

Attn: Claire Driessen
Edify Energy
Level 1, 33-35 Palmer Street
South Townsville QLD 4212
Via email: Claire.driessen@edifyenergy.com

28 November 2022

Dear Claire

RE: Smoky Creek Solar, Queensland (EPBC 202130) – Adequacy Review Response

Edify Energy Pty Ltd received correspondence from the Department of Climate Change, Energy, the Environment and Water (department) on 19 September 2022 stating that the Preliminary Documentation (16 September 2022 for Smoky Creek Solar, Queensland (EPBC 202130) was considered not yet adequate.

The following letter provides a response to the departments Adequacy Review comments. Details of the response are provided in Attachment 1.

Yours sincerely

A handwritten signature in black ink, appearing to read "Anton Fitzgerald", is written over a light grey rectangular background.

Anton Fitzgerald
Terra Solutions

Attachment 1 - Adequacy review response

#	Where in document	What was asked	Notes and Comments	Adequate and further information required	Response
1	DESCRIPTION OF THE ACTION	Provide the location, boundary and size (in hectares) of the disturbance footprint and of any adjoining areas which may be indirectly impacted by the proposed action, including nearby vegetation.	<p>The PD uses inconsistent terminology in describing the area of the project. In the PD, Project site, Project area, Development footprint, disturbance footprint are all used. It makes for an easier document flow when one terminology refers to the larger site (eg. project area) and one that refers to the disturbance area (eg. project footprint or disturbance footprint). Additional terminologies used need to be clearly defined.</p> <p>Additionally, the development and area of the project is not clear as the following areas have been used in the PD:</p> <ul style="list-style-type: none"> - Additional Development footprint – 1,823.9 ha - Project area – 2,300.78 ha - Total development in PD ‘2,240 ha’ 	<p>For Figure 1 ‘Project location’, please provide a larger contextual map that shows the context of the project regarding the larger region. For example, this could be shown through an inset of the project area on a larger regional map.</p> <p>Size of project area and footprint is not clear. Please simplify.</p> <p>Terminology of area is not clear. Please simplify.</p> <p>Since the referral, the project increased from 1,470 ha to 1,823.9 ha; however, the RFI response mentions 476.9 ha has been excluded from development. Can this avoidance area since the referral be visually shown and explained?</p>	<p>Figure 1 ‘Project location’ has been updated in the PD to include the following:</p> <ul style="list-style-type: none"> - Provides a larger contextual map that shows the project area within the broader region. <p>The size of project area and footprint is now presented in Figure 2. In this map and the report the terminology has been made clearer:</p> <ul style="list-style-type: none"> o Overall study area is referred to as the Project Area o Disturbed areas are referred to as the disturbance footprint <p>Clarification of the project area and disturbance footprint is presented below and in Section 3.1.2 of the amended PD.</p> <ul style="list-style-type: none"> - Project area = 2,301 ha - Disturbance footprint = 1,824 ha
2		Provide detail of the site layout, including the location and size of key infrastructure (e.g. solar panels, battery and transmission infrastructure, site buildings and access roads).		For the final approval, the department will need separate maps in a format like jpeg. For reference please use the department’s EPBC Act map guidelines .	Separate maps in jpeg format have been provided.
3		Include detailed mapping and coordinates for all components of the proposed action.		<p>Regarding Figure 1, mapping issues that have been identified include:</p> <ul style="list-style-type: none"> - Can ‘boundary fence’ and ‘project area boundary’ be one colour and referenced so in the legend? They appear to represent the same thing. Please explain and represent if this is not the case. - ‘connecting access track corridors’ and ‘substation and centralised battery area’ are the same colour? If they represent different things, they need to be visually different. - It is difficult to determine where ‘connecting access track corridors’ are. Make this clear. <p>Some of the details in the legend are not appropriate for the scale of the map used. E.g. ‘access points’ is almost impossible to see at this scale and the colour is also lost. It could be more appropriate to provide additional maps that are at a different scale or bundle the terminology with other infrastructure (with a clear description within the document text).</p> <p>For the final approval, the department will need separate maps in a format like jpeg. For reference on the best practices for mapping, please use the department’s EPBC Act map guidelines.</p>	<p>Figure 3 ‘Location of Key Infrastructure’ has been added to the PD to include the following:</p> <ul style="list-style-type: none"> - The ‘boundary fence’ and ‘project area boundary’ have been made one colour and referenced in the legend. - ‘connecting access track corridors’ and ‘substation and centralised battery area’ have different coloured outlines. - ‘connecting access track corridor’ have been made clearer. <p>Access points symbol sizing has been increased.</p> <p>Separate maps in jpeg format have been provided.</p>
4	HABITAT ASSESSMENT	<p>Answer each of the following in regard to:</p> <ul style="list-style-type: none"> • Solanum dissectum • Solanum johnsonianum • Ornamental Snake (<i>Denisonia maculata</i>) 	Overall	Figure 6 ‘Field verified vegetation’ becomes confusing when two shades of pink and green have been used. Please refrain from using blue when not representing water bodies. Please amend appropriately.	<p>Figure 6 ‘Field verified vegetation’ has been updated in the <i>Habitat Assessment and Targeted Survey</i> (Terra Solutions 2022) to include more distinct colours.</p> <p>All maps depicting MNES habitat were amended to ensure the habitat layer is transparent over the project are.</p>

