hectares of native vegetation.

Threatened ecological communities

No threatened ecological communities listed under NSW legislation were identified on the site or in the immediate surrounds during survey. One threatened ecological community, *Acacia loderi* Shrublands was identified as potentially occurring in the study area. This community is listed as endangered under the NSW *Threatened Species Conservation Act 1995* (TSC Act). However field survey confirmed that this community does not occur in the study area and would not be affected by the Proposed Action (SKM, 2012a).

Threatened flora

Twelve threatened flora species under the TSC Act have been previously identified or have been identified as potentially occurring within 25 kilometres of the study area. These are listed in Appendix A. Two threatened flora species under the TSC Act, the Koonamore Daisy (*Erodiophyllum elderi*) and Creeping Darling Pea (*Swainsona viridis*), were assessed as having a high likelihood of occurring in the study area. However, neither of these species nor any other state or nationally threatened flora species were recorded in field surveys (SKM, 2012a). The Purple Wood Wattle (*Acacia carneorum)* was identified as having a moderate likelihood of occurring in the study area but was not identified during targeted field surveys and is considered to have a low likelihood of occurring.

Fauna

Thirty seven fauna species (including 25 bird, seven mammal and five reptile species) were confirmed on the Proposed Action's site and surrounds during the field survey. No amphibians were identified. The diversity of fauna is considered to be low and reflects the small area of the site, the low diversity of habitats, lack of aquatic habitat and lack of tree cover, logs and rocks to provide shelter for cover dependent species (SKM, 2012a)

The lack of tree cover and sparseness of shrub cover leads to very limited shelter and cover opportunities for birds, small mammals and reptiles. There is a natural drainage channel running through the centre of the study area (see Figure 5). This drainage channel contains areas of tall shrubland and mulga, which provide cover and nesting opportunities for small birds. A farm dam is located on the drainage line at the northern boundary and provides habitat suited to water dependent birds such as the Black-fronted Dotteral (*Elseyornis melanops*) and Red-kneed Dotterel (*Erythrogonys cinctus*).

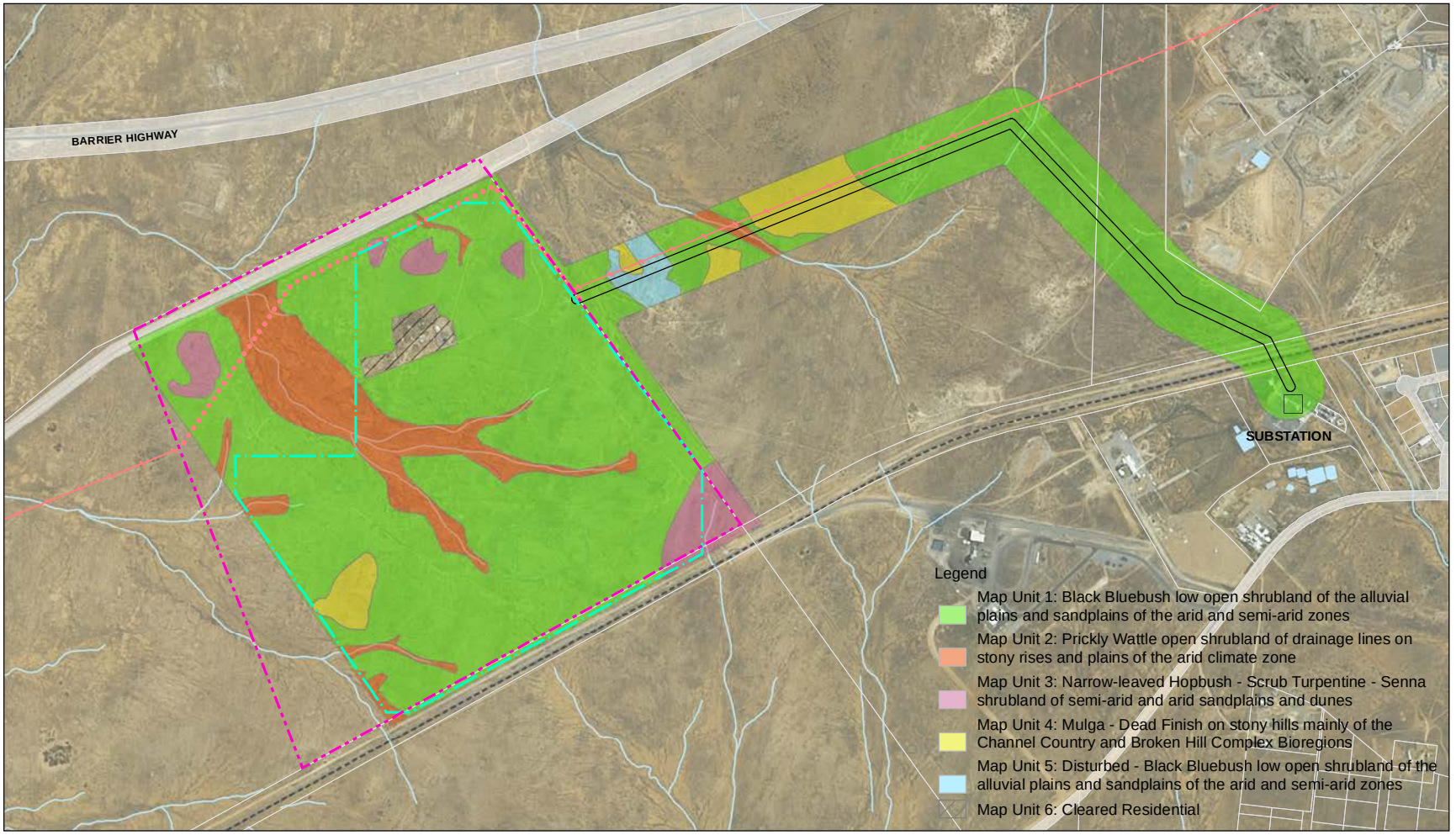

Figure 5 Vegetation communities

SINCLAIR KNIGHT MERZ

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Spatial Team - Prepared by : JC
Checked by : JL

Threatened fauna

Twenty four threatened fauna species listed under the TSC Act have been previously identified or have been identified as potentially occurring within 25 kilometres of the study area. These are listed in Appendix A.

