JEMALONG SOLAR MODIFICATION REPORT

SSD 8803

E&W Project Number: 18271
Jemalong Solar Farm
Modification Report
3.0
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1 INTRODUCTION

1.1 Background

The Jemalong Solar Farm (the Proposal site) is a 50 Megawatts (MW AC) capacity photovoltaic (PV) plant and comprises a substation, solar panel array, internal access tracks, and a corridor for a 66kV power line. The Proposal site is located at Jemalong Station, a 15,478 hectare (ha) rural property within the Forbes local government area.

Development consent for the Jemalong Solar PV Plant (the Proposal) was originally issued by the NSW Department of Planning and Environment on 18 May 2018 (Approval SSD 8803), and allows for the construction, operation and decommissioning of the solar plant. The development consent considered the *Jemalong Hybrid Solar Park: 50MW Solar Photovoltaic (PV) Plant Environmental Impact Statement* (EIS) prepared by NGH Environmental (November 2017) for the original proponent, Vast Solar Pty Ltd (Vast Solar). Vast Solar also submitted a modification to amend the approved subdivision layout of Lot 13 in DP 753118, which involved the adjustment of lot sizes and boundary lines and was approved on 27 July 2018.

On 11 March 2019, the Jemalong Solar Project was acquired by Genex Power from Vast Solar, with Genex Power becoming the new proponent for the Proposal and subsequently for this modification.

Consultation has occurred between Genex Power and key stakeholders to discuss the modifications to the Proposal, as well as the implications of acquisition. These meetings include:

- 26 February 2019: Department of Planning and Environment (Resource and Energy Assessment), Genex Power and RPS;
- 12 March 2019: Office of Environment and Heritage Dubbo (Planning – North West), Genex Power and RPS; and
- 18 March 2019: Forbes Shire Council and Genex Power.
- 15 July 2019: 97 Whispering Pines Lane (non-associated neighbouring resident)
- 15 July 2019: 107 Whispering Pines Lane (non-associated neighbouring resident).

1.2 Aim and scope of this modification

The aim and scope of this modification report is as follows:

- Describes the proposed modification;
- Identifies and assesses any changes to the nature and level of impacts that would occur as a result of the proposed modification; and
- Considers whether additional mitigation strategies would be required to manage and minimise the impacts of the proposed modification.

2 MODIFICATION DESCRIPTION

2.1 Proposed modification

A refinement of the solar array has occurred throughout the detailed design process of the Proposal.

The key elements of the modification to the Proposal include:

- An adjustment of the solar array positions to incorporate an area within the south-western portion of the approved site boundary; and
- Solar arrays shifted closer towards the southern boundary to increase the setbacks from vegetation and lagoon retained to the north of the array.
- Minor expansion of the western, and eastern corners of the array footprint, within the approved project boundary
- Removal of one paddock tree (refer to Plate 1)
- Retains the substation and construction to the southern boundary of the site, as approved.

Detailed design has indicated that approximately 160,000 solar modules (panels) would be installed as part of the Proposal. While the modification assesses solar arrays within additional areas of the Proposal site, development consent (SSD 8803) has provided approval for up to 170,000 solar modules as stated in the EIS. Therefore, the modification is consistent with the relevant approval.

Figure 1 illustrates the current array footprint with the expanded footprint shown in the darker purple colour.

In terms of further specifications, the height of the panels will be less than the approved height of up to 3.5m. with the indicative maximum height reaching 2.544m as shown in Figure 2 below.

The maximum height of the inverter stations will be approximately 3200mm, which is 200mm above the previous design. Given the insignificance of this height variance, it has been determined that this will have no additional impact.

The modification of the Proposal does not involve works outside of the established Proposal site as approved in the original consent and the modified consent. Given the minor nature of the change being proposed in this application, the previous environmental investigations remain valid with no changes to the conditions required. The approved generation capacity of the Proposal will be maintained, and the substation and construction to the southern boundary of the Proposal site remains as approved. The revised solar array footprint is attached as Appendix B.

