



# Modification Application

MODIFICATION APPLICATION, PARKES SOLAR FARM

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# 1 BACKGROUND

Development Consent for the Parkes Solar Farm was issued by the Department of Planning and Environment (DPE) on the 14 June 2016. The approval allows for the construction, operation and decommissioning of the proposed photovoltaic (PV) 57 megavolt-ampere (MVA) or 65 Megawatt (MW).

Since obtaining approval for the Parkes Solar Farm, the proponent Neoen, has commissioned detailed engineering design work for the solar farm. This has identified minor changes to the layout of the approved solar farm that are not consistent with the Development Consent. These include relocation of site access, substation, temporary construction facilities and the removal of east-west linear strip of vegetation from the eastern part of the project site to allow changes to the layout of the array, and a resultant minor increase in capacity of the solar farm. The minor changes to the proposal, while substantially the same as the approved project, would not be consistent with the existing Development Consent.

The changes proposed will meet the objectives of:

1. Reducing costs associated with development
2. Reducing transmission losses during operation, and
3. Resulting in a net environmental gain.

## 1.1 PLANNING CONTEXT

### ***Environmental Planning and Assessment Act 1979***

Under section 96 of the *Environmental Planning and Assessment Act 1979* (EPA Act), a State Significant Development (SSD) can be modified. This can be done where the modified development remains 'substantially the same' as the original approved development. An applicant can apply to the Minister for Planning to modify an SSD approval and lodge a request for assessment of a modification with the Department of Planning and Environment.

Clause 96 (1A) refers to modifications involving minimal environmental impact. It states that;

*A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*

- (a) it is satisfied that the proposed modification is of minimal environmental impact, and*
- (b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all)....*

### ***Conditions of consent***

Condition 2 of Schedule 2 of the Development Consent has approved construction of the Parkes Solar Farm and states that it be;

- (a) generally in accordance with the EIS; and*
- (b) in accordance with the conditions in this consent.*

Condition 11 of Schedule 3, titled *Inland Grey Box Woodland Endangered Ecological Community (EEC)* requires that;

*The Applicant shall maintain and enhance the Inland Grey Box Woodland EEC located within the project site, as shown in Appendix 1.*

While the proposed changes would remain ‘substantially the same’ as the approved development, would be minor in nature and result in minimal environmental impact, the modified proposal would not meet condition 11 of Schedule 3 of the conditions of consent. They therefore require assessment (provided in this Modification Report) and a modification application to be approved by the DPE.

## **2 PROPOSED MODIFICATIONS**

The modified solar farm is illustrated in Attachment 1. Key infrastructure components of the revised project, are equivalent to the approved project, as described in the EIS, including;

1. Solar arrays: upper limit of 215,000 solar panels.
2. Approximately 2,850 tracker units (for the single-axis tracking technology option).
3. Approximately 28 PV boxes or PV skids, each of them containing an inverter and an 11kV, 22kV or 33kV transformer.
4. Onsite cabling and electrical connections between solar arrays and panel inverters.
5. One containerised or skid-mounted 66kV transformer and delivery station.
6. Cables and trenches.
7. Internal access tracks to allow for site maintenance vehicles, and gravel access road and parking for staff and visitors.
8. Permanent staff amenities and offices.
9. Perimeter security fencing, approximately 2.3 m high.
10. Vegetation buffer.
11. A 66kV underground power line to connect into the existing Parkes Transgrid substation, approximately 600 m north of the site (note while the EIS included overhead line as an option, the consent requires underground installation).

The modifications proposed are described below;

1. Site access from Pat Meredith Drive would be relocated to the south of the currently approved location by approximately 250 metres. This would result in;
  - i Avoidance of the need to clear any Grey Box Grassy Woodland EEC for access
  - ii Extending the length of the widening to 8.4 metres and paving of Pat Meredith Drive by approximately 250 metres.
  - iii Facilitating relocation of the site carpark, operation and maintenance buildings
2. Relocation of the proposed laydown area, construction offices, site carpark, operation and maintenance buildings and substation to a location 250 metres south of the currently approved location. Relocation of site access to the south would;
  - i Allow for substation to be located closer to the arrays, and reduce power losses by shortening the length of lower voltage (33kV) cables.
  - ii Allow for an improved environmental outcome. A higher quality intact remnant of Inland Grey Box woodland EEC surrounds the approved location for this infrastructure. Removal of infrastructure from this site would reduce risk of impact from secondary factors (eg. siltation, compaction and weed ingress) from this location, and provide an opportunity of planting out this 0.9 hectare area.
3. Removal of the narrow east-west vegetated strip to allow for the expansion of the solar array into this area. This 2100 m<sup>2</sup> of vegetation, that consists of planted rows of trees, is highly disturbed with the native shrub and ground cover layer being mostly absent it conforms with the description of Grey Box Grassy Woodland EEC. Extending the solar array into this area will allow for a;