Three threatened fauna, listed as vulnerable under the TSC Act, the Little Eagle (*Hieraaetus morphnoides*) Black-breasted Buzzard (*Hamirostra melanosternon*) and Redthroad (*Pyrrholaemus brunneus*), were assessed as having a high likelihood of occurring within the study area. A large raptor was observed and was considered to be either a Black-breasted Buzzard or a Wedge-tailed Eagle. A precautionary approach was taken and the species declared to be the threatened Black-breasted Buzzard. This species was observed to be nesting on an adjacent property approximately 500 metres to the west of the project site. The nest is outside the vegetation clearance area for the project and is not considered to be directly affected. The Proposed Action would remove a portion of the foraging range for these species as well as habitat for their prey species (particularly rabbits). The Redthroat and the Little Eagle were not identified during the field survey, although habitat in the study area is suitable for these species (SKM, 2012a)

3.3 (b) Hydrology, including water flows

Due to low levels of annual precipitation and high evaporation rates, most surface waters in the area are ephemeral and only flow after high rainfall or storm events.

The Proposed Action's site is drained by a creek system comprising tributaries of Stirling Vale Creek. The main drainage channels on the Proposed Action's site flow from south and east to north-west. The egress point is located approximately 400 metres east of the north eastern corner of the property boundary, where a farm dam lies within the drainage channel. Overflow from this dam eventually drains to the Stirling Vale Creek floodplain.

Drainage from the southern edge of the property is typically sheet flow into shallow gullies that are generally 0.3-0.5 metres deep and 1-2 metres wide.

The site is located within the Barwon-Darling Catchment. Water quality within this catchment is considered to be poor due to over-allocation of surface water resources.

Potential flooding sources for the Proposed Action's site include Stirling Vale Creek, Kellys Creek and associated tributaries.

The predominant source of groundwater around the Broken Hill area is the Fractured Rock Groundwater Province. Groundwater quality associated with this province is generally considered to be poor with values of total dissolved solids and salinity too high for human consumption.

There are no groundwater dependent ecosystems in the vicinity of the site.

3.3 (c) Soil and Vegetation characteristics

The Broken Hill region is characterised by folded and metamorphosed Proterozoic Era sedimentary and igneous rocks and Palaeozoic Era sedimentary rocks. The project site is underlain by rocks of the Wilyama Complex.

Surface soils within the study area comprise clays with sand and gravel components. The soil thickness generally varies between 0.8 to 1.3 metres. The rock underlying the soil layer consists largely of gneiss and pegmatite, and occurs at a shallow depth. Rock units are variably weathered in the upper surface. The soil and rock units have low permeability.

The study area lies within the Broken Hill Complex Bioregion which is characterised by chenopod shrublands comprising saltbush, bluebush and Mulga (*Acacia aneura*) communities. The majority of the site is vegetated although a history of selective clearing of Mulga is evident.

3.3 (d) Outstanding natural features

The Proposed Action's site does not contain outstanding natural features, such as caves or rock outcrops. The site is surrounding by the Barrier Ranges and hard rock outcrops occur throughout the landscape.

3.3 (e) Remnant native vegetation

The study area supports remnant native vegetation in a relatively natural condition. However some areas of vegetation show evidence of disturbance from selective clearing, track formation and minor weed invasion as a result of past land use activities.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The Proposed Action is set on the northwest facing side of a shallow ridge, which helps to conceal views of the site from the Barrier Highway. The highest point on the site is 280 metres AHD and the lowest point is 270 metres. The transmission line route climbs a gentle slope from the solar PV plant site to a height of 282 metres before turning south east and reaching a maximum elevation of approximately 290 metres to the railway crossing. (Section 5.2, 2012b)

3.3 (g) Current state of the environment

Include information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

The Proposed Action's site is rural land that has been used in the past for grazing, although no agricultural activities are currently being undertaken on this site. The site comprises a cleared, relatively flat area. There is evidence of light stock grazing, predominantly from horses. The central drainage channel has been dammed for stock water. Despite past clearing, remnant vegetation is present on the site. Past clearing has resulted in minor weed invasions. Field surveys undertaken in 2010 identified 19 introduced flora species on the site, equating to 15 per cent. Evidence of the European Rabbit was recorded on site and other feral animals such as cats and European Red Fox may potentially occur. Erosion at the site is evident along some of the lower (northern) drainage channels.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

There are no Commonwealth Heritage Places in the vicinity of the Proposed Action. The Pinnacles, comprising three rock peaks, were gazetted as an Aboriginal place in 1996 and are located approximately seven kilometres to the west of the project site. The Pinnacles also have non-Indigenous significance as they are considered to be a local icon. The proposed solar PV plant would impact views from the Barrier Highway looking south west towards the Pinnacles. Long term visual impacts would be minimised by plantings of locally indigenous, shrubby vegetation along the north eastern and part of the north western boundary of the solar plant site. This would mitigate impacts on views to The Pinnacles from the Barrier Highway. Plant species would be selected to be of optimum height so as not to block views of The Pinnacles.