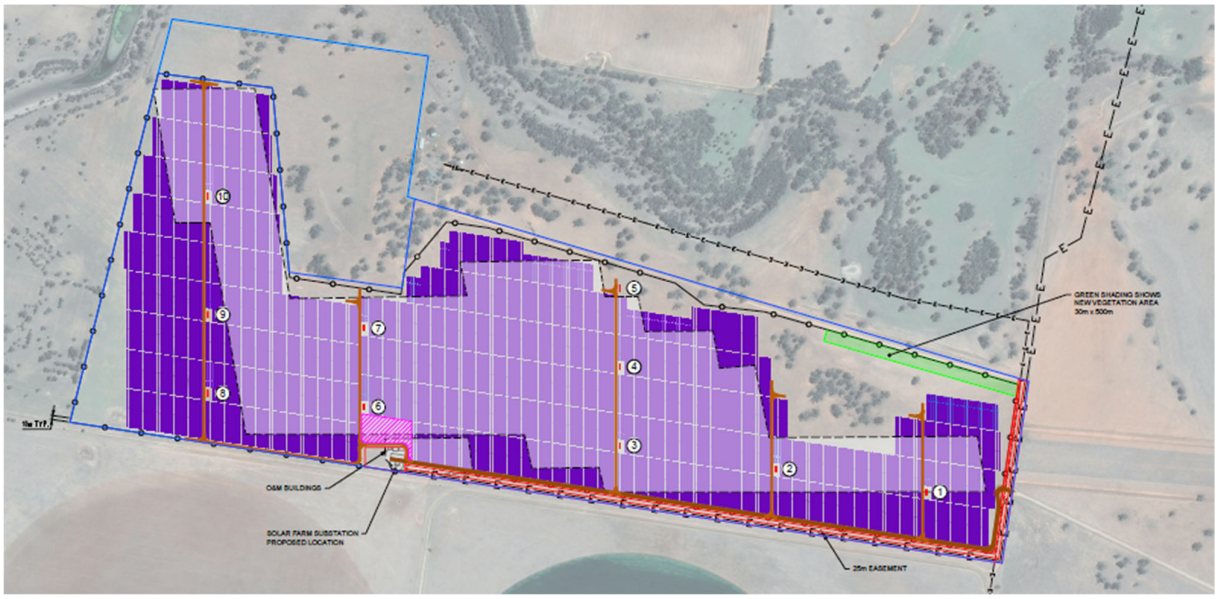

Figure 1 - Revised Array Footprint

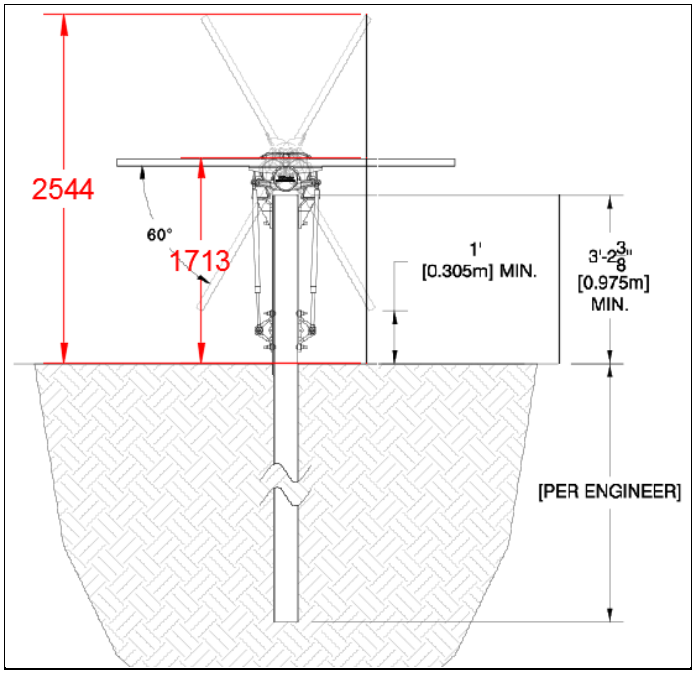

Figure 2 - Indicative maximum height of the tracking solar panels

2.2 Technical Considerations

2.2.1 Flooding

It is acknowledged the current consent also includes the construction of an approved Levee to protect the solar array.

Following an updated flooding assessment, included in Appendix D, the proponent has elected to not proceed with the construction of the approved levee to the north of the development. The existing flood levees will remain and there is no benefit to the project in constructing the approved levee (illustrated on the current consent).

