Australian Government
Department of the Environment and Energy

Title of Proposal - Springdale Solar Farm

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Energy Generation and Supply (renewable)

1.2 Provide a detailed description of the proposed action, including all proposed activities.

Renew Estate propose to develop the Springdale Solar Farm at Sutton, NSW, in the Yass Valley Local Government Area. The project site is generally greenfield and is located approximately 3.5 km north of the border with the ACT, and approximately 7 km north west of the Sutton village. The solar farm includes solar generation equipment and associated infrastructure with a capacity of up to 120 megawatts of direct current (MWdc) and 100 megawatts of export capacity (alternating current) (MWac).

The primary project components would consist of:
• PV solar modules on a single-axis tracking framing system mounted on steel piles
• Approximately 22 containerised power conversion stations, containing electrical switchgear, inverters and transformers
• An electrical switchyard and substation that would be connected to the existing 132 kilovolt (kV) TransGrid transmission line that traverses the site
• DC and AC cabling for electrical reticulation
• A control building including office, supervisory control and data acquisition (SCADA) systems, O&M facilities, staff amenities, and associated carpark
• Two meteorological stations
• Internal all-weather access tracks
• Security fencing
• Landscaping
• Only if a Voluntary Planning Agreement is executed with the Yass Valley Council (YVC) with agreement on the relevant works, construction of a new public road connection between Tallagandra Lane and Tintinhull Road (referred to in this EIS as Tintinhull Road re-alignment)
• Only if a Voluntary Planning Agreement is executed with the YVC with agreement on the relevant works, subdivision of Lot 202 DP754908 to create a proposed new lot to be dedicated as a public road for the proposed Tintinhull Road re-alignment.

The operational lifetime of the solar farm is 30 years, at which time the site would either be decommissioned or continue to operate subject to further approval and commercial considerations. Decommissioning would remove all above ground infrastructure and rehabilitate the site to return it to its predevelopment condition.

Photovoltaic modules and tracking system:

PV solar panels would likely consist of polycrystalline silicon modules. The modules convert incident photons into electric current and generate direct current (DC) electricity. The PV solar panels would be mounted on a single axis tracking system to orient the solar modules to follow the sun from east to west each day. The tracking structures would be mounted on galvanised steel piles, which would be screw or pile driven into the ground depending on final geotechnical analysis. The tracking structure framework is designed for easy and fast installation with minimal land disturbance and can also be readily removed when the solar farm is decommissioned. A typical example of the solar panels arrays is shown in Image 1 of Attachment 1.

Power conversion stations (PCS):
Solar modules and trackers would be placed in power blocks of between 5.0 and 5.5MVA, each with a centralised power station, resulting in approximately 22 PCS throughout the extent of the project. Each PCS would be a containerised design, mounted on a concrete pad or piles, and would incorporate two inverters and a single MV transformer (Image 2 of Attachment 1). Each PCS would also contain the tracker controller units, SCADA system along with other automation and monitoring components. All PCS would be interlinked via a buried 33kV circuit for reticulation to the solar farm substation and switchyard.

Electrical switchyard and substation:
An electrical switchyard and substation would be constructed to facilitate the interconnection of the proposed solar farm into the TransGrid Network and the National Electricity Market. The substation and switching station will be constructed adjacent to the existing easement. The substation and switchyard are being designed with TransGrid, with an indicative footprint of 50 x 90 metres. The transformer would be the largest single piece of plant on the site and is likely an oil filled unit surrounded by appropriate aggregate bunding to contain the oil in the unlikely event of a leak. Indicative examples of the transformer and switchgear are shown in Image 3 and 4 of Attachment 1.

DC and AC cabling:
DC cabling would run aboveground along the back of the tracker tables in cable trays or fixings flush against the modules. DC cabling from each string would run to a combiner box which would contain fuses/circuit breakers. The combiner box would then have a consolidated run of DC cabling back to the block power station. This cable run would most likely be underground. The final buried cable depth would be subject to detailed design; however, the likely buried depth is 300 mm. The AC cabling would run between the PCS and the onsite substation. AC cabling would be buried, with all junctions and turning points clearly marked with HV markers. Depth of cabling would be determined during detailed design, but is indicatively 900 mm.

Control building:
A control building with a footprint of approximately 450 m2 would be constructed to contain both the site office and warehouse/workshop facilities. The control building would consist of a steel structure erected on a concrete base. The site office would contain IT systems and primary interface with the site SCADA system, staff amenities, water tanks, septic system and warehouse/workshop facilities. The control building would be powered by either a direct connection from the local distribution network or via the auxiliary supply of the high voltage transformer. Parking facilities would be provided adjacent to the control building for

approximately 10 light vehicles.

Meteorological stations:
The solar farm would have two spatially distinct metrological stations on- site to monitor local climatic conditions and for performance monitoring.

Internal access tracks:
Internal access tracks would be all-weather with an indicative width of 4 m. Passing lanes and turning circles would be provided in line with requirements of the Bushfire Management Plan.

Security fencing:
Security fencing would be installed around the perimeter of the site to an indicative height of 2200 mm. A series of security cameras would be installed on the perimeter fencing and would be fitted with infrared sensors to provide 24/7 coverage of the site boundary.

Tintinhull Road re-alignment:
Only if a Voluntary Planning Agreement is executed with the YVC with agreement on the relevant works, a new public road connection between Tallagandra Lane and Tintinhull Road would be constructed across the southeast corner of the site. This will provide an alternative access to Tintinhull Road from Tallagandra Lane which does not traverse Lot 7001 DP96227 (Image 5 of Attachment 1). Lot 7001 is a Crown land parcel, however if sold in the future to a private entity, the existing Tintinhull Road segment through this lot could be closed to the public. The proposed new public road connection would be approximately 220m in length and built to meet the ‘Access’ category of the rural road standards in Council’s Road Standards Policy (YVC, 2013) (5.5m minimum pavement width, 20m road reserve, gravel finish). Subdivision is also proposed to

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Project site	1	-35.121195052659	149.19546001493
Project site	2	-35.121146611649	149.19543040323
Project site	3	-35.121122393277	149.19504545385
Project site	4	-35.120008948805	149.19507506293
Project site	5	-35.119113125939	149.19477937819
Project site	6	-35.118459506689	149.19433520281
Project site	7	-35.117491351258	149.19338806216
Project site	8	-35.115966085457	149.18214166715
Project site	9	-35.109719736233	149.183236438
Project site	10	-35.109937401852	149.1856633002
Project site	11	-35.106620435473	149.18622592104
Project site	12	-35.10674155739	149.18723228508
Project site	13	-35.10269803789	149.18791292312

Area	Point	Latitude	Longitude
Project site	14	-35.102867619685	149.1892149745
Project site	15	-35.099986095587	149.18977759404
Project site	16	-35.101511662632	149.20090597316
Project site	17	-35.100252238518	149.2011424345
Project site	18	-35.102576907821	149.21884158004
Project site	19	-35.109647066617	149.21759832378
Project site	20	-35.107395270641	149.19975154935
Project site	21	-35.114683011511	149.19830144081
Project site	22	-35.114731456364	149.19856751385
Project site	23	-35.119621765653	149.19744313393
Project site	24	-35.119210010347	149.19519350969
Project site	25	-35.119645984472	149.19537117985
Project site	26	-35.120275375578	149.19546001493
Project site	27	-35.121195052659	149.19546001493

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

The project site (the site) is located within the Yass Valley Council area and zoned Primary Production (RU1) under the *Yass Valley Local Environment Plan 2013*.