There are no recorded non-Indigenous heritage items or places within one kilometre of the Proposed Action's site and no potential items were found within the proposed solar PV plant footprint or proposed transmission line easement. The presence of archaeological relics within the footprint of the Proposed Action is considered unlikely.

3.3 (i) Indigenous heritage values

In the vicinity of Broken Hill, there is extensive evidence of Late Pleistocene occupation along the Darling River. Many heritage sites in the vicinity of the solar PV plant are situated in close proximity to watercourses, in particular Stirling Vale Creek and its tributaries. There are 17 registered sites or artefacts located within two kilometres of the Proposed Action's site and the majority of these are

artefact scatters. There are no previously recorded or registered Aboriginal sites within 500 metres of the Proposed Action's site boundaries.

The Proposed Action's site has been subject to a number of activities and land uses that have resulted in the disturbance of the ground surface and hence potential loss of evidence of past Aboriginal occupation. An archaeological survey identified 14 Aboriginal archaeological sites, of which 11 are located within the solar PV plant site footprint and one is located within the transmission line easement. The identified sites comprise isolated stone artefacts and low density stone artefact scatters.

The Pinnacles, located approximately seven kilometres from the Proposed Action's site is a declared Aboriginal Place and is a prominent landscape feature visible from the township of Broken Hill and the Barrier Highway.

3.3 (j) Other important or unique values of the environment

Describe any other key features of the environment affected by, or in proximity to the proposed action (for example, any national parks, conservation reserves, wetlands of national significance etc).

There are no national parks, nature reserves or wetlands of national significance in the vicinity of the proposed works.

The Barrier Ranges, located to the north of Broken Hill form a ridge up to 300 metres above the surrounding plains, and is a key feature of the landscape. These would not be impacted, visually or otherwise by the proposed works.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The tenure of the site proposed for the solar PV plant is leasehold and is administered by the NSW Department of Primary Industries (Catchments and Lands). The land is currently under a Western Lands Lease granted under the *Western Lands Act 1901*. The primary purpose of the Western Lands Act is to ensure the appropriate management of this fragile environment.

The tenure of the site proposed for the transmission line is located on Crown Land between T1 and T4 and freehold between T4 and T5 (see Figure 1).

3.3 (l) Existing land/marine uses of area

The Proposed Action is located on rural land. There is currently a Western Lands (perpetual) lease for grazing purposes on the solar PV plant site, although no agricultural activities are currently undertaken on the site. The Proposed Action would not result in loss of land of high agricultural value. There is an existing rural residential dwelling on the site that would be demolished. No other rural residences would be affected (Section 2.3, SKM 2012b).

Four land holdings would be traversed by the transmission line. These include two parcels of Crown land and land owned by the Australian Rail Track Corporation Ltd and TransGrid. Land ownership would not change as a result of the transmission line (Section 12.1.1, SKM 2012b)

3.3 (m) Any proposed land/marine uses of area

There are currently four Exploration Licences (EL6689, EL2921, EL6132 and EL6774) and two Consolidated Mining Leases (CML13 and CML10) over the Proposed Action's site. There is a potential for the Proposed Action to impact planned exploration and extraction activities. Once operational, the presence of the solar PV plant and the transmission line easement would prevent the carrying out of exploration and extraction activities in those locations. However, the EA (SKM 2012b) considered the potential land use impacts of the Proposed Action on any planned exploration or extraction activities to be low, given that it intersects only a very small proportion of the areas covered by the exploration licences and mining lease (Section 12.1.1, SKM 2012b).

The proposed solar PV plant site is located in an unincorporated area administered by the NSW Department of Primary Industries (Catchments and Lands), Western Division. The proposed transmission line is located within the Willyama Common and is consistent with the land uses stated under the Willyama Common Plan of Management. No proposed land uses of this area were identified (Section 2.3, SKM 2012b)

4 Measures to avoid or reduce impacts

Note: If you have identified alternatives in relation to location, time frames or activities for the proposed action at Section 2.3 you will need to complete this section in relation to each of the alternatives identified.

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

For any measures intended to avoid or mitigate significant impacts on matters protected under the EPBC Act, specify:
- what the measure is,
- how the measure is expected to be effective, and
- the time frame or workplan for the measure.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

Provide information about the level of commitment by the person proposing to take the action to implement the proposed mitigation measures. For example, if the measures are preliminary suggestions only that have not been fully researched, or are dependent on a third party's agreement (e.g. council or landowner), you should state that, that is the case.

Note, the Australian Government Environment Minister may decide that a proposed action is not likely to have significant impacts on a protected matter, as long as the action is taken in a particular manner (section 77A of the EPBC Act). The particular manner of taking the action may avoid or reduce certain impacts, in such a way that those impacts will not be 'significant'. More detail is provided on the Department's web site.

For the Minister to make such a decision (under section 77A), the proposed measures to avoid or reduce impacts must:
- clearly form part of the referred action (eg be identified in the referral and fall within the responsibility of the person proposing to take the action),
- be must be clear, unambiguous, and provide certainty in relation to reducing or avoiding impacts on the matters protected, and
- must be realistic and practical in terms of reporting, auditing and enforcement.

More general commitments (eg preparation of management plans or monitoring) and measures aimed at providing environmental offsets, compensation or off-site benefits CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, if your proposal proceeds to these stages).

A table of draft Statement of Commitments was provided in the Broken Hill Solar Flagships EA (SKM, 2012b) for all the environmental factors assessed.

As stated in section 3.1(d) and 3.1(e) above, there are no threatened species or threatened ecological communities and listed migratory species that are likely to be impacted by the Proposed Action. There are no other matters of national environmental significance relevant to the Proposed Action.