More specifically, the most recent flood modelling has been carried out based on the current floodplain and existing levees.

The updated flooding assessment confirms *"…the potential changes in flood depth upstream of the site is up to 5cm in a 'worst case' and 3cm in a 'realistic' case and the landscape uses adjacent to the site of broadscale agriculture, the flood impacts impact of the PV field is not significant."*

The updated assessment is understood to result in an improved scenario as the mitigation measures proposed show a reduced freeboard to the PV panels from 0.5m down to 0.3m.

This analysis showed that by retaining the existing flood regieme the solar PV panels will be above the 1990 flood level and appropriate freeboard will be achieved for electrical and mechanical infrastructure. In the flood affected area of the proposal site, all cabling will be suspended from the supporting frame of the PV panel structure (no trenching for cabling is proposed in this location). Associated infrastructure, such as inverters will continue to be elevated on localised earth pads or similar to ensure they remain flood immune.

2.2.2 Biodiversity Conservation Act 2016

2.2.2.1 Existing Environment

The Proposal area has been subject to a history of disturbance including land clearing, cropping and livestock grazing. These agricultural practices have resulted in the removal and modification of native vegetation historically occurring within this part of the landscape [i.e. PCT 244; NGH Environmental (2017)]. The only indicator of prior native vegetation cover is exemplified by a single isolated paddock tree (Plate 1), with the location of this tree occurring within both the Proposal area and approved Project area as shown in Figure 3 (i.e. native vegetation cover).

