

# JEMALONG SOLAR FARM (SSD 8803) MODIFICATION

## Visual Impact Assessment of Proposed Modifications



142097-6  
Jemalong Solar Farm (SSD  
8803) Modification  
C  
22 July 2019

## REPORT

### Document status

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# 1 PRELIMINARY

We have prepared this report for the sole purposes of Genex Power ("client") for the specific purpose of only for which it is supplied ("purpose"). This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter.

In preparing this report we have made certain assumptions. We have assumed that all information and documents provided to us by the client or as a result of a specific request or enquiry were complete, accurate and up-to-date. Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.

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## 1.1 Acronyms

AHD	Australian Height Datum
DCP	Development Control Plan
EIS	Environmental Impact Statement
EP&A Act	NSW Environmental Planning and Assessment Act 1979
LEP	Local Environment Plan
LGA	Local Government Area.
REF	Review of Environmental Factors
RMS	New South Wales Roads and Maritime Services
SEARs	Standard Secretary's Environmental Assessment Requirements
SWOT	Strengths Weaknesses Opportunities Threats
VIA	Visual Impact Assessment

## 1.2 Terms

Genex Power Pty Ltd	The “client” for which this report was prepared.
Landscape Character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape Character Zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately adjacent.
Magnitude	A term that combines the judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.
Scenic amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Sensitivity	A term applied to visual receivers, combining judgements of the susceptibility of the receiver to the specific type of change or development proposed and the value related to that receptor.
Solar array	Solar panels linked together to form an ‘array’.
Visual amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Visual catchment	Extent of potential visibility to or from a specific area, feature or project.
Visual prominence	Is determined by the size, height and colour of proposed infrastructure elements and the degree to which the landscape within which they sit can assist in reducing their visual prominence (e.g. screening vegetation, land-form, etc.).
Visual receiver	Individuals and/or defined groups of people who have the potential to be affected by a proposal.

## 2 INTRODUCTION

This visual impact assessment of the modifications does not replace the existing visual impact assessment titled, “Visual Impact Assessment Jemalong Solar Station 1, Jemalong, NSW” dated July 2015 and prepared by Fresh Landscape Design. Nor does this assessment confirm the accuracy of any previous visual impact assessments.

### 2.1 Report Purpose

RPS has been commissioned by Genex Power to undertake a review of the modifications to Jemalong Solar (SSD 8803) project and identify any visual impact changes to the existing approved VIA.

Genex Power is proposing to develop the Jemalong Solar Farm (50MW) at Jemalong in central New South Wales (NSW) within the Forbes Local Government Area (LGA). To do so, it is proposed to modify the development consent (SSD 8803) granted on 18 May 2018 and subsequently modified on the 24 July 2018.

The modifications proposed to the approval for the project will involve the following:

- Revision of the existing solar array footprint so that panels are now located into the south west corner and the eastern side of the site.
- Revision of the existing solar array footprint so that panels are now located closer to the southern boundary to increase setbacks from vegetation retained to the north of the array.

This refinement of the development arises from a more detailed design process of the solar array.

It is noted that the modifications do not involve works outside of the established project area for the original and modified application, that the approved generation capacity of the development remains unchanged, and previous environmental investigations remain valid.

This visual impact assessment delivers an objective statement of the probable impacts on the visual environment resulting from the construction of the proposed modifications. The report documents the assessment of visual impact and provides an indication for suitable mitigation measures where appropriate.

### 2.2 Study Limitations

This assessment is intended to be an objective report based on professional analysis of the development. It seeks to establish the anticipated visual impacts of the modifications to the Jemalong Solar Farm on the range of viewers identified in the previously approved VIA prepared by Fresh Landscape Design. The assessment has been undertaken based on conceptual level information and therefore is generally broad in its approach.

Landscape and visual assessment requires qualitative (subjective) judgements to be made. The assessment process aims to be objective and describe any changes factually. Potential changes as a result of the Project have been defined, however the significance of these changes requires qualitative (subjective) judgements to be made. The conclusions of this assessment therefore combine objective measurement and subjective professional interpretation.