In any event, commitments for flora and fauna, visual amenity, indigenous heritage and land use have been included below.

Flora and fauna

- The amount of native vegetation clearing would be restricted to the minimum area necessary for construction. Clearing boundaries would be specified within construction environmental management plans and delineated on site with appropriate boundary or exclusion fencing to prevent unnecessary damage or clearing of vegetation and habitat.
- Vehicle speed reduction measures would be installed along internal access roads to minimise the incidence of wildlife mortality from construction and operation vehicles.
- A 'no-go' buffer zone of 500 metres in radius would be placed around the Black-breasted Buzzard nest site should it still be present at time of construction. No construction vehicles or personnel would enter this 'no-go' area unless assessing the presence of this species.

- On-site waste management practices would prevent attracting or encouraging feral animals to the site during the construction period.
- Degraded portions of the site outside of the impact footprint would be restored 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. These areas would include a) the site perimeter, b) areas that are not impacted by infrastructure and access road footprints, and c) areas that do not need to be kept clear of vegetation for maintenance purposes or safety.
- Site restoration and revegetation activities will occur during construction and post construction.
- Weed management strategies would be implemented during construction and operation.
- An Offset Strategy would be developed, including an Offset Management and Rehabilitation Plan.

Visual

- Vegetation removal would be avoided as far as practicable during construction.
- Vehicles would remain on designated paths.
- Construction equipment and infrastructure would be demobilised from site as soon as practicable.
- Locally indigenous, shrubby vegetation would be planted along the north eastern and part of the north western boundary of the solar PV plant site to preserve the visual amenity of 'The Pinnacles' from the Barrier Highway, Silverton Road and Magazine Way. Care would be taken to choose species that would not block views of 'The Pinnacles'.
- Access tracks would be constructed from locally sourced gravel that matches the colour of the existing site surface as far as practicable.
- The colour of above-ground ancillary electrical equipment associated with the solar PV plant would be selected to integrate with the existing landscape. Preference would be given to earthy tones such a pale green and pale brown.
- Underground cabling would be used where possible.
- Any glare impacts would be ameliorated through roadside planting.

Indigenous heritage

- Management of the 14 Aboriginal heritage sites recorded during the survey will be subject to further consultation with the Aboriginal stakeholders. Following this further consultation, an Aboriginal Heritage Management Plan would be developed to specify how the sites would be protected in-situ, relocated or salvaged.
- Protocols developed for the Proposed Action will facilitate appropriate protection and management of any previously unidentified Aboriginal artefacts or objects or suspected human remains found during construction. The protocols may, as required, include stopping works in the vicinity of the find, notification of relevant stakeholders and implementation of an appropriate management strategy.
- 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.

Land use

- Landowners and leaseholders would be informed of the construction schedule and scope of works prior to construction.
- Where the project affects Crown land, the NSW Department of Primary Industries (Catchments and Lands) and the affected leaseholder would be consulted on the arrangements for transfer or alteration of the lease.
- Easements and associated land use restrictions would be identified on property titles.
- Access to properties surrounding the construction site would not be impeded by construction activities.
- Consultation would occur with current mining exploration and extraction licence and lease holders.

5 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (ie. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

5.1 Do you THINK your proposed action is a controlled action?

X	No, complete section 5.2
	Yes, complete section 5.3

5.2 Proposed action IS NOT a controlled action.

Specify the key reasons why you think the proposed action is NOT LIKELY to have significant impacts on a matter protected under the EPBC Act.

The Proposed Action is not a controlled action as it would not have any direct or indirect impacts on any matters of national environmental significance. Due to the location of the Proposed Action, it will have no effect on any World Heritage property, National Heritage places, Ramsar Wetland or Commonwealth Land. Additionally, the Proposed Action is unlikely to result in significant impacts upon any listed threatened or migratory species and ecological communities listed under the EPBC Act. The Proposed Action does not involve any nuclear actions and is located inland, so will not impact Commonwealth marine environments or the Great Barrier Reef Marine Park. Mitigation measures have been included in Chapter 4 for issues raised in this EPBC referral, including flora and fauna, visual amenity, Indigenous heritage and land use.

5.3 Proposed action IS a controlled action

Type 'x' in the box for the matter(s) protected under the EPBC Act that you think are likely to be significantly impacted. (The 'sections' identified below are the relevant sections of the EPBC Act.)

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

Specify the key reasons why you think the proposed action is likely to have a significant adverse impact on the matters identified above.

6 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

		Yes	No
6.1	Does the party taking the action have a satisfactory record of responsible environmental management? Provide details AGL is committed to achieving excellence in environmental management and performance. A number of AGL's operations have a material environmental footprint and have the potential to interact with, and impact on, various aspects of the environment. AGL's corporate health, safety and environmental management system, Life Guard Health Safety and Environmental Management System, establishes a framework of requirements, policies, environmental standards and compliance guides based on the ISO 14001 Environmental Management System. Life Guard provides a framework to enable continuous improvement in health, safety and environmental performance and facilitates the proactive management of environmental risks and compliance responsibilities. AGL is committed to responsible environmental management and protection as an integral part of its business activity. This commitment is taken seriously, and is reflected in AGL's Health, Safety and Environmental Policy. AGL's operations are subject to a range of environmental laws, regulations and policies as well as project and site-specific environmental permits and approvals issued at federal, state and local government level. AGL monitors compliance with these regulatory requirements and engages with regulators and other stakeholders. AGL also monitors and publicly reports environmental footprint data via its annual Sustainability Report and provides relevant information to regulatory agencies and bodies. Awards: Carbon Disclosure Project In April 2009, AGL's carbon disclosure was ranked third in the world out of 110 of the world's largest publicly listed electric utilities. AGL has also earned a place in the ASX 100/NZ 50 2009 Carbon Disclosure Leadership Index, and a leading ranking in the Australian and New Zealand utilities sector. Ethical Investor Sustainability Awards 2008 At the Ethical Investor Annual Sustainability Awards in December 2008, AGL was the winner of the Special Award for the Environment. The award acknowledges AGL's strategic response to climate change and AGL's disclosure record in relation to greenhouse gas emissions. AGL was also a finalist for the Ethical Investor Special Award for Corporate Governance and for the 2008 Sustainable Company of the Year. AGL was independently nominated for these awards. NSW Government Green Globe Awards In July 2009, AGL was the winner of a long-term recognition award, for ongoing commitment to environmental excellence over the past 10 years. ACCA Australia and New Zealand Sustainability Report Awards 2009 AGL's 2008 Sustainability Report was one of the 27 that were shortlisted for consideration out of 77 entrants.	✓	