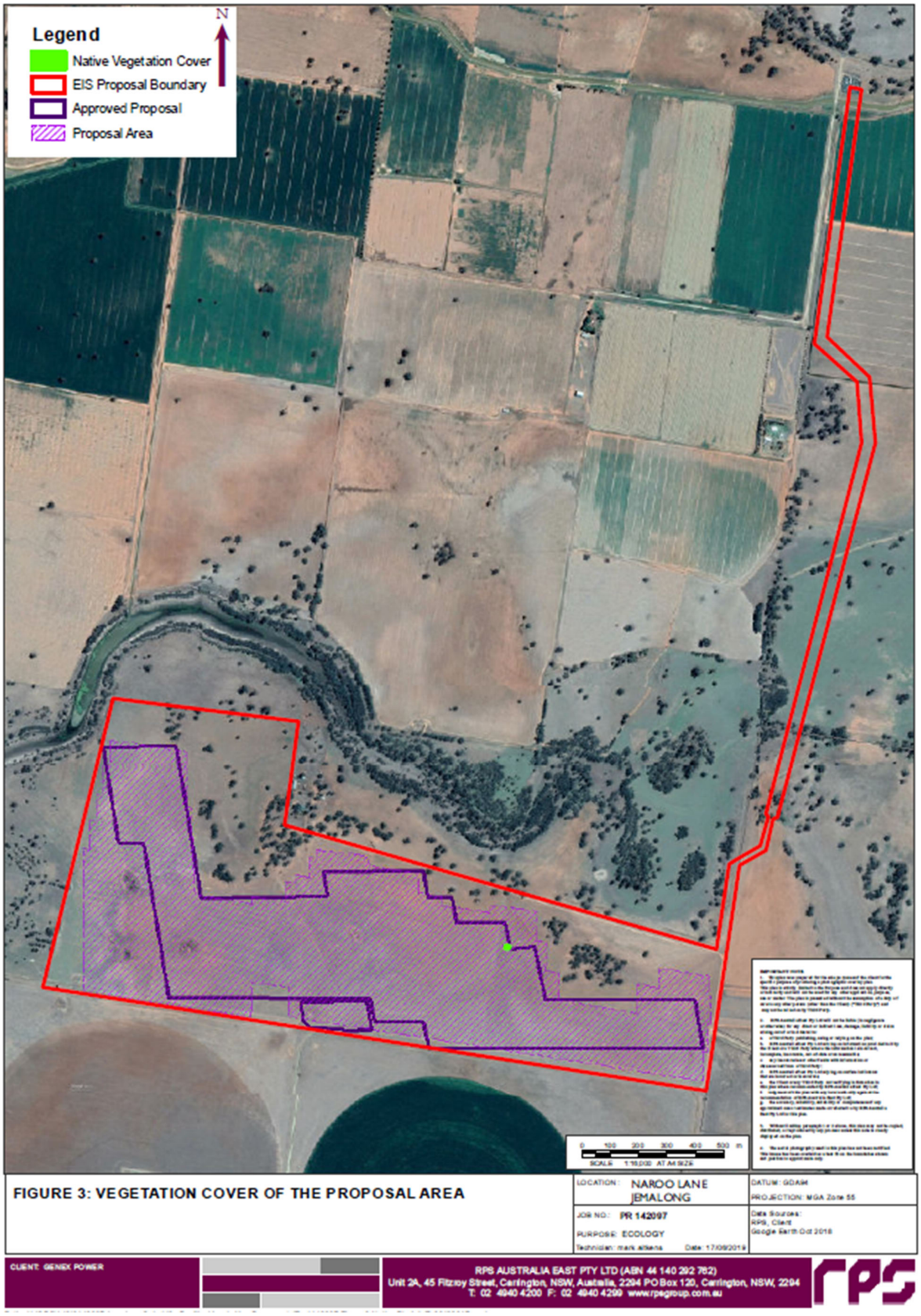

Figure 3 – Vegetation Cover

Plate 1 Single Paddock Tree within Proposal area

As shown in Plate 1, the groundcover stratum is highly modified by land use (i.e. livestock trampling). Native and exotic groundcover species occur in very low densities beneath the dripline of this tree canopy, which is generally uncharacteristic of naturally occurring and undisturbed patches of PCT 244.

Generally, it is considered that the vegetation integrity of this patch of PCT 244 (i.e. single tree) is poor as indicated by the following existing impacts:

- Isolation – vegetation is isolated by routine cropping and livestock grazing. This paddock tree provides almost no value for wildlife movements;
- Patch size – is very small (i.e. ~0.02 ha) and is significantly smaller than other proximal patches (i.e. 0.19 ± 0.15). This exposes the patch to the influence of edge effects and significantly erodes vegetation integrity;
- Species composition – native species richness is very poor and limited to common species tolerant of agricultural landscapes. Groundcover species characteristic of PCT 244 are largely absent; and
- Structure – The typically grassy herbaceous groundcover is adversely impacted by livestock trampling. This is atypical of naturally occurring patches of this vegetation type.

2.2.2.2 Assessment of Biodiversity Values

An assessment against the biodiversity values in Section 1.5 of the *Biodiversity Conservation Act* 2016 (BC Act) and Clause 1.4 of the *Biodiversity Conservation Regulation* 2017 (BC Regulation) is provided in Table 1. This information supports the conclusion that the modification will not increase the impact on biodiversity values.

Table 1: Assessment of Biodiversity Values

Relevant Sections	Description	Assessment
BC Act (2016) Section 1.5 Biodiversity and biodiversity values for purposes of Act	*(1) For the purposes of this Act, biodiversity is the variety of living animal and plant life from all sources, and includes diversity within and between species and diversity of ecosystems.*	The proposal involves removal of one paddock tree with sparse native and exotic understorey (see Section 2.2.2.1). As this vegetation occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
BC Act (2016) Section 1.5 Biodiversity and biodiversity values for purposes of Act	*(2) For the purposes of this Act, biodiversity values are the following biodiversity values:* *a. vegetation integrity—being the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state,*	The proposal involves removal of one paddock tree with sparse native understorey. The vegetation integrity (i.e. composition, structure and function) of this patch is very poor (i.e. <15) due to past clearing for agriculture and ongoing land uses of the area (i.e. cropping and livestock grazing). As this vegetation occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	b. habitat suitability—being the degree to which the habitat needs of threatened species are present at a particular site,	The proposal would involve removal of one paddock tree with sparse native understorey. This tree offers potential habitat to hollow-associated Candidate Species, as assessed in the Project EIS. The approved Project has conditions of consent relating to the loss of these hollows. As this vegetation and habitat occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	c. biodiversity values, or biodiversity-related values, prescribed by the regulations.	See below