The services and the purpose undertaken by RPS under the Contract in connection with preparing this report were limited to those specifically detailed in the Contract and this report, and are subject to the scope limitations set out in the Contract and this report.

Other than as expressly stated in this report to the contrary, the opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. RPS has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by RPS described in this report. RPS disclaims liability arising from any of the assumptions being incorrect.

## 2.3 Methodology

This report uses an industry standard as a guiding approach to visual impact assessment that is systematic, consistent & based on professional, value judgement of commonly accepted & adopted criteria in the industry.

The methodology for this visual impact assessment involves the following activities:

1. Desktop review of the existing approved VIA report.
2. Comparison of the approved development and the proposed modifications.
3. Identification of changes to the visual impact from existing identified viewports. Where a change to the visual impact is identified, undertaking a visual impact assessment using the grading matrix, considering visual sensitivity (of the visual amenity or viewpoints) and the magnitude of the visual change, to arrive at an overall level of effect or impact.

This Visual Impact Assessment Report adopts the standard methodology of sensitivity relating to proximity - the greater the distance between the visual receiver and the proposal, the lesser the visual sensitivity of that visual receiver.

Key information reviewed as part of this report included:

- State Significant Development Assessment, Jemalong Solar Project (SSD 8803) – NSW Government Dept Planning and Environment.
- Visual Impact Assessment, Jemalong Solar Station 1, July 2015 – Fresh Landscape Design
- Jemalong Solar Farm Site Layout Plan, Plan Ref 142097, dated July 2019



### 3 OUTLINE OF PROJECT MODIFICATIONS

#### 3.1 Modifications Summary

The modifications proposed to the approval for the project will involve the following:

- Revision of the existing solar array footprint so that panels are now located into the south west corner and the eastern side of the site.
- Revision of the existing solar array footprint so that panels are now located closer to the southern boundary to increase setbacks from vegetation retained to the north of the array.

This refinement of the development arises from a more detailed design process of the solar array.

It is noted that the modifications do not involve works outside of the established project area for the original and modified application, that the approved generation capacity of the development remains unchanged, and previous environmental investigations remain valid.

#### 3.2 Modifications to Solar Array Configuration

Figure 1, indicates the existing approved solar array footprint. Figure 2 indicates the proposed modified solar array footprint and Figure 3 compares the approved solar array footprint to the modified array footprint.