The Yass Valley Council area occupies around 4,000 km2 of land in south-eastern NSW with Yass as its main town centre. Yass is approximately 40km northwest of the site, with Canberra being the site's nearest major settlement approximately 22km to the southwest (distance to CBD) (Figure 1 attached). Sutton is the nearest village, approximately 7km to the southeast. Other townships and villages within the Council area include Gundaroo, Murrumbateman, Binalong, Bookham, Bowning and Wee Jasper. It is estimated that around half of the Council's work force commutes to the ACT (YVC, 2014).

The site is greenfield comprising large paddocks used exclusively for grazing sheep and cattle. With the exception of a seven-hectare patch of woodland in the western portion of the site, the site is largely cleared, with some scattered trees and rows of trees along fence lines. The topography is gently undulating with a few knolls and ridges. The site contains a few dams and various tributaries that drain into Back Creek which flow towards the northeast and eventually discharges into the Yass River.

There are no residential dwellings or other major structures within the site and the site is fenced into paddocks with barbed wire and wooden fencing. The area surrounding the site consists of similar cattle and sheep grazing areas.

Two large existing overhead electricity transmission lines traverse the southern portion of the site in a northwest-southeast direction. The transmission lines are both TransGrid owned and operated assets and are comprised of the Canberra to Capital Wind Farm 330 kV circuit and the Canberra to Queanbeyan 132 kV circuit. The project is proposing to connect to the 132 kV circuit (feeder 977) via an onsite substation under the transmission line. A buried gas pipeline also runs through the site in a southwest-northeast direction.

The project site is approximately 370 ha in size, of which approximately 190 hectares will be occupied by the solar farm and associated infrastructure (the development envelope) (Figure 2). The ecological survey was concentrated on the 370 ha project site.

The final development footprint will be slightly smaller than the development envelope incorporating minor variations in regard to the layout and shape of particular features. However, there will be no additional ecological impacts for MNES compared with those addressed within this referral. Minor ancillary infrastructure, such as underground cabling and fencing, may be placed outside the development envelope and would be sited to avoid all environmentally sensitive areas.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

Project site (the site) is ~370ha of which the development envelope is 190ha.

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lots 10, 15, 54, 97, 111, 161, 182, 189, 190 and 202 of DP754908 and Lot 1 of DP198933.

1.8 Primary Jurisdiction.

New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 09/2018

End date 09/2049

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Permissibility

The proposed development is located on land zoned RU1 Primary Production under the *Yass Valley Local Environment Plan 2013*. Electrical generation is not listed as permissible with consent in this zone, however the proposed development is permissible with consent on any land under clause 34(7) of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP). As outlined in clause 8 of the ISEPP, where there is an inconsistency between the ISEPP and any other environmental planning instrument, the ISEPP prevails to the extent of the inconsistency and permits solar developments with development consent in the RU1 zone.

Therefore, the proposed development is permitted with consent, and will be assessed under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Environmental Planning and Assessment Act 1979

The EP&A Act, *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and associated environmental planning instruments such as State Environmental Planning Policies (SEPPs) and LEPs provide the framework for the assessment of environmental impacts and approval of development in NSW.

The EP&A Act authorises the making of environmental planning instruments including *State Environmental Planning Policy (State and Regional Development) 2011* (S&RD SEPP) that covers the scope, power and content of plans. The EP&A Act also establishes the process for the assessment and approval of development which requires consent under Part 4.

Section 89C of the EP&A Act is relevant to this project and provides for a process where development can be declared as State Significant Development (SSD) either by a SEPP or Ministerial order published in the Gazette. Section 89D of the EP&A Act provides that the Minister for Planning is the consent authority for SSD. Part 4.1 of the EP&A Act sets out provisions which apply to the assessment and determination of SSD.

State Environmental Planning Policy (State and Regional Development) 2011

The S&RD SEPP identifies development that is classified as SSD or State Significant Infrastructure (SSI). Clause 20 of Schedule 1 of the S&RD SEPP states that the following is SSD for the purposes of section 89D of the EP&A Act:

Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:

a. has a capital investment value of more than $30 million, or

b. has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.

As the project would have an estimated capital investment value greater than $30 million, the project is classified as 'State Significant Development' and is subject to assessment and determination under Part 4 of the EP&A Act. The Minister of Planning and Environment or their delegate is the consent authority for SSD.

State Environment Planning Policy (Infrastructure) 2007

The ISEPP aims to facilitate the effective delivery of infrastructure across the State. Clause 34(7) outlines that development for the purpose of a solar energy system may be carried out by any person with consent on any land. Clause 34(8) limits the capacity of solar energy systems in prescribed residential zones to no more than 100 kW. The proposed site is zoned RU1 under the Yass Valley Council Local Environment Plan 2013 and as such is not a prescribed residential zone and is therefore not subject to Clause 34(8).

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Renew Estate identified a list of relevant stakeholders at the beginning of the project's planning phase. This list will continue to evolve throughout the various stages of the planning process. The identified categories are:

- Landowners and residents, including landowners or residents whose property adjoins the project site and other local landowners or residents who are likely to be directly affected by the project or are on or near the project's likely transport routes

- Aboriginal people, Aboriginal organisations or their representatives with cultural or heritage connections with the project area

- Yass Valley Council

- NSW Department of Planning & Environment (DP&E)

- NSW Office of Environment and Heritage

- Commonwealth Department of Environment and Energy

- Other regulators via the DP&E

- Goulburn Chamber of Commerce

- Sutton Landcare

- NSW Rural Fire Service

- Local business owners

- Local community groups

- Local political representatives, including The Hon. Pru Goward, MP NSW for Goulburn and The Hon. Mike Kelly, Federal MP for Eden-Monaro

- Relevant electricity authorities, including Australian Energy Market Operator (AEMO) and Transgrid

- Local media

Renew Estate is committed to front-of-project, frequent and local consultation. As such, Renew Estate commenced its engagement activity early with telephone calls and face to face meetings with identified stakeholders. Engagement activities have continued throughout the development of the project's Environmental Impact Statement including regular communication with local community members.