BC Regulation (2017) Additional biodiversity values (Clause 1.4 of the Regs)	*The following are prescribed as additional biodiversity values for the purposes of the Act:* *a. threatened species abundance—being the occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site,*	Threatened fauna were detected within the area assessed in the Project EIS. No threatened flora or threatened ecological communities were identified in that study. The Superb Parrot (*Polytelis swainsonii*) and Corbens Long-eared Bat (*Nyctophilus corbeni*) were identified in the Project EIS area and were assessed as part of the approved Project. The approved Project has conditions of consent relating to the loss of habitat for these species. As these matters have been assessed as part of the Project EIS for the approved Project (i.e. has already been assessed), reassessment of these biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	b. vegetation abundance—being the occurrence and abundance of vegetation at a particular site,	The proposal would involve removal of one paddock tree with sparse native understorey only (see Section 2.2.2.1). As this vegetation occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	c. habitat connectivity—being the degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range,	The Proposal is unlikely to significantly impact connectivity of habitat of threatened species that facilitate the movement of those species across their range, As this vegetation and habitat occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	d. threatened species movement—being the degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle,	As outlined in c) above, the Proposal is not likely to have an impact on habitat connectivity to the extent that would adversely impact threatened species movement. As this vegetation and habitat occurs within the area mapped in the Project EIS for the approved Project (i.e. has already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
	e. flight path integrity—being the degree to which the flight paths of protected animals over a particular site are free from interference,	As outlined in c) above, the Proposal is not likely to have an impact on habitat connectivity to the extent that would adversely impact threatened species movement. As this vegetation and habitat occurs within the area mapped in the Project EIS for the approved Project (i.e. has

		already been assessed), reassessment of biodiversity values (and hence further offsetting) is not required (see Section 2.2.2.2).
f.	*water sustainability—being the degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site.*	The Proposal is unlikely to significantly impact water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities. These matters were mapped and assessed in the Project EIS. The approved Project (i.e. has already been assessed) has adequately considered this matter and does not require reassessment as the Proposal is not likely to have a greater and/ or altered impact on these matters.

2.2.2.3 Regulatory Requirements

A Biodiversity Development Assessment Report (BDAR) waiver is not a requirement for modifications.

Nonetheless, the proposed modification is to occur within the Proposal Site boundary, as mapped and assessed in the Project EIS for the approved Project and is to occur on lands where there is no native vegetation or biodiversity values requiring formal assessment. As such, a further biodiversity development assessment report is not deemed required as per section 7.17 2(c) of the BC Act, which states that ”*a further biodiversity development assessment report is not required to be submitted if the authority or person determining the application for modification (or determining the environmental assessment requirements for the application) is satisfied that the modification will not increase the impact on biodiversity values*.’

The rationale supporting this is:

1. The land has and continues to be cropped and grazed for agricultural purposes as shown in Figure 3;
2. The land is consistent with the definition for Category 1 Exempt land as defined under 60H of the *Local Land Services Act* 2013;
3. Biodiversity matters were previously assessed in the EIS for the approved Project and do not require re-assessment; and
4. There are no impacts on biodiversity values to which biodiversity offsets scheme applies, as defined under Section 6.3 of the *Biodiversity Conservation Act* 2016 including any prescribed impacts described by the *Biodiversity Conservation Regulation* 2017.

Therefore, a Biodiversity Development Assessment Report is not deemed to be required to accompany the application for the proposed Modification.

2.2.3 Engagement with Neighbours

As part of the process for amending the footprint of the array, Genex has continued to consult with the two associated neighbours to the project, being:

- Twynam; and
- Optifarm.

Genex has also consulted with the two non-associated neighbouring residents to the north of the project, located at Whispering Pines Lane (refer to Appendix A Constraints Plan 1):

- 97 Whispering Pines Lane; and
- 107 Whispering Pines Lane

Both non-associated landholders have no objection to the revised development footprint, with signed letters confirming their consent included in Appendix E.

2.2.4 Heritage

In recognition of the cultural heritage values that were identified within the in the originating EIS for the project, Genex has sought an updated consideration of whether the expanded array footprint will impact upon the identified cultural heritage values. The advice received from NGH Environmental concluded the Aboriginal heritage objects are unlikely to impacted upon by the modification.

The advice provided by NGH Environmental is included in Appendix F.

2.2.5 Visual Impact

In light of the expanded footprint of the array, an updated Visual Impact Assessment report has been commissioned to consider and demonstrate the revised footprint of the array does not offend any of the considerations previously made as part of the originating consent.