- i) Minor increase in capacity at the site (to a maximum of 66MW)
  - ii) Reduction in length of internal roads and associated infrastructure. The approved layout is more dispersed than the modified layout, the resulting optimised layout would reduce roading
  - iii) Reduction in number of trackers (motors and frame structure that holds the solar modules). The approved layout would require the installation of short row lengths in the arrays south east corner. The proposed layout will allow for up to approximately 90 metre long rows of panels to be run by a single tracker motor. The approved layout requires that shorter length rows be established in the arrays south east due to the east-west row of planted trees. Each row whether long or short requires one single tracker motor. Hence, if the rows are shorter, it would require more rows and motors to hold the same capacity.
  - iv) Reduction in medium voltage cabling and trenching
  - v) Reduction in power loss that would result from longer medium voltage cabling
  - vi) Reduction in shading of solar panels from the retained tree line.
4. Revegetation of approximately 0.91 hectare of cleared farm land. The relocation of the laydown area, construction offices, site carpark, operation and maintenance building and substation has created an opportunity of planting out this cleared area which is surrounded by higher quality EEC.

## **3 JUSTIFICATION**

### **3.1 ENGINEERING AND DESIGN**

The modifications to site access, laydown area, construction offices, site carpark, operation and maintenance buildings, the substation and the arrays have a number of technical and engineering advantages. These include a reduction in:

- a) Roads and associated infrastructure
- b) Trackers (frame structure that holds the solar modules)
- c) Medium voltage cabling and trenching
- d) Power losses that would result from longer higher voltage cabling and shorter lower voltage cabling. This is from reduced cabling on the site, and reduced energy losses by relocating substation to a more central location
- e) Shading of solar panels from the retained tree line.

### **3.2 ENVIRONMENTAL BENEFITS**

The approved construction offices, site carpark, operation and maintenance buildings and substation area is currently surrounded by higher quality intact Grey Box Grassy Woodland EEC. Relocation of these facilities will;

1. Avoid secondary impacts to this vegetation community that might result from construction and operation activities such as soil compaction, and siltation of vegetation
2. Provide an opportunity to plant out this cleared area, an area of approximately 0.9 hectare.

Planting out of this area with trees consistent with the Grey Box Grassy Woodland will reduce the woodland to edge-to-area ratio of this fragmented patch of EEC. Reducing this edge-to-area will improve the integrity of this remnant vegetation, and would result in an environmental gain.

## 4 CONSULTATION

Neoen have consulted with representatives from the Department of Planning and Environment to discuss this proposed modification. They have also corresponded with the Office of Environment and Heritage (OEH). Correspondence was received from OEH on 11 August 2016. The focus of OEH's response to Neoen's request for advice in relation to the proposed modification related to the narrow vegetated strip running east-west that consists of approximately 2100 m<sup>2</sup> of vegetation that includes planted rows of trees that, while highly disturbed and almost devoid of a native shrub and ground cover layer, conforms with the description of Grey Box Grassy Woodland EEC.

The OEH correspondence stated that;

*OEH has conducted a desktop assessment of the modified layout and estimates that it would result in the removal of a planted strip of approximately 90 trees.*

*It is noted that the approval (SSD 6784) for the project requires the Inland Grey Box Woodland located within the project site to be maintained and enhanced. The approval also requires the creation of a vegetated buffer around the northern and western boundaries of the site. A detailed landscaping plan is to be prepared prior to commencement of construction.*

*OEH considers that the enhancement of the north-south strip of native vegetation, together with the establishment of a mature vegetation buffer around the site, will compensate for the paddock trees (to be impacted by the original approval and this modification) and **planted strip (to be impacted by this modification) to be removed.***

***OEH recommends that the landscaping plan required under condition 13 of the approval for the Parkes Solar project be prepared and include changes resulting from the proposed modification application. This should include quantification of all trees to be removed as well as those to be planted to enhance retained vegetation and to provide a buffer.***

## 5 ENVIRONMENTAL ASSESSMENT

Table 5-1 below provides an assessment of the magnitude of environmental impact, that would occur as a result of the proposed modifications to the existing Development Consent for the Parkes Solar Farm. It includes a reference to relevant sections of the EIS that assesses impact of the proposed solar farm on each environmental factor.