6.2	Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources? If yes, provide details		✓
6.3	If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework? If yes, provide details of environmental policy and planning framework AGL's health, safety and environment (HSE) management system is known as 'Life Guard', and has been developed to establish and document a framework of requirements, policies, standards, guidelines and management practices for consistent and continuous improvement in health, safety and environmental performance and to help ensure legal compliance. This system applies across all aspects of the AGL business including the construction, operation and maintenance of power generation assets, upstream gas exploration and production, as well as the retail and corporate aspects of the business, and covers all business facilities. Life Guard is based on the requirements of ISO 14001: 2004 Environmental Management Systems and AS/NZS 4801: 2001 Occupational Health & Safety Management Systems. The HSE management system includes the HSE Policy (http://www.agl.com.au/HSEPolicy) and the AGL Environmental Principles (http://www.agl.com.au/EnvironmentalPrinciples), which guide environmental management processes across AGL. The System, Policy and Principles apply to all AGL employees, contractors, products and services. In addition, the HSE Policy includes reference to HSE risk management for all activities, projects and acquisitions and the safe and responsible use of products. AGL's approach to environmental management is also guided by the AGL Environmental Principles, which are available on the AGL website at www.agl.com.au/EnvironmentalPrinciples. Key elements of the principles include commitments to: ▪ meet or exceed statutory obligations ▪ report environmental performance consistent with recognised standards ▪ provide leadership and actively participate in the policy debate on energy and environmental matters ▪ reduce risk and minimise environmental impact ▪ consult with stakeholders on how best to achieve environmental objectives. Individual facilities have their own environmental management plans, which reflect both the requirements of the HSE management system, and the local aspects of operations. An example management plan for AGL Camden Gas project is referenced at: http://www.agl.com.au/Downloads/AGL%20CGP%20Environmental%20Management%20Plan%20-%20incl.%20Appendices%2010%20Sept%202008.pdf	✓	

6.4	Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act? Provide name of proposal and EPBC reference number (if known) AGL and its group of companies have previously made the following referrals under the EPBC Act: • 2011/5976 – AGL Energy Limited – Development of Coopers Gap Wind Farm; • 2010/5752 – AGL Energy Limited – Newcastle Gas Storage Facility Project; • 2010/5484 – AGL Energy Limited – Dalton Gas-fired Power Station and Associated Facilities; • 2010/5398 – AGL Energy Limited – AGL Energy Park, Torrens Island; • 2010/5299 – AGL Energy Limited – Tarrone Power Station Project; • 2009/5025 – AGL Energy Limited – Hallett Hill Wind Farm and Transmission Line; • 2009/4847 – AGL Energy Limited – Silverton Wind Farm; • 2008/4432 – AGL Gloucester LE Pty Ltd – Gloucester Coal Seam Methane Gas Project; • 2008/4358 – AGL Pipelines Investment Pty Ltd – Berwyndale to Wallumbilla Gas Transmission Pipeline; • 2007/3535 – AGL Energy Limited – Substation for Hallett Hill Wind Farm; • 2006/2615 – AGL Petronas Consortium – PNG-Qld Gas Pipeline, Gove Lateral; • 2006/2563 – AGL Petronas Consortium – Ballera Lateral Gas Pipeline; • 2005/2224 – Macarthur Wind Farm Pty Ltd - Macarthur Wind Farm; • 2005/2183 – AGL Energy Services Limited – Expansion and Upgrade of Biogas Utilisation Facilities at the Western Treatment Plant; • 2000/100 – AGL Energy Services Limited – Western Treatment Plan Biogas Utilisation Facility; and • 2000/15 – AGL Gas Network Pty Ltd – Canberra Primary Mains Extension Gas Pipeline Project.	✓	

7 Information sources and attachments

(For the information provided above)

7.1 References

AEMO (2012), Electricity Statement of Opportunities. For the National Electricity Market. http://www.aemo.com.au/, last accessed 6 September 2012.

Sinclair Knight Merz (2012a), Broken Hill Solar Plant Flora and Fauna Assessment, Sydney NSW.

Sinclair Knight Merz (2012b), Broken Hill Solar Plant Project Environmental Assessment, Sydney NSW.

7.2 Reliability and date of information

For information in section 3 specify:

- source of the information;
- how recent the information is;
- how the reliability of the information was tested; and
- any uncertainties in the information.

Information sources to complete this referral have been derived from the Project's Environmental Assessment and its technical appendices. These assessment documents are the most up to date and site specific investigations undertaken for the Proposed Action. These are located on the Department of Planning and Infrastructure website. Any limitations in the information are separately reported within the environmental assessment technical appendix reports. AGL has also obtained information for purposes of this referral from government databases and specialist experts.