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		<ul style="list-style-type: none"> Squatter Pigeon (southern) 		Maps depicting MNES habitat must ensure the habitat layer is transparent over the project area and footprint so the department can assess the project accurately.	
4.1	Species general information	Provide a habitat assessment for the listed threatened species noted above.	<u>Provide a habitat assessment for the listed threatened species noted above.</u>	Survey effort is satisfactory	-
4.2			<p><u>Ornamental Snake</u></p> <p>Survey effort is not satisfactory as it appears there is a lack of survey effort in Lots 28, 18 and 32. Please provide an explanation as to the lack of surveys conducted in Ornamental Snake habitat. Additional surveys may need to be undertaken or the department will assume species presence.</p> <p>It's quite difficult to currently understand in Figure 6 'Field Verified Vegetation' the difference between 'Acacia rhodoxylum woodland', 'Gilgai wetlands' and 'Casuarina cristata woodland' due to the colours used. These need to be clearer as requested in point 4 above to assess the habitat assessment.</p> <p>The department considers margins of swamps, lakes and watercourses as Ornamental Snake habitat. Please provide an explanation for the exclusion of the species habitat along the riparian habitat in Lot 32 and in the southern end of Lot 39 along the watercourse mapped as 'Brigalow woodland' in Figure 6 'Verified field vegetation' and noted as being 17 ha of habitat.</p> <p>Habitat for the species extends beyond the project area to the west of the project as described in the PD. As per Point 1 above, please provide mapping of this wider habitat context.</p> <p>In Figure 4 'Ornamental Snake habitat' the use of 'X ha' is misleading as these (seem to) relate to the area of the footprint sections in the relevant Lots. Either remove or change to the area of Ornamental Snake habitat in the relevant Lots.</p> <p>What is the difference between Figure 4 'Ornamental snake habitat' and Figure 5 'Map of known ornamental snake food resources'? If no difference, seek to combine these two maps.</p>	<p>Survey effort is not satisfactory as it appears there is a lack of survey effort in Lots 28, 18 and 32. Please provide an explanation as to the lack of surveys conducted in Ornamental Snake habitat. Additional surveys may need to be undertaken or the department will assume species presence.</p> <p>Figure 6 'Field verified vegetation' has been updated in the <i>Habitat Assessment and Targeted Survey</i> (Terra Solutions 2022) to include more distinct colours.</p> <p>The riparian habitat associated with Lot 32 and 39 has been excluded from the development footprint. The habitat associated with the watercourses was considered unsuitable for ornamental snakes as there is no suitable cracking clays or gilgai proximate to these areas.</p> <p>Figure 4 'Ornamental Snake habitat' has been renamed as Figure 9 'Ornamental Snake Habitat Mapping of Project Area'</p> <p>Figure 8 'Ornamental Snake Habitat Mapping in Locality' has been prepared using aerial photograph interpretation to identify potential ornamental snake habitat to the west of the project area. The estimated area of potential ornamental snake habitat within the project area and surrounds totals approximately 1,922 ha. This area includes approximately 290 ha of remnant vegetation which should be classified as higher quality habitat and 1,632 ha of lower quality habitat. The project area contains approximately 220 ha of this lower quality habitat with 211 ha located within the disturbance footprint.</p> <p>Figure 5 'Map of known ornamental snake food resources' has been removed.</p>	<p>Survey effort for ornamental snake was focused on Lot 39 as it was considered to contain best on offer habitat so whilst the survey may not have been entirely spatially representative the survey effort was consistent with requirements. Potential Ornamental Snake habitat within Lots 18, 32 and 39 is all poor quality and lacks good connectivity with high quality offsite habitat. Lot 39 habitat and land use was homogenous to Lot 28 and the survey effort was considered a sufficient surrogate for Lot 28.</p>
4.3			Squatter pigeon	Dispersal habitat is not included in maps. Please include.	<p>As stated in Section 4.2.6.2 – Item 2.2.6, squatter pigeon dispersal habitat consists of any forest or woodland between foraging or breeding habitat and suitable waterbodies used for hydration.</p> <p>Figure 6 'Squatter pigeon habitat' has been renamed to Figure 10 'Squatter pigeon habitat mapping' and updated to show 'dispersal habitat' which is closely associated with areas of mapped foraging/dispersal habitat.</p>
5		Provide a discussion of habitat use requirements (e.g. shelter/refuge, breeding, foraging, dispersal, etc.), including consideration of known important habitat and suitable habitat.		Adequate.	-
6		Identify and describe known historical records of the species in the broader region. All known records must be supported by an appropriate source (i.e. Commonwealth and State databases, published research,		Coordinates provided however please map all historical records for MNES within 10 km of the project.	Figure 4 'Solanum dissectum records' and Figure 5 'Solanum johnsonianum records' has been prepared (Section 4.1.1.2 – Item 2.1.3). These maps show all known historical records of the MNES within 10 km of the project area. No records of