In December 2017 a community drop-in information session was held in Sutton. Between 40-60 members of the local community attended this session, which provided a forum to learn more about the proposed project and ask questions. Another community drop-in session will be held during the EIS exhibition period in the coming weeks.

A project website (www.springdalesolarfarm.com.au) was established in October 2017 and provides project information as well as a channel for feedback and enquiries.

Renew Estate will continue to regularly engage with the community and stakeholders throughout all stages of the project. In order to ensure a broad saturation of project information and demonstrate presence in the community, Renew Estate also intends to continually inform local media regarding project updates, events and milestones.

Consultation with Aboriginal people, Aboriginal organisations or their representatives has been carried out in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) as part of an Aboriginal Archaeological and Cultural Heritage Impact Assessment undertaken for the project.

The Registered Aboriginal Parties (RAPs) contributed to the Aboriginal Archaeological and Cultural Heritage Assessment undertaken for the project by:

- providing relevant information about the cultural significance and values of the Aboriginal objects and places within the proposal site.

- influencing the design of the method to assess cultural and scientific significance of Aboriginal objects and places within the proposal site.

- actively contributing to the development of cultural heritage management options and recommendations for Aboriginal objects and places within the proposal site.

- commenting on the draft Aboriginal Archaeological and Cultural Heritage Assessment report.

The outcomes of consultation undertaken to date and how raised issues have been addressed, will be documented in the Environmental Impact Statement.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

An Environmental Impact Statement (EIS) is currently being prepared by AECOM Australia Pty Ltd on behalf of Renew Estate in support of the State Significant Development Application (SSD 8073) for the project.

The EIS sets out the background environment and assesses the likely impacts associated with construction, operation and decommissioning of the project. The EIS is being prepared in accordance with the requirements of Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), and the Secretary's Environmental Assessment Requirements (SEARs) issued on 26 September 2017. Specifically the EIS seeks to fulfil the requirements of Section 79C of the EP&A Act and Schedule 2 of the EP&A Regulation while also satisfying the specific requirements of the SEARs with respect to environmental, social and economic factors relevant to the project.

The preparation of the EIS is almost complete and will be lodged to the Department of Planning and Environment (DP&E) in the coming week. Following a sufficiency check by DP&E, the EIS will be placed on public exhibition for a period of at least 30 days.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

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

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Species: Golden Sun Moth (Synemon plana)	Habitat modification from the project is

Species	Impact
Likelihood of Occurrence: Known Potential for Impacts (refer Attachment 6 for assessment of significance): Likely, non-significant impacts given proposed management. Refer to attached 'Summary of Field Surveys Undertaken'.	considered unlikely to lead to the species declining for the following reasons: - Impacts to GSM habitat have been confined to 4.52 hectares of low condition habitat where the predominant impact would be increased shading via solar panel introduction. Major infrastructure elements of the Project requiring excavation (beyond introduction of single poles for panel arrays) would not occur within identified GSM habitat areas. - Approximately the western third of the Project site, which constitutes the highest quality GSM habitat within the site, would be set aside and would not be covered by solar panels. - The Project site is currently under an agricultural grazing regime, including the improvement of pastures for this purpose. Such activities, particularly the regular application of superphosphate and other fertilisers, is considered to be detrimental to the long term integrity of GSM habitat. The construction of the Project would remove the need for the application of fertilisers thus allowing native grasses to recolonise areas of exotic pasture grass and hence increasing the quality and size of areas able to be occupied by this species. - The Project would retain livestock grazing during operation, albeit at a lower intensity than is currently present. This would act to maintain weed control throughout the site and to maintain areas as open native grassland, directly benefiting GSM through maintaining and potentially enhancing the site’s habitat value. Accounting for the above factors, it is considered that while some deleterious impacts from shading within the development envelope of the Project will adversely impact on 4.52 hectares of low condition GSM habitat, overall improvements in habitat within the Project site should lead to an increase rather than a decline in the species.
Species: Superb Parrot (polytelis swainsonii) Likelihood of Occurrence: Known Potential for Impacts (refer Attachment 6 for assessment of significance): Likely, non-significant impacts. Refer to attached 'Summary of Field Surveys Undertaken'.	Two separate sightings of Superb Parrots were recorded during the field survey. One was of two adult birds flying low over the south-eastern part of the Project site and the other was of two birds heard calling from a large hollow Yellow Box (Eucalyptus melliodora) tree. The latter

Species	Impact
	observation was considered to be of a breeding pair since two birds were heard sporadically over a 20 minute period, while only one bird was sighted. This is likely to have been due to the female of a breeding pair occupying the hollow tree for nesting. Superb Parrots are reliant on tree hollows for breeding. Fourteen hollow-bearing trees would be cleared for the Project, however the majority of these trees are Brittle Gum (Eucalyptus mannifera), which is not a known breeding tree for the Superb Parrot. One Apple Box (Eucalyptus bridgesiana) and one Red Box (Eucalyptus polyanthemos) tree with appropriate hollows for the Superb Parrot are included in the 14 trees to be cleared. Superb Parrots were not sighted using these trees during surveys conducted at the Project site. Nonetheless, mitigation measures would be implemented to ensure breeding was not occurring in any hollow-bearing trees prior to clearing. Appropriate nest boxes for this species would also be installed in preferred breeding trees (e.g. Yellow Box) within the Project site that have no hollows. This will assist in compensating for any loss of breeding habitat. Opportunities to avoid clearing of hollow bearing trees were limited due to avoidance measures for GSM habitat incorporated into the Project design. Some potential foraging habitat for the Superb Parrot may be removed as a result of the Project. However, landscape plantings and management of retained woodland areas within the Project site should compensate for any reduction in foraging resources. Overall, the limited nature of the above impacts are such that a significant impact on the Superb Parrot from the Project is not considered likely.
Species: Striped Legless Lizard (Delma impar) Likelihood of Occurrence: Moderate Potential for Impacts (refer Attachment 6 for assessment of significance): Potential - with minimal impacts. Refer to attached 'Summary of Field Surveys Undertaken'.	Surveys conducted within the development footprint and wider Project site did not identify any evidence of the Striped Legless Lizard. However, the survey conducted was limited in scope and it is considered that marginal breeding and foraging habitat for the species could occur within the Project site. The majority of areas with long-term habitat for the Striped