7.3 Attachments

Indicate the documents you have attached. All attachments must be less than two megabytes (2mb) so they can be published on the Department's website. Attachments larger than two megabytes (2mb) may delay the processing of your referral.

Attachment No	Name of Attachment
1	Environmental Assessment (Volume 1 – Main Report) (supplied in hardcopy)
2	Environmental Assessment (Volume 2 – Appendices A to D) (supplied in hardcopy)
3	Environmental Assessment (Volume 3 – Appendices E to H) (supplied in hardcopy)
All attachments available at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367	

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Figure 1 Site layout of the project
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)		No matters of national environmental significance were identified in the vicinity of the site.

If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	✓	Refer to the EA on the Department of Planning and Infrastructure website (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367)
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)	✓	Refer to the EA on the Department of Planning and Infrastructure website (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367)
	copies of any flora and fauna investigations and surveys (section 3)	✓	Refer to the Flora and Fauna assessment on the Department of Planning and Infrastructure website (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367)
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Refer to the technical appendices on the Department of Planning and Infrastructure website (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367)
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	✓	Copies of correspondence are available. Refer to Chapter 3 of the EA (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4367)

8 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action[1].

Project title:

8.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act[2], this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action[3].

Name	Doug Landfear
Title	Manager Power Development (Solar)
Organisation	AGL PV Solar Developments Pty Limited
ACN / ABN (if applicable)	15 158 008 158
Postal address	101 Miller Street North Sydney 2060
Telephone	(02) 9921 2201
Email	dlandfear@agl.com.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. I agree to be the proponent for this action. I acknowledge that I may be liable for fees related to my proposed action following the introduction of cost recovery under the EPBC Act.
Signature	 Date 6-Nov-2012

[1] *If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Business Entry Point (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

[2] *If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A,* EPBC Act*). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.*

[3] *If a person other than the person proposing to take action is to be nominated as the proponent, please contact the Referrals Business Entry Point (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

Person preparing the referral information (if different from 8.1)

8.2 Individual or organisation who has prepared the information contained in this referral form.

Name	Jenny Lazorov
Title	Senior Environmental Scientist
Organisation	Sinclair Knight Merz Pty Ltd
ACN / ABN (if applicable)	ACN: 001 024 095 / ABN: 37 001 024 095
Postal address	100 Christie Street, St Leonards 2065
Telephone	(02) 9032 1532
Email	jlazorov@globalskm.com
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	 Date 6 November 2012

Appendix A Listed Threatened Species

The following information is an extract from Broken Hill Solar Plant Flora and Fauna Assessment (SKM 2012a).

A.1 Threatened Flora

Threatened Flora	Conservation Status			Distribution and Habitat Requirements*	Habitat Suitability in Proposal Area
	EPBC Act	TSC Act	RoTAP		
Acacia carneorum Purple-wood Wattle	V	V	3VCi	Occurs in the far western plains, south from west of Tibooburra to the Menindee area. Grows in grassland and woodland in red, sandy soil; also found in Mulga communities on sand dunes, level sandy sites and alluvial accumulations along watercourses; recorded from inland semi-arid *Acacia* and *Casuarina* shrublands and woodlands. Preferred soils are shallow, calcareous and loamy, and include brown earths, crusty alkaline soils and neutral red duplex soils; confined to red-earth dune soils in Kinchega NP as a dominant or occasionally co-dominant, usually on dune crests or slopes. Associated species include *Alectryon oleifolius*, *Casuarina cristata*, *C. pauper*, *Maireana pyramidata*, *Eucalyptus socialis* and *Enchyleana tomentosa*.	Moderate
Acacia notabilis *Mallee Golden Wattle*	-	E	-	Occurs west from Menindee in the far western plains of NSW. Early collections come from Byrnedale Station near Menindee and a locality south of Broken Hill. Known in Victoria from two locations in the central-north and north-west. Grows in mallee communities and open woodland on stony and rocky hills; soil types include brown lateritic loam, red clay-loam, shallow stony sands and red silty gravely sand. Associated species *include Eucalyptus camaldulensis, E. gracilis, E. socialis, E. calycogona, E. leptophylla, Melaleuca uncinata, Acacia spp., Sclerolaena diacantha* and *Beyeria opaca*. Grows as a lower open shrub layer within mallee shrubland, with an open shrub, herb and grass stratum.	Low
Acacia rivalis *Creek Wattle*	-	E	-	Recorded from the Broken Hill district, but originally found in SA, where described as being endemic and confined to the northern part of the Flinders Ranges region. There is a possibility that the species did not occur naturally in New South Wales but has become naturalised in a restricted area near Broken Hill. In NSW, confined to woodland communities bordering ephemeral creeks and streams and along watercourses. It grows in a variety of stony soils, often with limestone content. Associated species include *Callitris glaucophylla, Eucalyptus camaldulensis, Acacia victoriae, A. tetragonophylla, Hakea edniana* and *Eremophila spp*.	Low
Convolvulus tedmoorei Bindweed	-	E	-	Originally known from only two areas on the Murrumbidgee and Darling River floodplains in central-western NSW, from Toganmain Station, Darlington Point, and from a locality 5 miles NW of Louth. Two other recorded localities for the species are ENE of Broken Hill on the road to Wilcannia, and Menindee Road, Scarsdale. Grows in self-mulching grey clay soils on the floodplains of the Darling and Murrumbidgee Rivers.	Very Low
Dodonaea microzyga var. microzyga	-	E	-	Presently confined to the far north-western plains of NSW, where it is restricted to very localised occurrences at Peak Hill near Milparinka. Widely distributed in arid SA, extending into southern NT and Western Qld. Grows in arid open woodland or shrubland, mostly on stony rises, hills and ranges of ironstone and granite. Soils mostly skeletal and stony, including calcareous clay-loam, limestone soil and shaly soil. Associated species in central Australia include *Casuarina cristata, Eucalyptus socialis, Acacia sowdenii, A. kempeana, A. tetragonophylla* and *Eremophila* spp.	Moderate