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		publicly available survey reports etc.), the year of the record and a description of the habitat in which the record was identified.			ornamental snake or squatter pigeon within 10 km of the project area were retrieved in the search.
7		Provide the total area (in hectares) of each identified habitat type within the site (e.g. shelter/refuge, breeding, foraging, dispersal etc.), including consideration of disturbed (non- remnant vegetation) areas. Where habitat requirements overlap (e.g. where breeding and foraging occur within the same habitat type), provide the total area for both habitat types.		'Avoidance area' is used in the tables (Table 6, 9, 12 and 18) for each species in response to this question. There is no discussion or mapping to represent what these 'avoidance area' values mean. Please map and provide a discussion on 'avoidance areas'.	'Avoidance areas' are areas of considered habitat that have been removed from the project footprint. A discussion on avoidance areas has been provided in the following sections of the PD, Section 4.1.1.3 – Item 2.1.4, Section 4.2.1.4 – Item 2.1.4, Section 4.2.4.4 – Item 2.1.4 and Section 5.5 – Item 3.1.5. Avoidance areas have been identified in Figure 2 'Project Layout', Figure 6 'Solanum Habitat', Figure 9 'Ornamental Snake Habitat in Project Area' and Figure 10 'Squatter Pigeon Habitat'.
7.1			Solanum dissectum and Solanum johnsonianum	Addressed	-
7.2			Ornamental Snake	There is no discussion on the 208.95 ha of disturbed gilgai within the disturbance footprint nor the impact of this on the Ornamental Snake. Please discuss.	Discussion is included in Section 5.1.2.2 of the PD.
7.3			Squatter pigeon	Please map dispersal habitat. The PD describes dispersal habitat for the species is located between patches of foraging and breeding habitat. However, the PD also notes that the dispersal and foraging habitat within the project area (Avoidance area) is the same amount in hectares (56.04 ha) please give detail as to how the same amount of habitat for foraging and dispersal habitat has been reached with different habitat descriptions in section 4.2.6.2. In section 4.2.6.2 in the description of the dispersal habitat for the species, the species is described as utilising habitat on clay soils to reach watercourses. Within Lot 28, no surveys have been conducted for the species along watercourses however it would be suitable dispersal habitat. Please discuss the contradiction between the dispersal habitat description in the PD and the surveys conducted to identify the species.	Figure 6 'Squatter pigeon habitat' has been renamed as Figure 10 'Squatter pigeon habitat' and updated to show 'dispersal habitat' As stated in Section 4.2.6.2 – Item 2.2.6, squatter pigeon dispersal habitat consists of any forest or woodland between foraging or breeding habitat and suitable waterbodies used for hydration. 'Dispersal habitat' is likely to be closely associated with areas of mapped foraging/dispersal habitat. The areas of dispersal habitat are therefore greater than areas of breeding/foraging habitat stated in the PD. The PD has been updated accordingly. Although non-remnant watercourses are present in Lot 28 there is no vegetation associated with the watercourses along Lot 28 and therefore no habitat. As such, targeted surveys were not undertaken in this area.
8		Provide detailed mapping of suitable habitat, which: <ul style="list-style-type: none"> identifies the location, size and type of habitat for each species; includes an overlay of the project disturbance footprint; and identifies the location of known species records derived from desktop analysis and/or field surveys. 	Solanum dissectum and Solanum johnsonianum:	The map is not clear and has too much information. Considering there is already an overview map with infrastructure, consider the aspects that are needed to represent habitat. In Lot 28, it appears the habitat for the two species overlaps with the project footprint. If this is not the case, this needs to be clearer. This could be represented by providing an inset at a lower scale or making the footprint layer transparent. This map does not include the species records. Please include.	Figure 2 'Habitat map <i>S. dissectum</i> and <i>S. johnsonianum</i> ' has been renamed to Figure 4 'Habitat map <i>S. dissectum</i> and <i>S. johnsonianum</i> '. The map has been simplified and the habitat outline amended. No habitat for either species is in the disturbance footprint. The species records from field investigations have been included. The location of species records in the surrounding area have been included in Figure 4 'Solanum dissectum records within 10 km of the Project Area' and Figure 5 'Solanum johnsonianum records within 10 km of the Project Area'.
8.1			Ornamental Snake:	The map is not clear and has too much information. Considering there is already an overview map with infrastructure, consider the aspects that are needed to represent habitat. The habitat layer is not transparent with the project area and footprint. Please make the project footprint layer transparent so the overlapping habitat can be	Figure 4 'Ornamental Snake Habitat' has been renamed as Figure 9 'Ornamental Snake Habitat in Project Area. This map has been simplified and habitat layers have been made more transparent.