The updated assessment considered the visual receptors/observation points that formed part of the assessment in the original consent and mitigation measures. The reassessment of the revised array indicated the revised array footprint and mitigations measures are unlikely to result in any perceivable change from that of the currently approved solar array. The revised Visual Impact Assessment is included in Appendix G.

2.3 Assessment of changes and impacts

An assessment was undertaken to assess whether the modification would result in any changes to the approved project or additional impacts to the surrounding environment by comparing the proposed modifications against the findings of the EIS and the Conditions of Approval. The assessment is summarised in Table 2 below.

Table 2: Assessment of the changes and environmental impact

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
8.1	Biodiversity	Condition 13 requires the delivery of a biodiversity offset and Condition 14 requires a Biodiversity Management Plan for the managed removal of vegetation.	Condition 13 can be retained unaltered as a result of the proposal.
8.2	Aboriginal Heritage	Conditions 20 – 22 require the protection of identified cultural heritage sites, requirements surrounding the discovery of human remains and the requirement of a Chance Finds Protocol. Jemalong Locale 6 is the only cultural heritage find that is located directly adjacent to the solar array. In the new footprint of the array, a 5m exclusion zone is provide around the item during construction. The array will be setback a further 20m (25m in total) from Jemalong Locale 6.	RPS Suggestion: Jemalong Locale 6 will have a temporary fence provided around the item during construction to satisfy Condition 20 of the consent. The Proponent is currently developed a Cultural Heritage Management Plan which addresses Conditions 20-22 and particularly addresses plans to ensure Jemalong Locales 1 – 6 are not disturbed through the operation of the development.
8.3	Visual Amenity and Landscape Character	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 of this scale is visible from certain vantage points and can be quantified, the degree to which the viewers will be impacted is influenced by an individual's perceptions of what the change means to them and their views of the development. 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. The VIA report considers the viewpoints established within the approved Visual Impact Assessment and does not consider other visual impacts. The modifications to the project will have a negligible range of visual influence. Moreover, 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.	Proposed mitigation measures are outlined in Section 5 of the updated Visual Impact Assessment (Appendix C). The mitigation measures include: • Screen planting to the south of house area V12 House 1. • All lighting complies with AS4282 (int) 1997 – Control of obtrusive effects of outdoor lighting, or it's latest version. • Use of low intensity lighting. • Establish and maintain a vegetated buffer, which is consistent with the buffer nominated in Figure 1 of SSD8803. Buffer to be 500m long x 30m wide. • Select PV panels that minimise reflection or glare.

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
8.4	Hydrology (including Flooding)	The impact of the proposed PV panel supports on the floodplain, in terms of a surface roughness change is minimal. Based on a one dimensional hydraulic model, the proposed PV array and associated supports increase flood levels for the 1952 event (0.5% AEP) from 3cm to up to 5cm, and for the 1990 (4% AEP) event up to 2cm around and immediately upstream of the site. This is not considered significant given the change in depth and the land use over the impacted area and model accuracy. No modification of existing flood control levees are proposed. Given that the impact of the array on the floodplain is not significant and therefore far reaching, the proposal can be considered 'complying works' under the Flood Management Plan (FMP OEH, 2012). Although the impact is minor, a flood work approval may still be required under the Water Management Act 2000 and the Water Management (General) Regulation 2018. The design of the PV arrays and associated infrastructure should ensure: • The panels themselves are at a minimum 0.3m above the 1990 (4% AEP) flood level. • That mechanical/electrical components for the arrays have appropriate freeboard/flood protection based on Genex's operational risk assessment. • That grid connection infrastructure such as inverters and transformers are protected from flooding with a minimum 0.3m freeboard from the 1990 event, or higher based on Genex's operational risk assessment	A flood work approval may be required under the Water Management Act 2000 and the Water Management (General) Regulation 2018. To ensure the impacts of the PV field on flooding is limited, the panels shall be a minimum 0.3m above the 1990 (4% AEP) event when in the horizontal position. A fail-safe mechanism or procedure will need to be incorporated into the design to ensure that panels are placed in the horizontal plane in a flood event to maximise flood protection and limit flood interaction.
9.1	Soils and landforms	Works associated with the proposed infrastructure or access have been considered in the EIS. Additional scope that has the potential to impact soils and erosion includes the positioning of solar arrays and associated access tracks for the array in the south-western corner of the proposal site. The soils in the Proposal area have been identified in the EIS as being susceptible to erosion due to a history of land disturbance due to agricultural activities. In particular, evidence of minor erosion was identified around Naroo Lane.	Condition of Approval (CoA) 24 states: *The Applicant must:* *(a) minimise any soil erosion associated with the construction, upgrading or decommissioning of the development in accordance with the relevant requirements in the Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual, or its latest version;* *(b) ensure the solar panels and associated infrastructure are designed, constructed and maintained to avoid causing any tunnel erosion on site.*