Threatened Flora	Conservation Status			Distribution and Habitat Requirements*	Habitat Suitability in Proposal Area
	EPBC Act	TSC Act	RoTAP		
Eleocharis obicis Striate Spike-sedge	E	E	3K	Found near Condobolin and Hay, as well as being known from an old collection from the Barrier Range near Broken Hill. The later collection was made on the Lachlan River floodplain at Micabil, near Condobolin. Grows in ephemerally wet situations such as roadside drains and depressions, usually in low-lying grasslands. Sites include depressions with heavy clay soils on the Lachlan River floodplain, with *Eragrostis australasica, Atriplex vesicaria and A. nummularia* shrublands, low-lying claypans near an irrigation channel, and a shallow open ditch on a low ridge with *Eucalyptus populnea* in red sandy soil over clay.	Moderate
Erodiophyllum elderi Koonamore Daisy	-	E	-	Occurs south from the Broken Hill district, at localities including Mazar Station south of Broken Hill and just east of the SA border. Also distributed throughout southern SA (including Koonamore Station, approx. 400 km NNE of Adelaide, from where the species gets its common name) and WA. Grows in flat open areas on sandy calcareous soils. In central Australia, it grows mainly on alluvial floodplains. Commonly recorded from Mulga shrubland with chenopods in SA and WA. Soils include red sand, brown clay, texture-contrast soil on a scalded floodplain, and red loam to sandy loam with quartz. Interstate habitats include stony plains, shallow creeklines over limestone, arid floodplains, and shallow depressions formerly filled with water. Associated vegetation includes *Acacia aneura* shrubland with *A. burkittii* and *Dissocarpus paradoxus*.	Moderate-High
Indigofera longibractea Showy Indigo	-	E	-	Restricted to an area just north of Broken Hill known as the Waukeroo Hills. Also occurs in SA at sites in the Musgrave and Flinders Ranges. Found on rocky hills and creek beds, growing in limited numbers in shallow stony soils among rock outcrops. Across its range it occupies a variety of rocky habitats, ranging from creeks to scree slopes and ridges. Soils are skeletal and sandy. Associated species and vegetation include *Acacia tetragonophylla, Callitris*, grass species dominated by *Triodia* and a diversity of low shrubs amongst granitic rocks.	Moderate
Lepidium monoplocoides Winged Peppercress	E	E	3ECi	Widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. There is a single collection from Broken Hill and only two collections since 1915, the most recent being 1950. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie. Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by *Allocasuarina luehmannii* (Bulloak) and/or eucalypts, particularly *Eucalyptus largiflorens* (Black Box) or *Eucalyptus populnea* (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses. Recorded in a wetland-grassland community comprising *Eragrostis australasicus, Agrostis avenacea, Austrodanthonia duttoniana, Homopholis proluta, Myriophyllum crispatum, Utricularia dichotoma* and *Pycnosorus globosus*, on waterlogged grey-brown clay. Also recorded from a *Maireana pyramidata* shrubland.	Moderate
Swainsona colutoides Bladder Senna	-	E	-	Occurs in the south-western corner of NSW, with several populations all located within Tarawi Nature Reserve. Also found in inland parts of southern Western and South Australia (where it is widespread), and in the Northern Territory near Alice Springs. Grows on sandy flats or skeletal hillside soils in mallee woodland. Plants are usually found in large numbers in areas of previous controlled burns and wildfires. Populations in Tarawi NR restricted to an area burned 18 months previously. Associated species include post-fire shrubby regrowth of *Eucalyptus socialis, E. dumosa* and *E. gracilis*, with understorey shrubs of *Myoporum platycarpum* subsp. *platycarpum, Acacia colletioides, Triodia scariosa* subsp. *scariosa, Grevillea huegelii* and *Beyeria opaca*. Bare ground with very little leaf litter constituted the ground layer.	Low

Threatened Flora	Conservation Status			Distribution and Habitat Requirements*	Habitat Suitability in Proposal Area
	EPBC Act	TSC Act	RoTAP		
Swainsona murrayana Slender Darling-pea	V	V	3VCi	Found throughout NSW, it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with Maireana species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated.	Moderate
Swainsona viridis *Creeping Darling Pea*	-	E	3K	Uncommon in the Broken Hill and Silverton districts in the far north-western plains of NSW. Also occurs in the Flinders Ranges area of SA. Grows in dry, sandy or stony areas on the banks or in the beds of creeks. Found in the Broken Hill area on sandy soils near watercourses. Also collected along a roadside sandplain in sandy-loam soil. Flowering time is from August to November.	Moderate-High

RoTAP Codes

2 = Geographic Range in Australia less than 100km

3 = Geographic Range in Australia greater than 100km

V = Vulnerable – at risk over longer period (20-50 years)

E= Endangered – at risk within 10-20 years.