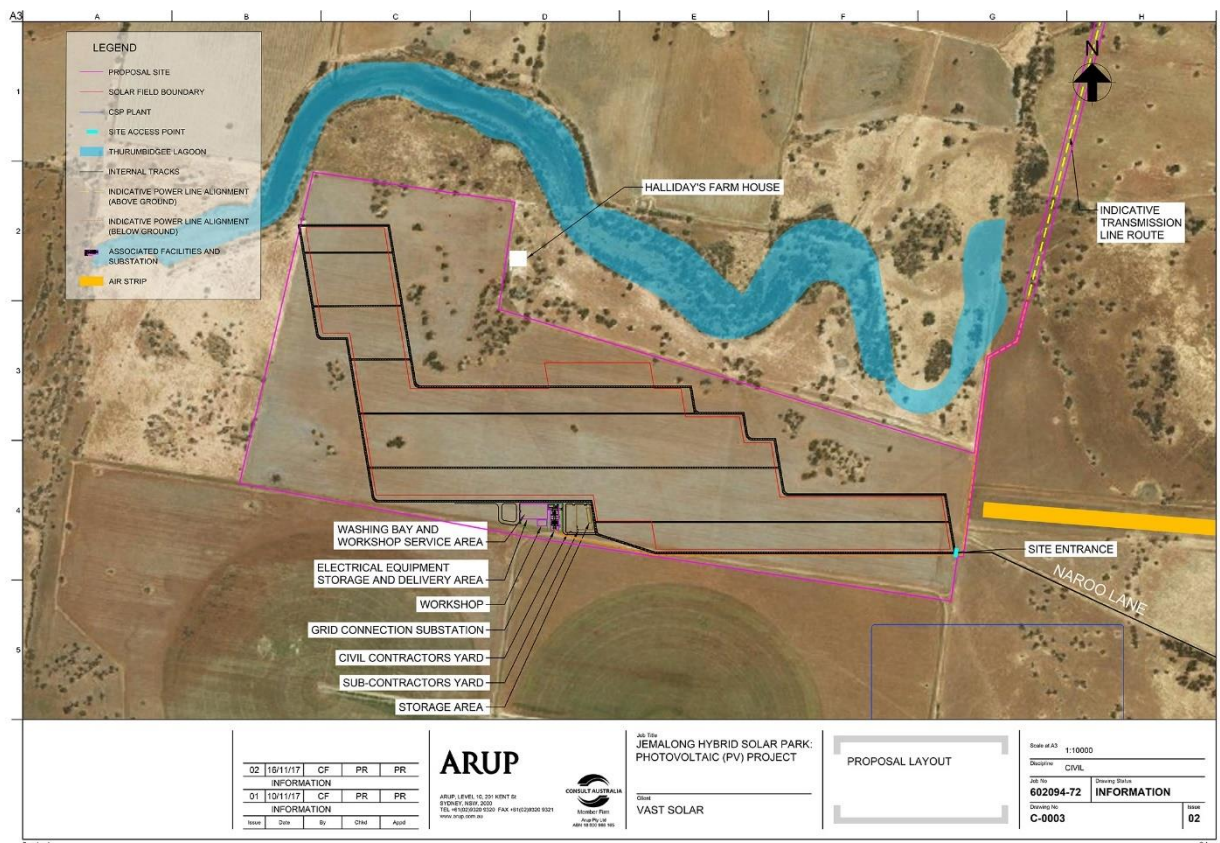


Figure 1: Existing approved solar array footprint



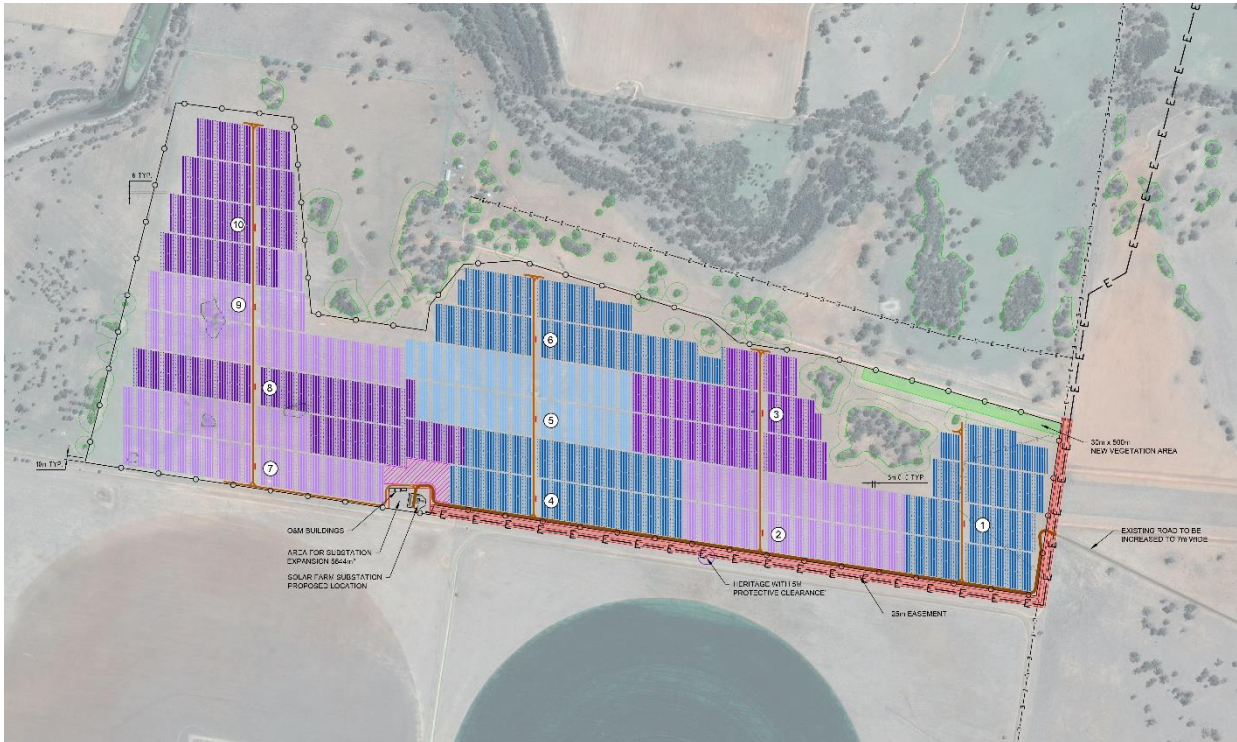


Figure 2: Modified solar array footprint

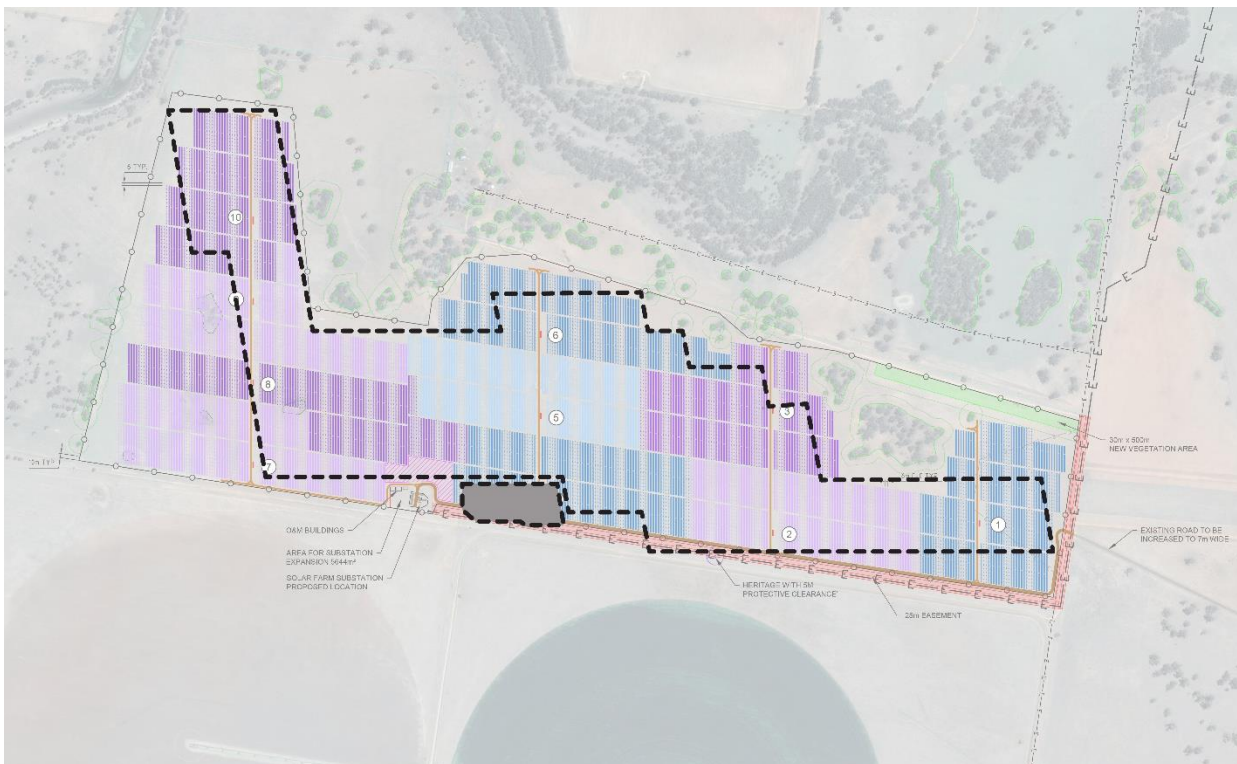


Figure 3: Modified solar array footprint (shown faded) with existing approved footprint shown dashed. The grey hatch area indicates the previous area for workshop and workshop service area, storage, electrical equipment, substation area.