Species	Impact
	Legless Lizard present (typically lower lying areas where the introduced tussock grass Phalaris aquatica occurs) will not be impacted by the Project. However, impacts will occur within some areas of marginal habitat for the Striped Legless Lizard, constituting areas of Phalaris aquatica exotic grassland clumps and, potentially, native grassland within the development envelope. Over time, this may encourage thick tussock development when grazing pressures are removed. Floristic survey in better quality native grassland areas revealed low percentage cover of native tussock grasses and limited development of tussocks in terms of their density and height where they did occur. Impacts from the Project will therefore predominantly consist of shading of marginal low quality habitat with some clearing to occur as well. As clearing and shading is confined to marginal potential habitat, no significant impacts are considered likely to occur as a result of the Project.
Threatened Ecological Community: Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory (Natural Temperate Grassland) Refer to attached 'Summary of Field Surveys Undertaken'.	The remnant areas of this community within the development envelope were too degraded to meet the condition thresholds for the TEC because within the 40m2 BAM floristic plots conducted: - no areas had sufficient cover of nominated native species (Themeda triandra, Poa labillardierei, Carex bichenoviana); and - no areas contained either eight native species or two indicator species.
Threatened Ecological Community: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box Gum Woodland) Refer to attached 'Summary of Field Surveys Undertaken'.	The Box Gum Woodland derived grassland areas within the development envelope were too degraded to meet the condition thresholds for the TEC because within the 40m2 BAM floristic plots conducted: - no areas had 12 native species; and - no areas were part of a patch with an average of 20 mature trees per hectare or where natural regeneration of dominant overstorey eucalypts occurred.

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

Flora

A total of 52 flora species (Attachment 5) were recorded during field surveys conducted at the Project site, including 28 exotic species (five of which are classed as high threat weeds under the NSW Biodiversity Conservation Act 2017 and one of which is a weed of national significance under the EPBC Act). The high threat weed species are sporadically distributed throughout the Project site particularly where high levels of soil disturbance and nutrient enrichment have occurred. The high threat weeds identified include the following species: *Eragrostis curvula* (African Lovegrass), *Paspalum dilatatum* (Dallas Grass), *Bromus diandrus* (Ripgut Brome), *Acetosella vulgaris* (Sheep's Sorrel) and *Nassella trichotoma* (Serrated Tussock). Serrated Tussock is a weed of national significance.

Apart from declared weed species, common environmental weed species recorded within the Project site include: *Cirsium vulgare* (Spear Thistle), *Erodium cicutarium* (Redstem Stork's Bill), *Hordeum leporinum* (Barley Grass), *Hypochaeris radicata* (Catsear), *Phalaris aquatic*, *Bromus hordeaceus* (Soft Brome), *Trifolium subterraneum* (Subterranean Clover), *Bromus hordeaceus* (Soft Brome) and Vulpia sp. (Rat's-tail Fescue).

Dominant native species recorded included grass species *Rytidosperma carphoides* (Short Wallaby Grass), *Rytidosperma auriculatum* (Lobed Wallaby Grass), *Austrostipa bigeniculata* (Doublejointed Speargrass) and *Goodenia pinnatifida* (Cut-leaved Goodenia), with the greatest concentrations of native species found to occur within and adjacent to rocky outcrops, in paddock corners and edges and immediately upstream of farm dams. Such areas are likely to have experienced lower levels of disturbance due to undesirable characteristics for pasture improvement.

Fauna

A total of 47 fauna species were recorded during field surveys conducted at the Project site, comprising five mammal, 35 bird, four frog and three reptile species. Species recorded within the development envelope tended to be common widespread species tolerant of clearing. Four species of threatened fauna were detected during targeted survey within the Project site (Figure 5): the Golden Sun Moth (Critically Endangered), Superb Parrot (Vulnerable), Dusky Woodswallow and Varied Sittella, with the two latter species listed as vulnerable in NSW only (i.e. not listed under the EPBC Act).

A suite of species were only present outside of the development envelope, associated with consolidated areas of vegetation and improved availability of fauna microhabitats (for example within the wooded area to the west of the development envelope).

Available fauna habitat within the Project site is relatively degraded with only some remnant pockets of native vegetation remaining. Large scattered paddock trees remain on the undulating slopes. However, much of the Project site consists of exotic pasture which provides little in the way of important habitat for native species. Some patchy occurrences of derived native grassland occur in areas which have experienced lower levels of ploughing, pasture improvement or fertilising.

The following broad fauna habitat types occur across the proposed development envelope:-

- Exotic pasture;

- Paddock trees (with occasional hollows);

- Derived native grassland; and

- Aquatic habitat consisting of small farm dams.

The scattered Eucalypts would provide foraging habitat during their flowering periods. However, there is a paucity of winter flowering species within the Project site. The Project site contained little to no regenerating eucalypts, which can be attributed mainly to the continual grazing of the site. The condition of vegetation within the Project site is generally degraded with some patches with improved condition (depending on fertility and past grazing exposure), the more fertile areas are generally more degraded.

Exotic Pasture

Exotic pasture dominates the Project site and provides limited habitat for the majority of native fauna. Areas of dense pasture along the floodplain provide some habitat for amphibians and reptiles. However, those areas are outside of the area of the development envelope.

Paddock trees

Scattered paddock trees occur throughout the Project site. The majority of these include Yellow Box (*Eucalyptus melliodora*) on the lower slopes and Brittle Gum (*Eucalyptus mannifera*) along other slopes and ridgelines where fertility decreases. Some other less common species include Apple Box (*Eucalyptus bridgesiana*) and Red Box (*Eucalyptus polyanthemos*). Many of the remnant trees are large mature trees (40 – 100 cm diameter at breast height).

Twenty-five hollow bearing trees supporting an estimated 86 hollows were recorded at the Project site, with a large proportion of the hollow bearing trees occurring within a single stand. Fourteen of these hollow bearing trees are within the development envelope and would be cleared for the Project, with the majority of these trees being Brittle Gum. However, one Apple Box (*Eucalyptus bridgesiana*) and one Red Box (*Eucalyptus polyanthemos*) will also be cleared.

Hollow limbs and branches periodically fall from trees; however, most have been removed from the surrounding ground as a result of agricultural activities.

Derived Native Grassland/Natural Temperate Grassland

Derived native grassland within the development envelope is considered to be derived from Yellow Box Blakely's Red Gum Grassy Woodland and Brittle Gum Woodland communities. Natural temperate grassland offers similar habitat to derived native grassland. The habitat is fragmented, poor quality and has a low diversity of native species. Habitat within these areas is limited as a result of previous and ongoing disturbance. Native grasses within these areas are kept low to the ground from grazing of livestock. Outcropping rock occurs occasionally throughout derived native grassland patches and grasses, which has aided in avoidance of soil profile changes and sowing of introduced species. Outcropping rock provides limited fauna habitat. However, much of the loose surface rock in these areas has been removed and there is limited exfoliating rock.