R = Rare – uncommon plants with no current threats

C = Reserved

K = Poorly Known – Inadequate field distribution information

i = Less than 100 plants in conservation reserves

EPBC Act and TSC Act Codes

E = Endangered

E2 = Endangered Population

V = Vulnerable

* Distribution and habitat requirement information adapted from the Department of Environment and Conservation Threatened Species Website (http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/browse_allspecies.aspx)

A.2 Threatened Fauna

Species	Common Name	EPBC Act status	TSC Act status	Likelihood of occurrence
Birds				
Ardeotis australis	Australian Bustard	-	Endangered	Not expected, no woodland/tree cover.
Burhinus grallarius	Bush Stone-curlew	-	Endangered	Not expected, rare species in the locality and habitat not suitable.
Calamanthus campestris	Rufous Fieldwren	-	Vulnerable	Not expected, habitat not suitable.
Certhionyx variegatus	Pied Honeyeater	-	Vulnerable	Not expected, no tree/woodland cover.
Epthianura albifrons	White-fronted Chat	-	Vulnerable	Not expected, habitat not suitable.
Hieraaetus morphnoides	Little Eagle	-	Vulnerable	May fly over the site, prey species present however very limited roosting and nesting opportunities.
Melanodryas cucullata	Hooded Robin	-	Vulnerable	Not expected, no tree/woodland cover.
Neophema splendida	Scarlet-chested Parrot	-	Vulnerable	Not expected, no tree/woodland cover.
Oxyura australis	Blue-billed Duck	-	Vulnerable	Not expected, potential habitat

Species	Common Name	EPBC Act status	TSC Act status	Likelihood of occurrence
				absent.
Pezoporus occidentalis	Night Parrot	-	Endangered	Not expected, potential habitat absent.
Pyrrholaemus brunneus	Redthroat	-	Vulnerable	Moderate likelihood, habitat suitable.
Rostratula australia	Australian Painted Snipe	Vulnerable	Endangered	Not expected, no wetland habitats.
Circus assimilis	Spotted Harrier	-	Vulnerable	Not expected, habitat not suitable for this species.
Hamirostra melanosternon	Black-breasted Buzzard	-	Vulnerable	May fly over the site, prey species present however very limited roosting and nesting opportunities on the site.
Cacatua leadbeateri	Major Mitchell's Cockatoo	-	Vulnerable	Not expected, no tree/woodland cover.
Hirundapus caudacutus	White-throated Needletail	Migratory	-	May fly over the site, however not expected to utilise habitat on site.
Merops ornatus	Rainbow Bee-eater	Migratory	-	Not expected, no tree/woodland cover.
Ardea alba	Great Egret, White Egret	Migratory	-	Not expected, no suitable habitat.
Ardea ibis	Cattle Egret	Migratory	-	Not expected, no suitable habitat.
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Migratory	-	Not expected, no suitable habitat.
Rostraluta benghalensis s. lat.	Painted Snipe	Migratory	-	Not expected, no suitable habitat.
Apus pacificus	Fork-tailed Swift	Migratory	-	May fly over the site, no roosting habitat and is not expected to utilise habitat on the site.
Mammals				
Antechinomys laniger	Kultarr	-	Endangered	May occur, however habitat is marginal due to a lack of cover and shelter microhabitats in the form of logs or cracking clays.
Sminthopsis macroura	Stripe-faced Dunnart		Vulnerable	May occur, however habitat is marginal due to a lack of cover and shelter microhabitats in the form of cracking clays. No recent records in the locality.
Leporillus conditor	Greater Stick-nest Rat	Vulnerable		Not expected, site may be outside of known distributional range, and habitats not optimum.
Pseudomys bolami	Bolam's Mouse		Endangered	Chenopod shrublands and low shrubland habitats on site are suitable for this species.
Notomys longicaudatus	Long-tailed Hopping-mouse	Extinct		Not expected, habitat not suitable.
Chalinolobus picatus	Little Pied Bat	-	Vulnerable	Not expected, no tree cover/woodland or roosting habitat.
Nyctophilus timoriensis (South-eastern form)	Greater Long-eared Bat, South-eastern Long-eared Bat	Vulnerable	-	Not expected, no tree cover/woodland.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	-	Vulnerable	Not expected, no tree cover/woodland.

Species	Common Name	EPBC Act status	TSC Act status	Likelihood of occurrence
Reptiles				
Ctenophorus decresii	Tawny Crevice-dragon	-	Endangered	Restricted to rock outcrops and gorge habitats not present on the site.
Pseudonaja modesta	Ringed Brown Snake	-	Endangered	May occur, habitat is marginal due to a lack of shelter microhabitats in the form of logs or burrows.
Lerista xanthura	Yellow-tailed Plain Slider	-	Vulnerable	Not expected, habitat unsuitable.
Tiliqua occipitalis	Western Blue-tongued Lizard	-	Vulnerable	Not expected, habitat unsuitable.

A.3 Additional Information

Since the completion of flora and fauna field surveys (December 2010) and subsequent assessments (2011 - 2012) as documented in SKM (2012a), the EPBC Act database has listed three additional threatened species having the potential to occur within 10 km of the Proposed Action's site. These species and their likelihood of occurrence are considered below:

- Murray Cod – this is an aquatic species. The Proposed Action does not occur near or adjacent to permanent waterways or aquatic habitats that would support habitats for the Murray Cod. A number of ephemeral and shallow drainage lines occur on site but these do not provide adequate habitat for this species.
- Malleefowl – the Malleefowl favours habitats comprising shrublands and low woodlands that are dominated by mallee vegetation. This includes multi-stemmed species of eucalyptus such as *Eucalyptus socialis*, *E. Dumosa* or *E. incrassate*. These species were not identified as occurring on site. These habitats do not occur with the solar PV plant site and associated transmission line. Field surveys of the study area found no record or evidence suggesting the presence of the Malleefowl.
- Thick-billed Grasswren – this species favours habitats comprising chenopod shrublands, especially shrublands dominated by saltbusgh *Atriplex* spp. and bluebush *Maireana* spp. These habitats do occur within the Proposed Action's site. Field surveys of the study area found no record or evidence suggesting the presence of the Thick-billed Grasswren.