### 3.3 Solar Panels and Inverters

The VIA is based on solar panels 2544mm in height and the inverter stations 3200mm in height.



## 4 VISUAL IMPACT ASSESSMENT OF MODIFICATIONS

### 4.1 Methodology

Due to the infeasible nature of completing an assessment for each individual visual receiver within a 4km radius, this report considers the existing visual receivers (viewpoints) identified in the approved VIA and identifies where a change to the established visual impact has occurred as a result of the modification. The changes are assessed in the same methodology as the original report prepared by Fresh Landscape Design. The assessment methodology is based on the process described by the Landscape Institute and Institute of Environmental Management and Assessment (IL & IEMA 2013) and Tudor (2014). The two major components of the assessment include; a baseline study and an impact assessment. The baseline study prepared by Fresh Landscape Design establishes an inventory of the existing landscape character and values in the places from where the development may be visible. The visual impact assessment prepared by Fresh Landscape Design describes for the available views, the changes in visual character and visual amenity that are expected to result from the development.

The original report identified a series of observation points in the study area to sample views that might be affected by the proposed development, refer Figure 4.

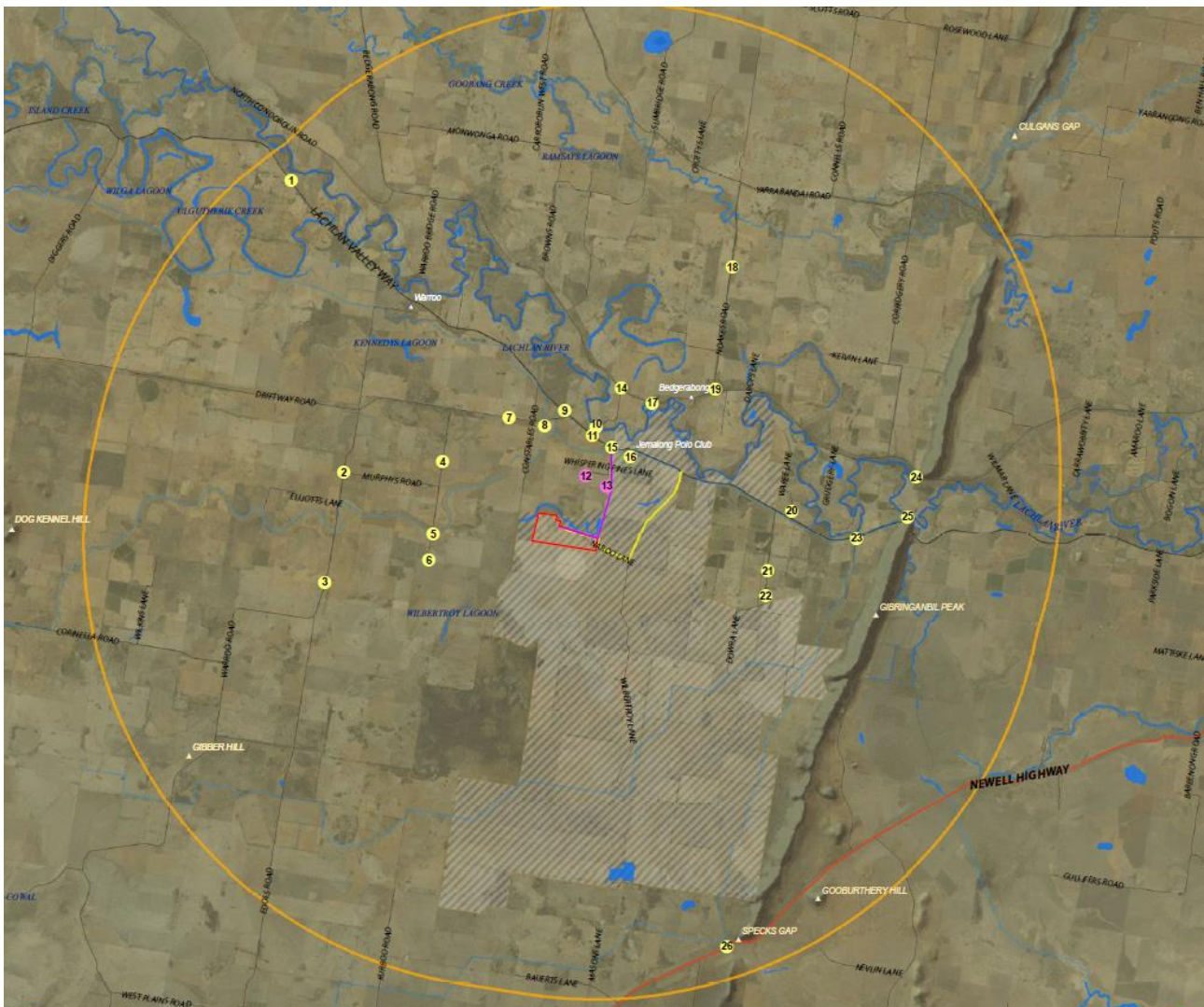


Figure 4: Established viewpoints – refer [1] for established viewpoint locations.

**Table 1: Assessment of visual impact changes** below outlines the visual impact significance established in the approved VIA, and then identifies whether the modified proposal creates any change to the visual impact.

**Table 1: Assessment of visual impact changes**

Established Viewpoint [1]	Existing VIA Visual impact significance [1]	Modified proposal Visual impact significance
V1 – Lachlan Valley Way 1	Not significant (minimal visual effects due to distance to development)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V2 – Murphys Road	Not significant (visual effects unlikely to be seen from this viewpoint)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V3 – Waroo Rd	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V4 – Willawang Road 1	Not significant (visual effects are relatively small, generally not seen by highly susceptible viewers, heliostat glare is unlikely and mitigation opportunities exist if required).	The visual impact significance remains as not significant. Heliostats are no longer part of the solar array design. The modified footprint does not increase the visibility of the proposal.