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
			This Condition enables the erosion risks associated with the proposed changes in scope to be mitigated in line with the requirements of the *Managing Urban Stormwater: Soils and Construction (Landcom, 2004)* manual. The design, construction and maintenance of the solar panels must also avoid causing any tunnel erosion. This condition, as well as the management recommendations in the EIS would ensure soil disturbance is kept to a minimal in areas of higher localised salinity or sodicity, deep rooted vegetation and ground cover would be maintained where possible and the containment and stockpiling of subsoils would be undertaken in a manner to avoid dispersion and sediment transfer.
9.2	Water Use and water quality	No Change proposed	No Change to conditions
9.3	Noise and vibration	The revised array footprint of the Proposal area will not have an impact on nearby sensitive receivers as the footprint is now further south from the closest receivers to the north. The construction activities proposed in the Modification Proposal are consistent with those identified in the EIS. The EIS identified that the construction activities are unlikely to exceed the Noise Management Level (NML) for standard work hours at all receivers. This was calculated using the *NSW Interim Construction Noise Guideline* (DECC, 2009). The operational noise impact also remains consistent with the approved EIS as the distance between the facility and the closest sensitive receiver has not been reduced.	There are no additional noise impacts proposed as part of the proposed modification. CoA 16 states: *The Applicant must minimise the noise generated by any construction, upgrading or decommissioning* *activities on site in accordance with the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version.* This condition would ensure that the changes to the array footprint would not impact nearby receivers by ensuring the daytime NML is not exceeded.

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
9.4	Social and economic impacts	The proposed modification would not generate any adverse socioeconomic impact during construction or operation as the Proposal features remain consistent with the EIS.	The Environmental Management Strategy to be implemented under CoA 1 must include strategies to keep the local community and relevant agencies informed about the operation and environmental performance of the development. Due to the negligible impact associated with the proposed modification, this CoA is sufficient to address the changes of the site layout.
9.5	Traffic, transport and road safety	The implications of the proposed development on the local traffic network has been assessed with the subsequent imposition of Condition 9, which requires the Applicant to prepare a Traffic Management Plan. The proposed expanded footprint of the solar array does not result in any changes to traffic, as no additional equipment or materials are required as a result of the expanded footprint (including panels, pilings, trackers, etc.). Thus, the modification is not expected to result in additional traffic impacts. The requirements of Condition 9 are considered to remain relevant to the modified proposal and ensures the traffic associated with the construction and operation of the development is appropriately managed.	Condition 9 to remain as per the existing consent.
9.6	Hazards	The proposed modification does not include changes to the substation or transmission and power lines and maintains the approved generation capacity of the development. As such, it is not expected to generate additional magnetic fields or glint / glare than what has been outlined in the EIS.	Any potential hazards would be managed through the mitigation measures outlined in the EIS and Response to Submissions. In addition, CoA 25 and 26 outline the requirements for storage and handling of dangerous goods and operating conditions. These measures are considered sufficient and therefore no additional mitigation measures are required.
9.7	Fire and Bushfire Issues and Impacts	The proposed modification has shifted the solar arrays closer to the southern boundary to increase setbacks from vegetation retained to the north of the proposal site. All other components of the proposal site remain consistent with the EIS and approved development. As a result, it is unlikely that the proposed modification	Any potential fire and bushfire risks would be minimised and managed through the mitigation measures outlined in the EIS and Response to Submissions. Additionally, CoA 27 states:

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
		would result in greater fire and bushfire risks to the proposal site and surrounding environment.	*Prior to the commencement of operations, the Applicant must prepare a Fire Management and Emergency Response Plan for the development in consultation with the RFS and Fire & Rescue NSW*. This condition would ensure that the changes to the solar array footprint wold not result in greater fire and bushfire risks.
9.8	Historic heritage	The proposed modification would not impact on any listed heritage items as there are no historic heritage items within the Proposal site and no changes proposed to the existing boundary.	As there are no impacts to historic heritage, mitigation measures outlined in the EIS and the Response to Submissions are sufficient to address the changes of the site layout.
9.9	Air quality and climate	The proposed modification does not include additional construction activities that would result in air quality impacts to the surrounding environment. Additionally, the nearest residential sensitive receiver is approximately 1.7km to the west of the proposal site and therefore substantive air quality impacts are not anticipated. The proposed modification allows for solar arrays to be located on additional areas within the proposal site, capitalising on its energy capture potential and resulting in a positive climate impact.	CoA 18 states: *The Applicant must minimise dust generated by the development*. Any air quality impacts would be minimised and managed through measures outlined in the EIS and Response to Submissions. These are considered sufficient for the Proposal. No additional mitigation measures are required.
9.10	Land use and resources	The proposed modification involves positioning the solar arrays to incorporate the south western area of the site, utilising available land for energy generation. No additional resources would be required for the propose modification, and all changes are within the approved site boundary and do not affect the existing boundary. As such, the proposed modification is not anticipated to result in additional impacts on land use and resources within the surrounding environment than what has been assessed in the EIS and Response to Submissions report.	Any impacts to land use and resources would be minimised and managed through the mitigation measures outlined in the EIS and Response to Submissions report. As the proposed modification is not anticipated to result in additional impacts, these mitigation measures are considered sufficient for the proposal.
9.11	Waste	The proposed modification would not generate any additional waste or contamination as outlined in the EIS. The Proposal involves the inclusion of solar panels in additional areas within the site boundary, and the amount of these solar panels is consistent with the EIS.	Any waste generated by the Proposal would be minimised and managed through the implementation of a Waste Management Plan, as outlined in the EIS and Response to Submissions. No additional mitigation measures are required.

Relevant EIS section	Environmental factor	Comment	Safeguard and mitigation measures
9.12	Cumulative impacts	The proposed modification would not result in additional construction activities then what has been previously approved and is unlikely to contribute to additional cumulative impacts within the surrounding area.	Any cumulative impacts contributed to by the Proposal would be managed through the preparation and implementation of construction managed plans, as outlined in the EIS and Response to Submissions. No additional mitigation measures are required.

3 CONCLUSION

This modification report outlines a proposal to adjust the positions of the solar arrays to incorporate an area within the southwestern portion of the approved site boundary, while also shifting the arrays closer to the southern boundary.

A review of the flood impacts has considered the existing situation to understand whether there is any benefit to constructing the approved flood levee to the north of the project. The modelling has determined there is no benefit to constructing the levee as:

- the impact of the array on the floodplain is not significant and therefore not far reaching
- the proposal can be considered 'complying works' under the Flood Management Plan (OEH, 2012)
- Appropriate freeboard can be achieved for the PV panels, electrical and mechanical infrastructure.

While the impact is minor, a flood work approval may still be required under the Water Management Act 2000 and the Water Management (General) Regulation 2018.

The assessment has found that the proposed changes to the solar array are generally consistent with the current development consent (SSD 8803) and would not impact the approved project. The additional areas of solar arrays may result in additional impacts to the Proposal site and surrounding environment, however the existing Conditions of Approval and mitigation measures outlined in the EIS and *Jemalong Hybrid Solar Park: 50MW Solar Photovoltaic (PV) Plant Response to Submissions Report* (February 2018) are expected to be sufficient to mitigate any potential impacts, along with the Safeguard and Mitigation Measures proposed in Table 2 above .

Appendix A

Context and Site Constraints Map

Appendix B

Proposed Site Footprint Layout Plan

Appendix C

Updated Flood Constraint Map

Appendix D

Updated Flood Impact Assessment

Appendix E

Landholders Consent

Appendix F

Updated Heritage Impact Assessment

Appendix G

Updated Visual Impact Assessment