Aquatic Habitat (farm dams)

Eight farm dams occur within the proposed development envelope, which are from 0.05 – 0.15 ha in size. The dams differ in their shape and depth and accordingly the quantity and diversity of aquatic macrophyte and shallow benthic habitat. These characteristics are important in determining the diversity and abundance of vertebrate fauna. In general terms the dams are typical of farm dams in the area and include small areas of fringing low diversity aquatic macrophyte assemblages within their shallows. The dams would play a role in water supply for vertebrate fauna and may act as foraging habitat for bats, birds and frogs. The ephemeral creeks throughout the development envelope do not support permanent pools. Water from the minor ephemeral watercourses within the development envelope either diverts to small dams or percolates through the underlying bedrock.

Disturbance

As noted, ploughing, pasture improvement and regular fertilising with superphosphate has occurred throughout all the high fertility areas of the Project site. Weeds are common throughout the site (including localised patches of high threat weed species). There was no evidence of recent bushfire throughout the Project site.

3.2 Describe the hydrology relevant to the project area (including water flows).

The Project site is drained by a number of minor ephemeral drainage lines into Backs Creek to the north. These creeks are tributaries of the Yass River, which is located approximately 10 km from the Project site and flows eastward into Lake Burrinjuck, approximately 80 km downstream and continues in to the Murrumbidgee River.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Soils

A search of the Australian Soil Classification (ASC) Soil Type Map of NSW reveals that the project site is largely dominated by the Kurosol soil type. Kurosols, also known as duplex soils, have a strong texture contrast between the surface and the B horizon. They generally have very low agricultural potential with high acidity (pH <5.5) and low chemical fertility. Kurosols commonly have low water holding capacity and are often saline.

The Hydrologic Groups of Soils in NSW provides an estimate of Hydrologic Groups of soils in NSW according to a four class system. The project site has been rated as C under this classification representing soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. Class C soils have a slow rate of water transmission.

Vegetation

Vegetation within the Project site is largely comprised of exotic pasture with scattered paddock trees and small patches of fragmented low quality Derived Native Grassland as well as a small area of Natural Temperate Grassland.

The vegetation on site has been subject to historic clearing, ploughing, pasture improvement and fertilizing. The vegetation communities which occur on site are described in Section 3.5 and illustrated in Figure 2 attached.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

Significant natural features which occur within close proximity to the site include Goorooyarroo Nature Reserve, Mulanggari Grassland Nature Reserve and Mulligans Flat Nature Reserve. These nature reserves are located approximately 5 km south of the Project site within the ACT boundary and will not be affected by the Project.

3.5 Describe the status of native vegetation relevant to the project area.

Refer to attached 'Section 3.5 response'.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The project site is on mildly undulating terrain that slopes gently from west to east with an average gradient of 2.5%.

3.7 Describe the current condition of the environment relevant to the project area.

Clearing has historically occurred over much of the Project site with most of the development envelope consisting of exotic pasture. Several windbreaks planted with exotic tree species occur throughout the development envelope. There are still some pockets of remnant vegetation remaining on the ridgelines or as isolated paddock trees with an exotic/weedy understory. These isolated paddock trees contain occasional hollows. However, there is a lack of fallen logs under trees due to their removal for agriculture or firewood. Patches of fragmented native grassland occur in low condition as described in previous sections. A large patch of woodland occurs towards the western edge of the study area, outside of the development envelope. This remnant patch of woodland contains many hollow trees and would be retained as part of the project. Feral animals were observed throughout the survey, including foxes, starlings and rabbits.

Some areas contained bare patches of ground where trampling or overgrazing has occurred in the past. However, the development envelope did not contain extensive areas of erosion.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

Searches of the National Heritage List, Commonwealth Heritage List and the Register of the National Estate were undertaken in November 2017, with no listings identified for the project site.

No historic heritage values were been identified within the Site or directly adjacent to it. Aboriginal heritage values are discussed in Section 3.9.

3.9 Describe any Indigenous heritage values relevant to the project area.

A total of 15 Aboriginal archaeological sites, comprising 12 open artefact sites and three potential Aboriginal scarred trees were identified within the project site as part of the Aboriginal Archaeological and Cultural Heritage Impact Assessment (AACHIA) undertaken for the project. All but one Aboriginal site was assessed as of low scientific significance with one open artefact scatter site assigned moderate significance due to its research potential.

Consideration of the location of Aboriginal sites within the site in relation to the location proposed project related impacts, as well as exclusion areas for environmental constraints, indicates that three open artefact sites comprising two artefact scatters and one isolated artefact site will be wholly impacted by the project. No potential scarred trees would be impacted.

Mitigation and management measures to address the impacts of the project on the known Aboriginal archaeological resource of the Site are outlined in the AACHIA.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the

project area.

This site is freehold however the landowner of the project site will lease the land to Renew Estate for the duration of the project.

3.11 Describe any existing or any proposed uses relevant to the project area.

The site is greenfield comprising large paddocks used exclusively for grazing sheep and cattle.

There are no residential dwellings or other major structures within the site and the site is fenced into paddocks with barbed wire and wooden fencing. The area surrounding the site consists of similar cattle and sheep grazing areas.

Two large existing overhead electricity transmission lines traverse the southern portion of the site in a northwest-southeast direction. The transmission lines are both TransGrid owned and operated assets and are comprised of the Canberra to Capital Wind Farm 330 kV circuit and the Canberra to Queanbeyan 132 kV circuit. The project is proposing to connect to the 132 kV circuit (feeder 977) via an onsite substation under the transmission line. A buried gas pipeline also runs through the site in a southwest-northeast direction.

Section 4 - Measures to avoid or reduce impacts

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

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

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

As the MNES relevant to the Project relates to biodiversity values, this section is focused on mitigation measures associated with these values.

Avoidance, management and mitigation measures are associated with the three broad stages of the Project:

1. Project design;

2. Construction; and

3. Operation.

Project Design

Project design relates to site selection, designing and redesigning elements of the Project to minimise vegetation clearing and to avoid impacts to:

- Significant habitats, vegetated areas/corridors and threatened biodiversity values;

- Aboriginal heritage values;

- Water resources including Back Creek and an unnamed tributary of Back Creek which run through the Project site; and

- Neighbouring landowners and the local community.