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				clearly visualised. For the Ornamental Snake, an additional map could be provided that shows nearby vegetation including the '2,100 ha of Gilgai' as described in 4.2.1.1 to the west of the project and Brigalow in the wider area.	Figure 8 'Ornamental Snake Habitat in Locality' has been prepared which identifies the Ornamental Snake habitat that extends to the west of the project area.
8.2			Squatter Pigeon	<p>The map is not clear and has too much information. Considering there is already an overview map with infrastructure, consider the aspects that are needed to represent habitat.</p> <p>In Lot 28, it appears the habitat for the species overlaps with the project footprint. If this is not the case, this needs to be clearer. This could be represented by providing an inset at a lower scale or making the footprint layer transparent over the habitat layer.</p> <p>The dispersal habitat is not reflected in this map. Please include.</p>	Figure 6 'Squatter Pigeon' has been renamed as Figure 10 'Squatter Pigeon Habitat'. This map has been simplified and habitat outline has been amended. Dispersal habitat has been included in the map.
9.1		Include an assessment of the adequacy of any surveys undertaken, including survey effort, timing and the extent to which surveys were appropriate for the listed threatened species, with reference to relevant departmental survey guidelines *Figure 2 shows survey locations for all 4 MNES	Solanum dissectum and Solanum johnsonianum	The response does not include when surveys were undertaken. Please include.	Section 4.1.1.5 Item 2.1.6 has been updated to include the survey times.
9.2			Ornamental Snake	<p>Adequate</p> <p>Error to amend: Item 2.1.6 has incorrectly written 'Solanum..' instead of Ornamental Snake under the 'Response' headline. Please amend.</p>	Section 4.2.1.6 Item 2.1.6 of the PD was amended.
9.3			Squatter pigeon	Adequate	-
10		Attach all relevant ecological surveys referenced in the preliminary documentation as supporting documentation. Ecological surveys or reports already provided in the referral documentation do not need to be provided again.	See Appendix A	Adequate	-
11	Species specific information – Solanum spp.	Identification of all areas of Brigalow and/or Eucalypt forest and woodland on cracking clay soils within the site.	See Figure 3	Figure 3. – Very difficult to determine a difference between 'Brigalow on cracking clay' and 'operations and maintenance building area' when looking at this map independently. Please remove all unnecessary elements of the map so it is easier to visualise the ecological communities. Please also ensure that the project footprint is transparent. It would also be beneficial to remove the 'nondevelopment zone' layer.	Figure 3 'Brigalow and Eucalypt woodland and forest on cracking clay soils' has been renamed as Figure 7 'Brigalow and Eucalypt woodland and forest on cracking clay soils'. The map has been simplified, individual project elements have been removed and replaced by just the disturbance footprint and avoidance area. The disturbance footprint and avoidance area have been made more transparent.
11.2		A detailed discussion of habitat requirements, including light levels, soil composition and moisture, and the suitability of the site to support the species		Inadequate – this response does not relate the species habitat requirements in relation to the project area. This must be amended.	Section 5.1 – Item 3.1.1 has been amended to relate the species habitat requirements to the project area.
12	Ornamental Snake	A discussion of vegetation composition and structure on relevant land zones (i.e. riparian vegetation, gilgai mounds and depressions, Brigalow Threatened Ecological Community, cracking clay soils and microhabitat features).		The response includes the following sentiment "The preferred REs, 11.4.3, 11.4.6, 11.4.8, 11.4.9, 11.3.3 and 11.5.16 are not present in remnant state on the Site...", are these REs instead in a non-remnant or regrowth state? Please describe this further. It is worth noting that for our assessment, habitat is assessed in	Section 4.2.2 Item 2.2.3 of the PD has been further clarified and states the following: 'The preferred REs, 11.4.3, 11.4.6, 11.4.8, 11.4.9 11.3.3 and 11.5.16 are not present on the site'.

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				<p>accordance with the SPRAT profile rather than whether the habitat is remnant or not.</p> <p>Regional ecosystems 11.4.6 and 11.3.3 are not considered Brigalow under the EPBC Act. Please demonstrate or remove.</p> <p>“The preferred REs, 11.4.3, 11.4.6, 11.4.8, 11.4.9, 11.3.3 and 11.5.16 are not present in remnant state on the site, however the pre-clearing regional ecosystem in areas containing gilgai landforms is RE 11.3.1 – <i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest (particularly in southern parts), with or without scattered emergent <i>Eucalyptus</i> spp. such as <i>E. coolabah</i>, <i>E. largiflorens</i>, <i>E. populnea</i>, <i>E. orgadophila</i>, and <i>E. woollsiana</i>.” This sentence is convoluted. Please rewrite for clarity.</p> <p>Additionally, the response at 4.2.2.1 mentions patches of ‘immature’ brigalow which indicates that recruitment for the species is happening. The department considers this could be habitat for the Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant ecological community) TEC. Please map and discuss this community.</p>	<p>Regional ecosystems 11.4.6 and 11.3.3 are not listed as Brigalow, but the species has been recorded in these RE's which are listed in the SPRAT profile.</p> <p>Section 4.2.2 Item 2.2.3 of the PD has been further clarified and states the following ‘The preferred REs, 11.4.3, 11.4.6, 11.4.8, 11.4.9 11.3.3 and 11.5.16 are not present on the site, however in areas containing gilgai landforms the pre-clearing is mapped as RE 11.3.1 - <i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest. Whilst this RE is not recognised in Federal documentation specifically, the landform, presence of gilgai and pre-clearing vegetation structure is likely to have historically been identified as suitable habitat for ornamental snake’.</p> <p>In accordance with the Approved Conservation Advice for Brigalow, Butler (2007) recommends that remnants of component regional ecosystem in poor condition be excluded from the listed Brigalow ecological community. Poor condition of patches can be recognised as vegetation that has been comprehensively cleared (not just thinned) within the last 15 years, which is the case for immature brigalow contained within the site which has been blade ploughed within the past 15 years (pers. comm Maynard 2022). The patches mentioned do not meet a required key diagnostic characteristic (i.e. at least 15 years since it was last comprehensively cleared) to be considered a Brigalow ecological community.</p>
12.2		Details and locations (including a map) of known food sources (i.e. frog species) and other required habitat features, including but not limited to cracking clay soils, gilgai mounds and depressions.	Figure 5 and Figure 4.	Again, overly complicated map which should be simplified and as previously suggested, consider condensing Figure 5 with Figure 4.	Figure 4 ‘Ornamental Snake Habitat’ has been combined with Figure 5 ‘Map of known ornamental snake food resources’ to produce Figure 9 ‘Ornamental Snake Habitat in Project Area’
13	Squatter Pigeon	A discussion of vegetation composition and structure on relevant land zones (i.e. specific tree and grass species).		<p>The response in Table 14. indicates that the <i>Eucalyptus crebra</i> woodland sand and loam community is typically utilised for Squatter Pigeon for foraging and breeding however is not denoted as such in Figure 6 ‘Squatter Pigeon habitat’ in the east of Lot 37.</p> <p>Table 14 also describes the <i>Acacia rhodoxylum</i> woodland on sand and loam as being Squatter Pigeon habitat. In Lot 39 in Figure 6, this is not represented as Squatter Pigeon habitat.</p> <p>Please provide a discussion on this or include these areas of Squatter Pigeon in Figure 6.</p>	The <i>Eucalyptus crebra</i> woodland community and <i>Acacia rhodoxylum</i> woodland has been mapped as foraging habitat in Figure 10 ‘Squatter Pigeon Habitat’.
13.2		A discussion of breeding, foraging and dispersal habitat requirements		Addressed	-
13.3		Identification of permanent or seasonal water bodies or watercourses within 1 kilometre (km) of the disturbance footprint to support breeding habitat		Ensure all waterbodies use blue as the colour of presentation.	All waterbodies within Figures 11 have been changed to the colour blue.
13.4		Identification of permanent or seasonal water bodies or watercourses within 3 km of the disturbance footprint to support foraging habitat.		Addressed	-