V5 – Willawang Road 2	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V6 – Willawang Road 3	Not significant (visual effects will be relatively small in scale and generally not seen by highly susceptible viewers)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V7 – Driftway 1	Not significant (visual effects unlikely to be seen or will be relatively small in scale and viewed for short durations)	The visual impact significance is relatively unchanged from the original assessment. Where the modified solar array footprint includes panels in the south-west corner of the site, these panels may be visible. There is a potentially minor 5% increase in visual impact.
V8 – House - Driftway	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V9 – Lachlan Valley Way 2	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.

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V10 – Hodges Road	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V11 – House – Lachlan Valley Way	Not significant (visual effects unlikely to be seen to be seen from the houses and are small in magnitude for travellers)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V12 – House 1 – Whispering Pines Lane	Significant (visual effects of JSS1 extend across the breadth of the view but are relatively small in height, viable mitigation opportunities are available and landowner is unconcerned)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V13 – House 2 – Whispering Pines Lane	Significant (visual effects of the transmission line will contrast with existing elements and be viewed for extended lengths of time from the house and garden, visual effects of JSS1 will be not significant because of the small proportion of view occupied by the development)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V14 – North Condobolin Road West	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V15 - Substation	Not significant (visual effects unlikely to be noticed)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V16 – Jemalong Polo Club	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V17 – Bedgerabong West	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V18 – Noakes Road	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V19 – Bedgerabong East	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.