Site selection

The Project site has been chosen due to its high-level of solar resource and ideal climatic conditions, proximity to existing overhead electricity transmission lines with sufficient connection capacity, high and growing energy demand in the region, availability of land at a suitable scale

with large open paddocks, suitable topography, site accessibility and proximity to existing townships and a local labour force. The development envelope (including access roads, photovoltaic solar modules, power conversion stations, a control building and an electrical switchyard and substation) has been tailored to avoid impacts to ecology or other significant environmental values wherever feasible.

Competing constraints (e.g. ecology and visual) means that at times a compromise must be made between certain values, and as such it has not been possible to entirely avoid ecological impacts.

Design considerations

Renew Estate has aimed to avoid and minimise environmental impacts from the Project during the design process. This process has involved:

- A Preliminary Environmental Assessment (PEA) for the project which included identification of potential constraints such as threatened vegetation communities, threatened species habitat and other identified ecological constraints, existing road and utility corridors, and watercourses.

- Reduction in the project footprint around watercourses to reduce flood risk, and reduction in the development envelope in the west to mitigate visual impacts to residential receivers and to conserve moderate quality GSM habitat identified during early phases of field survey work.

- Further reduction in project footprint to avoid Aboriginal heritage sites as much as practicable.

- Biodiversity assessment as documented within this Referral and consistent with State and Federal environmental legislation and approval processes. The biodiversity assessment involved refined mapping of TECs and threatened species habitat with particular attention to higher quality GSM habitat which was identified as a major constraint for the Project. This informed the final refinement of the development envelope to avoid the majority of impacts to GSM habitat and other ecological constraints identified during the biodiversity assessment. This included review of the location of specific project infrastructure so that clearing was located outside of GSM habitat and impacts to such areas are confined to shading, minor trenching and installation of tracker supports.

- Where significant features could not be avoided, mitigation measures to minimise impacts have been identified and commitment to as part of operation management practices for the site to improve habitat values, particularly for GSM.

Construction and Operation

Construction includes activities such as the installation of the proposed photovoltaic solar modules mounted on steel piles, approximately 20 containerised power conversion stations, an electrical switchyard and substation under the existing 132kV TransGrid transmission line, control building including office, access tracks, security fencing and meteorological stations.

Operation includes activities directly related to the operation of the Springdale solar farm once

construction is complete.

Management and Mitigation Measures

A Biodiversity Management Plan (BMP) will be prepared as part of the overarching set of environmental management documents for the site, to inform and manage construction and operation activities throughout the life of the project to protect and manage important biodiversity values. Key commitments to be covered by the BMP include a threatened species management plan (Golden Sun Moth Management Plan), vegetation management plan (protocols for tree clearing), pest and weed management plan, livestock grazing management plan, erosion and sediment control plan and fire management plan.

The BMP will include specific protocols dealing with any potential interaction between the project activities and threatened flora or fauna species during the life of the Project. The BMP will include directions for survey, monitoring and management of key threatened species likely to be impacted by the project and protocols for reporting and managing any unforeseen threatened species occurrences within the Project site.

The following management and mitigation measures will be implemented during the construction and operation phases of the Project and documented through the BMP:

- Establishment of fenced buffer areas (nominally a 50 m buffer) around retained GSM habitat, with fencing maintained throughout the construction phase of the Project.

- Establishment of fenced buffer areas (nominally a 50 m buffer) around GSM habitat located within development envelope until the area is required for solar array construction.

- Establishment of a GSM habitat conservation zone measuring no less than 60 hectares throughout the western portion of the Project site, which would protect and enhance GSM habitat (see Figure 6 for indicative layout).

- Management of GSM habitat within the GSM conservation area and three western solar field areas (including the two solar fields containing GSM habitat) via implementation of a Golden Sun Moth Management Plan to maintain preferred ground cover conditions for the species via careful management of stocking rates and/or use of slashing;

- Fencing specifications that will allow passage of adult GSM throughout the Project area (e.g. maintenance of the current 5–strand wire or barbed wire fencing internally and chicken wire (or similarly permeable) security fencing along external boundaries);

- Discontinuation of pasture improvement practices within the GSM conservation zone and throughout all solar fields;

- Landscaping plans that do not impact mapped GSM habitat;

- Establishment of a woodland enhancement zone for woodland areas in the west of the Project area.

- Pre-clearing inspections of hollow trees to be removed to ensure the absence of roosting/breeding threatened species with the potential to occur. Any native vertebrate fauna present within hollow trees will be managed to minimise the risk of mortality or injury. Undertake tree clearing in accordance with best practice principles;

- Clearing should not be undertaken during the Superb Parrot breeding season;

- Installation of nest boxes within the Project site specifically for Superb Parrots within preferred breeding trees for individuals not already containing hollows. The number of nest boxes will be at least twice that of the existing number of hollows appropriate for Superb Parrot breeding that are to be removed by the project as determined via a final survey of hollow trees.

- Establishment and documentation of a nest box management plan to be included within the BMP;

- Landscape planting (see Attachment 8) focusing on naturally occurring endemic tree and shrub species to compensate for loss of foraging habitat due to the removal of large trees;

- Ensuring vehicles remain on designated roads and tracks whenever possible, through use of signposting and driver education during the induction process and in ongoing project discussions;

- Establishment and regular maintenance of erosion and sediment controls during construction and until excavated areas are vegetated; and

- Management and removal of all waste from the Project site.

Ongoing Monitoring

The BMP will outline monitoring programs to be set up to measure the success of management and mitigation measures. Monitoring programs will include goals and performance indicators and allow for adaptive management in response to performance measures (e.g. in relation to optimising habitat for GSM through prescribed stocking and slashing).

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

Golden Sun Moth

The overall proposed environmental outcome for the Golden Sun Moth is to limit impacts from the project and to increase the amount of overall habitat available for the species via implementation of a GSM Management Plan (the elements of which have been described in the preceding section).

Development envelope

Within the development envelope, the proposed environmental outcome is to limit the extent and severity of impacts to Golden Sun Moth as far as possible and to achieve habitat improvement by employing the following measures:

- Protection of GSM habitat throughout the construction phase of the project (as far as possible) through erection of appropriate temporary fencing and signage

- Improve GSM habitat through establishment and implementation of a GSM Management Plan

GSM conservation zone

The majority of the western portion of the Project area would be managed to improve habitat for GSM (Figure 6). The proposed environmental outcome for this zone is to expand the area of habitat for GSM. Management actions prescribed within a GSM Management Plan, such as controlled grazing or slashing and ceasing the use of superphosphate fertilisers, would improve existing GSM habitat. These management actions would also promote the expansion of GSM habitat as areas between mapped habitat (consisting of exotic pasture with some minor native components) improve. These improvements are possible since damaging management practices currently applied throughout the project site are expected to limit GSM habitat quality and population density (Rowell 2018). Such limitations are due to management promoting fluctuating biomass within GSM habitat and poor quality grassland between patches of habitat (e.g. thick exotic cover).