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14	Impact Assessment	An assessment of the likely impacts associated with the construction, operation, maintenance and decommissioning phases of the proposed action. Consider direct and indirect loss and/or disturbance of individuals and suitable habitat as a result of the proposed action		<p>The PD has a very limited discussion on indirect and facilitated impacts. Please consider indirect impacts including downstream impacts, the introduction of edge effects to woodlands, increased traffic during construction and decommissioning, creation of movement barriers.</p> <p>While the project has a very slight slope, there are several water courses that traverse downstream, the PD does not consider downstream impacts.</p> <p>The PD mentions at 4.2.1.1 that the project is at the edge of a large patch of Gilgai (2,100 ha), please discuss the potential indirect impacts this project could have (e.g. edge effects) on the 2,100 ha of Gilgai to the west of the project and the Gilgai within the project area (220 ha).</p> <p>Additionally, the 'Eucalyptus crebra woodland' depicted in Figure 6 'Field verified vegetation' appears to be on the edge of a larger patch to the east. Please discuss this and whether the project will potentially result in edge effects that will impact Squatter Pigeon.</p>	<p>The dominant vegetation community in the project area is sabi grass (<i>Urochloa mosambiquensis</i>), an introduced species. Isolated trees growing within the pasturelands include brigalow (<i>Acacia harpophylla</i>), Dawson's gum (<i>Eucalyptus cambageana</i>), mountain coolabah (<i>Eucalyptus orgadophila</i>), coolabah (<i>Eucalyptus coolabah</i>) and Queensland bottle tree (<i>Brachychiton rupestris</i>). Where shrubs occur, they include species that typically grow in brigalow communities such as scrub wilga (<i>Geijera parviflora</i>), Queensland ebony (<i>Diospyros humilis</i>), currant bush (<i>Carissa ovata</i>), various canthiums (<i>Psychrax</i> spp) and holly bush (<i>Alectryon diversifolius</i>). The grass cover consists of a thick monoculture of sabi grass with occasional small patches of guinea grass (<i>Megathyrsus maximus</i>), buffel grass (<i>Cenchrus ciliaris</i>), Indian bluegrass (<i>Bothriochloa pertusa</i>) and black speargrass (<i>Heteropogon contortus</i>). Native grasses were uncommon in the pastures and a diverse range of seeds for granivores was not present.</p> <p>The 208.95 ha that contains gilgai landforms is non-remnant with only isolated <i>Eucalyptus</i> spp. in some areas. Furthermore, the approximate 2,100 ha of gilgai land to the west is also highly degraded through historical clearing and land use. The area adjacent to the site lacks a canopy and possesses negligible habitat values (i.e. currently in poor condition). The dominant vegetation community in the project area is sabi grass, an introduced species. Sabi grass has already invaded adjacent remnant woodlands over all major soil types. Therefore, further degradation of this area through edge effects will not occur because of the project.</p> <p>As a result of historical broadscale clearing, presence of dispersive soils and steep slopes, erosion processes were moderate to severe in sections. The following mitigation and management measures are likely to improve erosion processes within the project area and therefore likely to improve downstream impacts:</p> <ul style="list-style-type: none"> - Exclusion of development within drainage lines and associated buffers - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan <p>The construction fence will not impede the movement of any MNES that potentially occur include squatter pigeon and ornamental snake.</p> <p>Due to the project area's previous disturbance (clearing, blading etc) and speed limits that will be implemented during construction and decommissioning phases, impacts from increased traffic will be negligible.</p> <p>Considering the existing disturbance of the project area and adjacent areas, any further clearing associated with the <i>Eucalyptus crebra</i> woodland is expected to be minor.</p>
14.2			S. dissectum and S. johnsonianum	In Table 15 it is suggested a buffer area around known habitat will be introduced – what size will this buffer be and how was it determined?	The buffer area will be of sufficient size to ensure that no inadvertent clearing of habitat will occur and will be implemented through the application of best practice clearing and tree protection methods. A five metre buffer from the edge of the treeline to the outer edge of the development footprint is