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V20 – Waree Lane	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V21 – Dowra Lane North	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V22 – Dowra Lane South	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V23 – Specks Lane	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V24 – North Condobolin Road East	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V25 – Jemalong Weir	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.
V26 – Newell Highway	Not significant (visual effects unlikely to be seen)	The visual impact significance is unchanged from the original assessment. The modified footprint does not increase the visibility of the proposal.

## 5 VIA MITIGATION MEASURES

The following mitigation measures are proposed to manage and minimise the impacts on visual amenity by the proposed solar farm:

Measure	Feasible	Effective	Reliability
Selection of solar panels which minimise the potential for off-site visual impacts such as glare or reflection. If glare or reflection is experienced on neighbouring properties, install shade material on security fence in targeted locations.	Yes	Immediately	Excellent
Establish and maintain a mature vegetated buffer with a variety of endemic species capable of providing effective screening (within 5 years) of the solar panels and ancillary infrastructure (excluding overhead powerlines) at the location outlined in Figure 1 of the Development Consent SSD 8803.	Yes	Within 3-5 years	Good
All external lighting is low intensity (except where required for safety or emergency purposes)	Yes	Immediately	Excellent
All external site lighting does not shine above the horizon	Yes	Immediately	Excellent
All lighting complies with AS4282 (int) 1997 – Control of obtrusive effects of outdoor lighting, or it's latest version	Yes	Immediately	Excellent
Screen planting south of house area at V12 House 1 – Whispering Pines Lane to screen views to receiving towers	Yes	Within 3-5 years	Good
Locate new transmission line poles to minimise impacts of views from House 2 in Whispering Pines Lane	Yes	Immediate	Excellent
Select colours for above ground structures, including the construction site offices, sympathetic to the landscape character of the site and surrounding	Yes	Immediate	Excellent
Not mount any advertising signs or logos on site, except where required for identification or safety purposes	Yes	Immediate	Excellent



## 6 CONCLUSION

A key consideration in the assessment of the visual impact of the proposal will be the perception of local residents to elements that evoke a variety of responses. Whilst the degree to which a project the scale of the proposal is visible from certain vantage points can be quantified, the degree to which the viewers will be impacted is influenced by an individual's perceptions of what change will bring. The residents and users of the landscape surrounding the site will reflect a range of sensitivities. The degree to which the changes to the landscape are perceived negatively will depend on the actual users / residents.

As stated earlier in the introduction, this report considers the viewpoints established within the approved Visual Impact Assessment and does not consider other visual impacts. The largely flat nature of the locality, assists greatly in mitigating views to the proposal due to the lack of prospect from the visual receivers.

In consideration of the above methodology relative to the visual receptors (viewpoints) assessed herein, in all cases the modifications to the project will have a negligible range of visual influence.