Striped Legless Lizard

The Striped Legless Lizard is not expected to occur or be impacted by the project and therefore there is no specified proposed environmental outcome for the species. While not expected to occur, there is some potential for impact for the species (since its absence from the Project site could not be confirmed). The potential impact consists predominantly of shading of marginal low-quality habitat, with some clearing to occur as well. As clearing and shading is confined to marginal habitat, impacts are considered limited.

Management of the development envelope to enhance habitat for GSM is proposed, which in the majority of the development envelope will also assist in improving habitat potential for Striped Legless Lizard. However, management for GSM is limited in its capacity to promote areas of thick tussock grasses preferred by Striped Legless Lizard, therefore, while some improvement of potential habitat would be expected to occur, this would be limited.

Superb Parrot

The proposed environmental outcomes for the Superb Parrot would be to avoid the clearing of any active nest trees during the breeding period for the species, to mitigate against the loss of a small number of potential nest trees through erection of nest boxes and to enhance foraging habitat for the species through landscaped plantings using preferred feed species. In addition, areas of Box Gum Woodland, which would be expected to be used by the species, would be managed to improve condition.

Two potential breeding trees would be impacted by the project, however these trees were not confirmed as breeding habitat during survey and the limited extent of impact is unlikely to be significant. Appropriate nest boxes for this species would be installed in preferred breeding trees (e.g. Yellow Box) that have no hollows within the project site to assist in compensating for any loss of breeding habitat. Opportunities to avoid hollow bearing trees were limited due to avoidance measures for GSM habitat incorporated into the design.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Impacts from the Project that have the potential to affect matters protected under the EPBC Act have been considered within this referral submission. Key MNES potentially impacted by the Project have been assessed via assessments of significance in accordance with EPBC Act guidelines.

The conclusion of assessments of significance performed for Golden Sun Moth, Superb Parrot and Striped Legless Lizard, which were the identified MNES species potentially impacted by the Project, is that no significant impact is likely to occur. The non-significant impact conclusion is primarily based on consideration of avoidance measures to lessen direct impacts and also considers management of areas that would experience indirect impacts such as shading. Current deleterious management practices for Golden Sun Moth would be replaced with targeted management to improve habitat.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Yes. Renew Estate was formed in 2017. All existing Renew Estate projects are currently in the planning phase, with no breaches of environmental laws or environmental negligence.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Not applicable.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Making a positive impact on the environment is central to Renew Estate's mission. To this end, we are committed to the principals of sustainable development and environmental stewardship, and all actions are undertaken in accordance with our Environmental Policy and Environmental Management System.

With each project, our goal is to enhance the environmental, social and economic conditions for all stakeholders, including local communities and our employees.

Renew Estate will:

- conduct business responsibly and in full compliance with statutory and regulatory bodies;

- continually assess and review the environmental effects of our activities, both on company

premises and on all project sites;

- actively promote the use of recyclable and renewable materials;

- provide training and information to employees on environmental issues including waste management and how to minimise energy use

- engage with suppliers, manufacturers and other companies that demonstrate similar values and commitment to environmental management;

- engage openly and effectively with local communities.

Renew Estate's Environmental Policy and Environmental Management System is communicated to all employees, suppliers and sub-contractors and is reviewed bi-annually by the company Directors.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
ACT Government (2017) Golden Sun Moth (Synemon plana): An endangered species, Action Plan (Environment ACT. Canberra).	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
DEC (2004) Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities. NSW Department of Environment and Conservation, Sydney.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
DoE (2009) Significant impact guidelines for the critically endangered golden sun moth (Synemon plana) Nationally threatened species and ecological communities EPBC Act policy statement 3.12, Department of Environment, National Circuit, Barton ACT.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
DoE (2018) SPRAT Profiles (accessed January 2018), http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl, Commonwealth Department of the Environment and Energy. Provides access to threatened species profiles, recovery plans and final determinations by the Commonwealth Scientific Committee.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
Mulvaney (2012) Golden Sun Moth (GSM) Draft Interim ACT Strategic Conservation Plan,	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.

Reference Source	Reliability	Uncertainties
Report for the Flora and Fauna Committee (Conservation Planning and Research, ACT Government, Canberra). OEH (2015) Grasslands, Pre-Settlement, South-eastern Highlands, VIS_ID 4099, Office of Environment and Heritage.		
OEH (2016) Biodiversity Assessment Methodology - NSW Biodiversity Offsets Policy for Major Projects. State of NSW and Office of Environment and Heritage.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
Rowell (2017) Initial ecological inspection of Springdale Solar site, Tallagandra Lane, NSW, Report for Renew Estate.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
Rowell (2018) GSM survey at Springdale Solar site, Tallagandra Lane, NSW, Report for Renew Estate.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.
Yass Valley Council (YVC) (2014) Economic Development Strategy 2014-2017, accessed from <http://www.yassvalley.nsw.gov.au/sites/yassvalley/files/public/Yass%20Valley%20EDS_FINAL%20August%202014.pdf>.	Reliable	N/A
OEH (2015) Grasslands, Pre-Settlement, South-eastern Highlands, VIS_ID 4099, Office of Environment and Heritage.	Reliable	Any uncertainties have been listed and discussed within Section 2 & 3.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

Site selection

The site selection process involved the consideration of a number of alternative locations for the proposed solar farm. This included broad site exploration activities across the region as well as investigation of alternative site locations within the local area.

Managing environmental constraints and social aspects, improving infrastructure efficiency and matching localised energy demands were the major considerations in the evaluation of alternatives. The proposed site was shown to be more suitable than alternatives considered and was selected on the following basis:

- The site has a high-level of solar resource and ideal climatic conditions for a commercial-scale solar farm

- The site is in close proximity to existing electrical infrastructure with sufficient connection capacity. Co-location to transmission lines offers a rare opportunity for direct grid connection without significant new overhead lines and easements, and any potential impacts and efficiency losses that may result

- Other network electrical efficiencies: alleviating transmission and distribution losses for generation at this connection point in the network due to high, and growing, energy demands in the region

- Availability of land of a suitable scale for a viable commercial-scale solar farm project

- Suitability of the land for solar farm construction and operation, including minimal shading, suitable topography, site accessibility, low flood risk and proximity to existing townships and access to a local labour force.