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				A construction phase environmental plan and operational phase management plan are mentioned in this response. These plans will need to be provided to ensure a full assessment can be undertaken as to its suitability.	proposed as neither species is likely to grow in areas without a canopy.
14.3			Ornamental Snake	The PD does not include a discussion on potential impacts to frog species. As this is the main food source for Ornamental Snake, please consider any impacts to frogs. Table 16 mentions that gilgai depressions and rises will be retained however in Figure 6 'Field verified vegetation' it appears that Gilgai encompasses a large area of Lot 28 where the project footprint will overlap. Please explain this further.	The project will impact frog species within the gilgai area due to the requirement of cut and fill civil earthworks, which will reduce potential habitat. However gilgai are known to reform following greater disturbance such as broadscale ripping and blading, which has occurred historically within the project area..
14.4			Squatter Pigeon	Regarding Squatter Pigeon dispersal habitat, please describe the impact that the solar panel construction would have by potentially creating a barrier for the species to access watercourses and move between habitat across the project area.	Dispersal habitat is identified as woodland or forest habitat between breeding and/or foraging habitat and water sources. The identified dispersal habitat will be largely avoided by development and movement between these areas of habitat retained. The solar arrays will be elevated on piles and will not impact squatter pigeon dispersal.
		<i>An assessment of the likely duration of potential impacts to listed threatened species, including a discussion of potential impacts that are unknown, unpredictable or irreversible where relevant.</i>		The PD mentions that some footings may remain after decommissioning. What are the impacts of these footings remaining on site?	All footings 1m below ground level will be removed unless otherwise agree by landowner and council.
		<i>Provide a discussion of potential impacts to soil composition, moisture and stability, and water availability and quality, in relation to habitat requirements for listed threatened species.</i>	Water availability addressed – Access to dams maintained through corridors. No discussion on water quality being impacted however a stormwater management plan and erosion and sediment control plan will be implemented.	A discussion on potential impacts to water quality, soil moisture and stability from the solar farm not provided.	As a result of historic broadscale clearing, presence of dispersive soils and presence of watercourse, erosive processes were moderate to severe in sections. The following mitigation and management measures are likely to improve erosive processes within the project area: <ul style="list-style-type: none"> - Exclusion of development within drainage lines and associated buffers - Implementation of Concept Erosion and Sediment Control Plan - Implementation of Construction Environmental Management Plan - Implementation of Operation Environmental Management Plan - Implementation of Bushfire Management Plan Construction will not require any cut or fill civil works associated with the solar arrays and soil disturbance will be limited to piling and trenching of underground cables. Taking into consideration the existing erosion processes on site, the proposed mitigation measures and the limited disturbance associated with the construction methodology, impacts to water quality, soil moisture and stability are expected to be minimal.
		Provide a discussion of potential impacts to habitat requirements for listed threatened flora species, including shading from solar panels.		Will shading from the panels occur outside of the proposed project footprint? If so, what is the impact from shading on MNES? <i>Cossinia australiana</i> (Endangered) is likely to occur in this area according to the PMST report. As this species occurs in Brigalow communities and records exist in the greater region (Atlas of Living Australia), was this species targeted in any surveys?	As detailed in the PD (section 2.0), the top edge of the solar panels will typically range from 3.0 to 4.5 m above the ground, therefore there will be no impact from shading outside of the proposed footprint. As detailed in the ecological assessment in section 4.8 (RPS 2018), only two of flora species, <i>Solanum dissectum</i> (Endangered under the EPBC Act) and <i>Solanum</i>