## 7 REFERENCES

1. Fresh Landscape Design, 2015 Visual Impact Assessment Jemalong Solar Station 1 Jemalong, NSW, Issue July 2015

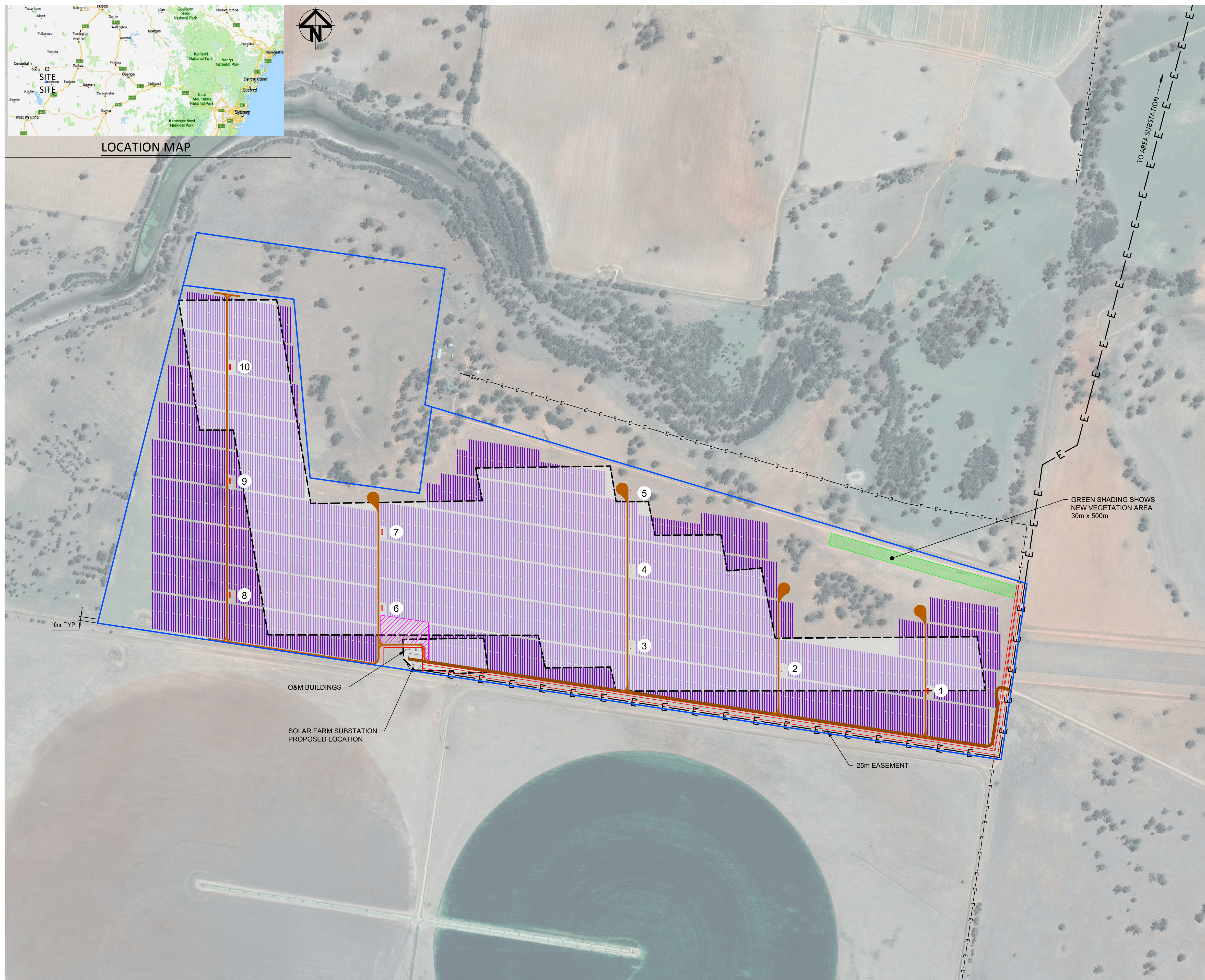
## 8 APPENDIX

## **Appendix A: TC-13589 GENEX – Jemalong Solar Farm General Site Layout Plan**






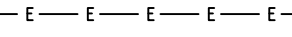
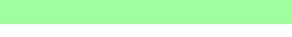








## LOCATION MAP



# JEMOLONG SOLAR FARM SITE LAYOUT PLAN

PLAN REF: 142097  
SCALE: 1:5000 @ A1  
DATE: JULY 2019  
CLIENT: GENEX

## LEGEND

- |   |   |
|---|---|
|  | NEW OVERHEAD LINE                           |
|  | EXISTING OVERHEAD LINE                      |
|  | VEGETATION WITH 30m CLEARANCE               |
|  | 4m ACCESS ROADS                             |
|  | EXISTING OVERHEAD LINE DIVERTED UNDERGROUND |
|  | PROPOSED LAYDOWN AREAS                      |
|  | INVERTOR STATION                            |
|  | BLOCK NUMBER                                |
|  | SITE BOUNDARY                               |
|  | ORIGINAL DESIGN                             |
|  | REVISED DESIGN                              |

GREEN SHADING SHOWS  
NEW VEGETATION AREA  
30m x 500m

O&amp;M BUILDINGS

SOLAR FARM SUBSTATION  
PROPOSED LOCATION

25m EASEMENT



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