**Table 5-1** Assessment of the magnitude of environmental impact associated with the proposed modifications.

| Relevant EIS section | Environmental factor | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Net change |
|----------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 6.2                  | Biodiversity         | <p>Removal of 0.21 ha of vegetation that includes planted rows of trees that, while highly disturbed and almost devoid of a native shrub and ground cover layer, conforms with the description of Grey Box Grassy Woodland EEC.</p> <p>Impact would be offset by planting out of 0.91 ha of Grey Box Grassy Woodland at a location that would reduce the woodland to edge-to-area ratio of this fragmented patch of EEC. Reducing this edge-to-area will improve the integrity of this remnant vegetation, and would result in an environmental gain.</p> | Positive   |
| 6.3                  | Aboriginal heritage  | Modification would not result in avoidance of isolated artefact IF7 (equivalent to the approved project). Proposed modification would not result in changes impacts to additional recorded Aboriginal Heritage items.                                                                                                                                                                                                                                                                                                                                     | No change  |
| 6.4                  | Visual amenity       | In general terms, the visual appearance of the solar farm would not change as a result of the proposed modifications. Greatest change to visual components of the proposal would relate to the site carpark, operation and maintenance building and substation site carpark. Vegetation screening proposed would mitigate impact.                                                                                                                                                                                                                         | Negligible |
| 6.5                  | Noise and vibration  | <p>Construction noise levels would not change as a result of the proposed modification.</p> <p>Potential noise sources during operation of the solar farm include;</p> <ul style="list-style-type: none"> <li>• Mechanical noise from the tracking system of the solar panels</li> <li>• Operation of 30 inverters with integrated transformers</li> <li>• One staff member onsite daily with the use of light vehicle.</li> </ul>                                                                                                                        | No change  |

| Relevant EIS section | Environmental factor                   | Discussion                                                                                                                                                                                                         | Net change |
|----------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                      |                                        | As the layout of the solar farm, and hence location of noise generation infrastructure will not change, the proposed modification would not result in an increase in noise levels in relation sensitive receivers. |            |
| 7.1                  | Water use, water quality and hydrology | Water use would not change as a result of proposed modifications.                                                                                                                                                  | No change  |
| 7.2                  | Soil                                   | Soil impacts would not change as a result of the proposed modifications.                                                                                                                                           | No change  |
| 7.3                  | Traffic, transport and road safety     | An additional 250 metres of Pat Meredith Drive would be sealed. This would likely result in a long term improvement of road conditions at the site.                                                                | Positive   |
| 7.4                  | Climate and air quality                | Climate and air impacts would not change as a result of the proposed modifications.                                                                                                                                | No change  |
| 7.5                  | EMFs                                   | It is not anticipated that EMFs would change as a result of the proposed modifications.                                                                                                                            | No change  |
| 7.6                  | Land use                               | Land use impacts would not change as a result of the proposed modifications.                                                                                                                                       | No change  |
| 7.7                  | Socioeconomic and community            | Socioeconomic and community impacts would not change as a result of the proposed modifications.                                                                                                                    | No change  |
| 7.8                  | Resource use and waste generation      | Resource use and waste generation impacts would not change as a result of the proposed modifications.                                                                                                              | No change  |
| 7.9                  | Fire and bush fire issues              | The relocation of the operation and maintenance building and substation away from a larger patch of intact woodland and into cleared agricultural land would reduce risk to these assets from bushfire.            | Positive   |
| 7.10                 | Historic heritage                      | Impacts would not change as a result of the proposed modifications.                                                                                                                                                | No change  |