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					<p><i>johnsonianum</i> (Endangered under the EPBC Act) were identified as having a potential to occur within the project area.</p> <p><i>Cossinia australiana</i> prefers ecotonal situations around dry rainforest edges, although it provides as scattered individual plants within closed forest communities. It grows in araucarian microphyll vine forest and relict semi-evergreen vine thicket on a variety of soils, including red volcanic soil and black loam (Borsboom and Wang 1997; Queensland Herbarium 2012). As suitable habitat for the species does not occur within the study area, the project will not impact the species.</p>
		Provide the total area (in hectares) of each identified habitat type that will be cleared or impacted within the site (e.g. shelter/refuge, breeding, foraging, dispersal etc.), including detailed mapping. Where habitat requirements overlap (e.g. where breeding and foraging occur within the same habitat type), provide the total area for both habitat types.		As mentioned above, habitat maps need to be clear and to the point.	<p>As detailed in the following tables within the PD:</p> <ul style="list-style-type: none"> - Table 5 – Habitat area for <i>S. Johnsonianum</i> and <i>S. dissectum</i> - Table 8 – Habitat area of ornamental snake - Table 11 – Habitat area for squatter pigeon
		<p>Demonstrate, with supporting evidence, how the proposed action will not be inconsistent with:</p> <ul style="list-style-type: none"> - Australia's obligations under the Biodiversity Convention, the Convention on Conservation of Nature in the South Pacific (Apia Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and - a recovery plan or threat abatement plan. 		56.04 ha of indirect impacts to Squatter Pigeon is listed in Table 19 however there is no discussion on what these impacts are nor where they are located. Please describe and consider mapping.	As further discussed in section 5.1.3.2 of the PD, indirect impacts to foraging, breeding and dispersal habitat will be limited to weed incursion and short-term construction impacts (e.g. increase in noise and air emissions, water quality deterioration due to an increase in erosion). However, proposed mitigation measures as detailed in Table 17 will ensure impacts are within acceptable limits.
	PROPOSED AVOIDANCE, MITIGATION AND MANAGEMENT MEASURES	Detail of measures proposed to be undertaken by the proponent to avoid, mitigate and manage impacts of the proposed action on listed threatened species, including those required through other Commonwealth, State and local government approvals;		<p>Please include the size of proposed buffer areas around riparian habitat.</p> <p>The response mentions using 'suitable fodder species' – please detail which species will be used.</p> <p>Please provide justifications as to why 50 m will be a suitable buffer from watercourses for clearing and stockpiles (e.g. with reference to the literature, SPRAT and/or statutory/policy requirements).</p>	<p>As detailed in the PD, project infrastructure will be setback 50 metres from the top of the bank of watercourses. This is an existing condition of development issued by Banana Regional Council.</p> <p>Suitable fodder species should typically be consistent with the dominant pasture grass presently on the site with the view of returning to a grazing land use on decommission, or if practical, grazing whilst the solar farm is operating. Presently the dominant pasture grass is sabi grass (<i>Urochloa mozambiquensis</i>) and this species would be suitable for revegetation of disturbed areas.</p> <p>The watercourses associated with the proposed development include the small stream orders 1 and 2 and the riparian vegetation in most cases is limited to the high banks of the watercourses.</p> <p>In accordance with the <i>Vegetation Management Act 1999</i> remnant vegetation buffers for watercourses are required to be 10 m from the high bank to maintain bank stability, water quality, terrestrial and aquatic habitat. Therefore, a 50 m buffer for the placement of stockpiles is considered more than adequate.</p>
		The statutory or policy basis for the proposed measures, including reference to the SPRAT database, and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans.		Addressed.	-
		<p>All proposed measures must be drafted to meet the 'S.M.A.R.T' principle:</p> <ul style="list-style-type: none"> • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) 	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	In principle, addressed.	-

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		<ul style="list-style-type: none"> R – Relevant (conservation advices, recovery plans, threat abatement plans) T – Time-bound (specific timeframe to complete) 			
		Include the plans specified above (in approved or draft format) as appendices to the preliminary documentation.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	Please provide the requested plans and those that are referred to in the documentation. These plans inform our assessment and conditions of approval.	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		Information on the timing, frequency and duration of the proposed avoidance, mitigation, management and monitoring measures, and corrective actions to be implemented.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		Details of specific and measurable environmental outcomes to be achieved for the relevant listed threatened species. All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed measures.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		An assessment of the expected or predicted effectiveness of the proposed measures.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		Details of ongoing management, including monitoring programs to support an adaptive management approach, that validate the effectiveness of the proposed measures and overall demonstrate that environmental outcomes will be achieved.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		Details of tangible, on-ground corrective actions that will be implemented in the event the monitoring programs indicate that the environmental outcomes have not or will not be achieved.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	<p>The following management plans have been provided:</p> <ul style="list-style-type: none"> - Concept Erosion and Sediment Control Plan - Construction Environmental Management Plan - Operation Environmental Management Plan - Bushfire Management Plan
		Details of any measures proposed to be undertaken by Queensland and local governments, including the name of the agency responsible for approving each measure.		Only the conditions imposed by the Banana Shire are outlined, are there conditions being imposed by the Queensland State Government? Has the state delegated the conditions of approval to the council? This must be made clear in the documentation with clear references to Appendices and attachments.	The Queensland State Government has not imposed any conditions as the development approval did not trigger any relevant State legislation.
	REHABILITATION REQUIREMENTS	<i>Rehabilitation acceptance criteria, including for the restoration of habitat for relevant listed threatened species and communities.</i>	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	Please provide the requested plans and those that are referred to in the documentation. These plans inform our assessment and conditions of approval.	<p>Due to the following, a rehabilitation plan is not required:</p> <ul style="list-style-type: none"> - The proposed development will be undertaken in non-remnant vegetation - Construction will not require any cut or fill civil works associated with the solar arrays, where soil disturbance will be limited to piling and trenching of underground cables. - Temporary erosion and sediment controls detailed in the ESCP will provide sufficient controls until groundcover naturally restabilises in areas trenched.

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		A summary of the procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	Due to the following, a rehabilitation plan is not required: <ul style="list-style-type: none"> - The proposed development will be undertaken in non-remnant vegetation - Construction will not require any cut or fill civil works associated with the solar arrays, where soil disturbance will be limited to piling and trenching of underground cables. - Temporary erosion and sediment controls detailed in the ESCP will provide sufficient controls until groundcover naturally restabilises in areas trenched.
		A summary of a monitoring program to determine the success of rehabilitation activities implemented by the proponent.	Management plans for the proposed development have yet to be developed due to the uncertainty of the EPBC approval requirements.	As above	Due to the following, a rehabilitation plan is not required: <ul style="list-style-type: none"> - The proposed development will be undertaken in non-remnant vegetation - Construction will not require any cut or fill civil works associated with the solar arrays, where soil disturbance will be limited to piling and trenching of underground cables. - Temporary erosion and sediment controls detailed in the ESCP will provide sufficient controls until groundcover naturally restabilises in areas trenched.
		The details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation. Attach relevant Commonwealth, State or Territory, and local government approvals and permits as supporting documents to the preliminary documentation.		As above	Due to the following, a rehabilitation plan is not required: <ul style="list-style-type: none"> - The proposed development will be undertaken in non-remnant vegetation - Construction will not require any cut or fill civil works associated with the solar arrays, where soil disturbance will be limited to piling and trenching of underground cables. - Temporary erosion and sediment controls detailed in the ESCP will provide sufficient controls until groundcover naturally restabilises in areas trenched.
	OFFSETS	If a residual significant impact/s is likely to occur as a result of the proposed action, include a summary of the proposed environmental offset/s and key commitments to achieve a conservation gain for each protected matter, that align with the requirements of the Offsets Policy.	Not addressed as no significant impact determined by proponent. "If DCCEEW determine a significant impact, preference by the proponent is to re-design project layout rather than undertake offsets"	It is difficult for the department to draw conclusions on significance in the documentation provided so far. If significance is drawn from additional information, the department will require an offset strategy be provided as part of the revised draft PD, or a demonstration that re-design will avoid/mitigate impacts to the relevant MNES.	As detailed by the PD and the additional supporting documentation, the proposed project will not result in a significant impact to a MNES, therefore an offset is not required.
		If an offset area/s has been nominated, include a draft Offset Area Management Plan (OAMP) as an appendix in the preliminary documentation for assessment and approval. The draft OAMP must meet the information requirements set out in Appendix B.1, and must be prepared by a suitably qualified ecologist and in accordance with the department's Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmentalmanagement-plan-guidelines	Not addressed as no significant impact determined by proponent.	As above	As detailed by the PD and the additional supporting documentation, the proposed project will not result in a significant impact to a MNES, therefore an offset is not required.
		If an offset area has not been nominated, instead include a draft Offset Management Strategy (OMS) as an appendix in the preliminary documentation for assessment and approval. The draft OMS must meet the information requirements set out in Appendix B.2. Note that the department is likely to recommend to the Minister (or delegate) that the conditions of approval require the OAMP, or other environmental offset/s as specified in the OMP, be approved and implemented prior to the commencement of the proposed action.	Not addressed as no significant impact determined by proponent.	As above	As detailed by the PD and the additional supporting documentation, the proposed project will not result in a significant impact to a MNES, therefore an offset is not required.
	Ecologically Sustainable	Development A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. More information on ESD is provided in the National Strategy for Ecologically		Addressed	-

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		Sustainable Development (1992), available at www.environment.gov.au/about-us/esd/publications/national-esd-strategy .			
	Economic and Social matters	An analysis of the economic and social impacts of the action, both positive and negative.		Addressed if the following point is.	-
		Details of any public consultation activities undertaken and their outcomes		It is difficult to locate Appendix H, please re-send as a separate and independent pdf. Please discuss in long-form the outcomes of the public consultation activities.	Smoky Creek Solar Power Station – Community Engagement Summary has again been attached as Appendix D of the PD.
		Describe any Indigenous consultation and their outcomes, that has been undertaken, or will be undertaken in relation to the proposed action, in accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016).		Addressed	-
		Projected economic costs and benefits of the project (in dollars), including the basis for their estimate through cost/benefit analysis or similar studies.		Addressed	-
		Employment opportunities expected to be generated by the project (including construction and operational phases).		Addressed	-

Further comments

Threatened Ecological Communities				Brigalow that conforms to the TEC and mapped in the ecological assessment (Terra Solutions) includes the following polygons:	
<ul style="list-style-type: none"> - Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant ecological community) 				<ul style="list-style-type: none"> Lot 18 - 2.51 ha and 5.72 ha Lot 32 / Lot29 - 5.99 ha and 10.15 ha Lot 37 - 0.66 ha Lot 39 - 0.86 ha, 0.85 ha, 1.74 ha and 15.31 ha 	
<ol style="list-style-type: none"> 1. The PD mentions that all brigalow woodlands identified are the Brigalow TEC. The PD mentions that there are two patches of Brigalow TEC within the Project area and no brigalow within the footprint. Please clarify. 				<p>These Brigalow TEC polygons are located outside of the project footprint and will not be impacted by development.</p> <p>A smaller patch of Brigalow associated with ornamental snake habitat is in Lot 28 is within the project footprint but does not meet the criteria for a TEC. The patch is 0.48 ha in area and is considered of poor condition in accordance with Brigalow conservation advice, as the individual patch is smaller than 0.5 ha. Therefore, this patch does meet the required key diagnostic characteristic (i.e. 0.5 ha or more in size) and therefore not considered a Brigalow TEC.</p>	
<ol style="list-style-type: none"> 2. As the TEC is considered a Matter National of Environmental Significance, please include a discussion on the direct, indirect and facilitated impacts this proposed project will have on the TEC. 				<p>As mentioned above, all the identified Brigalow TEC polygons are located outside of the project footprint. Due to the isolated and fragmented nature and poor condition of these communities no direct, indirect or facilitated impacts are expected.</p>	
<ol style="list-style-type: none"> 3. Please also provide a discussion on the regional context for this TEC, including potential connectivity. 				<p>As all identified Brigalow TEC polygons are located outside of the project footprint, the development will not impact connectivity.</p>	
<ol style="list-style-type: none"> 4. Please ensure mapping is representative of the ecological community, including re-growth, remnant and non-remnant vegetation. 				<p>All areas of the brigalow TEC are presented in Figure 6 of the ecological assessment report (Terra Solutions 2022).</p>	