## 6 CONCLUSION AND MITIGATION

### 6.1 CONCLUSION

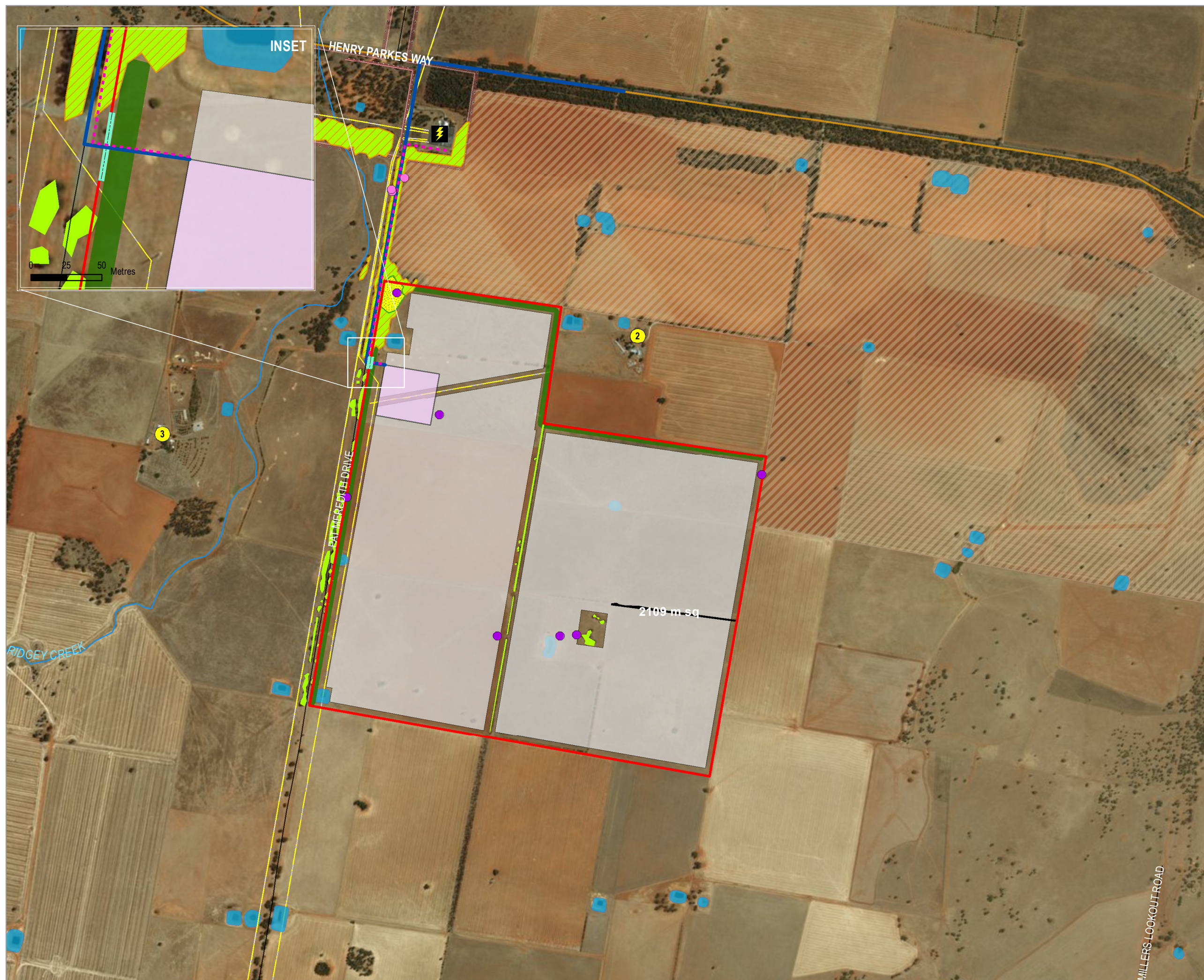
This assessment has demonstrated that the proposed modifications would have either an equivalent or lesser environmental impact than the Approved Project. In relation to biodiversity, the removal of 0.21ha of planted trees would be offset by planting out of 0.91 ha of species included in the Grey Box Grassy Woodland community. The location of the planting would reduce the woodland edge-to-area ratio of this fragmented patch of EEC. This would improve the integrity of this remnant vegetation, and would result in an environmental gain.

### 6.2 MITIGATION

The following additional environmental safeguard is proposed.

| Environmental Safeguard                                                                                                                                                                                                                                                                                | Solar farm |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---|---|
|                                                                                                                                                                                                                                                                                                        | C          | O | D |
| <ul style="list-style-type: none"><li>Revegetation of approximately 0.91 hectares of cleared farm land in the north eastern corner of the site (see Appendix 1) would incorporate ripping of soils and planting of trees consistent with the Grey Box Grassy Woodland EEC found on the site.</li></ul> | C          |   |   |

## **ATTACHMENT A: GENERAL LAYOUT OF DEVELOPMENT**



- Aboriginal heritage artefact
- Aboriginal heritage site (AHIMS)
- Nearest receivers
- Site access
- ⚡ Substation
- Proposal site boundary
- Underground transmission line
- Construction access
- Proposed cattle fence
- Proposed EEC revegetation (0.91 ha)
- EEC impacts: 0.21 ha (EEC TSC Act only)
- Proposed substation, O&M office and construction facilities area or PV arrays
- Proposed arrays
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (EPBC Act)
- Inland Grey Box woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (TSC Act), includes EPBC EEC areas
- Proposed perimeter planting
- Main road
- Local road
- Existing transmission/distribution lines
- Watercourse
- Farm dam or other water body
- Travelling stock route
- Goonumbla Solar Farm

0 100 200 400 Metres

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Author: SP