Consistent with the above, the Yass Valley Council Economic Development Strategy (YVC, 2014) notes that due to its location, topography and climate, the Yass Valley could potentially be a significant producer of renewable energy from solar or wind sources.

ACT government official modelling (ACT Population Projections: 2017 – 2020, ACT Government, 2016) shows the total Canberra population is projected to increase by 6% by June 2020. The fastest growth is projected in the northern suburbs of Gungahlin, Crace, Casey, Franklin and Bonner.

TransGrid already supplies over 440 MW of peak demand into the Canberra substation, and another 70 MW into Queanbeyan, with these numbers projected to increase according to TransGrid's Transmission Annual Planning Report 2017.

The Project is located under TransGrid's 132 kV feeder 977, approximately 3.5 km north of the ACT and between the Canberra and Queanbeyan substations. The site is uniquely located to contribute to the additional electrical demand in Canberra over the coming decades.

Technologies Considered

- The project proposes to use solar PV electricity generating technology. This technology was selected for the project due to the following benefits:

- The technology is commercially proven, robust and has a low technical risk

- The technology has a low environmental impact in comparison to other power generation technologies

- The region has among the best solar resources in the world

- The technology has a rapid development potential in comparison to other power generation technologies.

- Ease of decommissioning at the end of project life, and ability to reinstate land to current agricultural purposes.

A number of PV module and mounting technologies have been considered for the proposed project. PV module technologies include the use of crystalline silicon and amorphous silicon thin film panels. Both technologies have similar visual characteristics and a robust track record of deployment across the globe. The final module type will be selected during detailed design.

Panel mounting technologies considered include fixed-tilt, north-facing panel mounting systems and single-axis tracking systems. Single axis tracking systems are typically aligned north-south and track the sun east to west moving throughout the day following the movement of the sun. A single-axis tracking system has been selected for the project. While this option is generally considered to be more costly, it has the benefit of improving the yield per panel, therefore allowing a smaller development footprint for the project. Reducing the development footprint provides for increased flexibility in site design to avoid environmental constraints and reduce impacts.

Single axis tracking systems also enable the facility to generate electricity earlier in the morning and later into the evening, better aligning generation profile with periods of high demand in the network.

The proposed tracking structures would be mounted on piles, which would be screw or pile driven depending on final geotechnical analysis. This eliminates the need for concrete and foundations which significantly reduces the impact of construction, keeping ground disturbance

to a minimum and allowing the design to follow the existing lie of the land.

The ‘do-nothing’ option

The ‘do-nothing’ approach would not provide additional generating capacity in region. By doing nothing, the demand in the region would continue to increase without a corresponding increase in generation (supply), resulting in further rises in wholesale electricity prices. This would inevitably lead to increases in retail electricity prices, which are already under heavy scrutiny at all levels of government within Australia and throughout national media. A do-nothing approach would also not achieve many of the strategic targets and goals of Australian, NSW or ACT governments.

The project would generate approximately 100 MWac of renewable energy which would contribute to the general shift towards renewable energy generation, in line with the NSW government policies and RET. If the project is not implemented, the increasing demand for electricity in NSW may be generated using conventional fossil fuel fired power stations which would accelerate resource depletion, increase local air pollution loads and contribute to climate change which runs counter to the NSW government’s RET.

The ‘do-nothing’ option would leave the site in its current agricultural land use, which is largely dominated by livestock grazing. Noting that low intensity livestock grazing be retained once the project was constructed, agricultural output would continue, albeit at a lower productivity level. The ‘do-nothing’ option would prevent the lease of the project land to the proponent, which provides an additional source of recurring income for the local landowner and represents a diversification of economic activities in the Yass Valley which is in line with current government economic strategy.

The SSF project would require approximately 200 workers during the peak construction period and approximately 5 permanent workers throughout the operation phase as well as periodic maintenance personnel. The ‘do nothing’ option would also deprive the local community from employment opportunities created during the construction and operation phase of the project.

The project would create business opportunities and provide a socio-economic boost to the local construction sector, suppliers of materials and services, retailers, eateries and hotels during the construction and operation phases. The ‘do-nothing’ option would also deprive Yass Valley Council and the local community from benefiting from a significant investment in a state-of-the-art renewable energy project and the associated spill over socio-economic benefits that it entails.

Thus, the ‘do-nothing’ option would result in a loss of opportunity for the NSW government, Yass Valley Council and the local community as this solar project, with its proved technology and demonstrated economic model would most likely be constructed at a different location within Australia.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Australian Government
Department of the Environment and Energy

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Director

9.2.2 First Name

Byron

9.2.3 Last Name

Serjeantson

9.2.4 E-mail

byron@renewestate.com.au

9.2.5 Postal Address

101/39 East Esplanade

101
Manly NSW 2095
Australia

9.2.6 ABN/ACN

ABN

21617855311 - RENEW ESTATE PTY LTD

9.2.7 Organisation Telephone

Australian Government
Department of the Environment and Energy

02 84599704

9.2.8 Organisation E-mail

info@renewestate.com

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Small business

9.2.9.1 You must provide the Date/Income Year that you became a small business entity:

Thu, 03/09/2017

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:…… ……. Date: ……13/03/18……

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, ___Byron Serjeantson_____, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:…… …….. Date: ……13/03/18……

I, __Byron Serjeantson_____, the person proposing the action, consent to the designation of _Renew Estate Pty Ltd_____ as the proponent of the purposes of

the action describe in this EPBC Act Referral.

Signature:……  …… Date: ……13/03/18……

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Director

9.5.2 First Name

Byron

9.5.3 Last Name

Serjeantson

9.5.4 E-mail

byron@renewestate.com.au

9.5.5 Postal Address

101/39 East Esplanade

101
Manly NSW 2095
Australia

9.5.6 ABN/ACN

ABN

21617855311 - RENEW ESTATE PTY LTD

9.5.7 Organisation Telephone

02 84599704

9.5.8 Organisation E-mail

info@renewestate.com

Proposed designated proponent - Declaration

I, Byron Serjeantson, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:……  …… Date: 13/03/18

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Senior Ecologist

9.8.2 First Name

Simon

9.8.3 Last Name

Tweed

9.8.4 E-mail

stweed@niche-eh.com

9.8.5 Postal Address

PO Box 2443
North Parramatta NSW 1750
Australia

9.8.6 ABN/ACN

ABN

19137111721 - Niche Environment and Heritage Pty Ltd

9.8.7 Organisation Telephone

02 9630 5658

9.8.8 Organisation E-mail

info@niche-eh.com

Referring Party - Declaration

I, ___Simon Tweed_____, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:…… Date: 13/03/2018

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. attachment_1_-_section_1.2_project_description_images.pdf
2. attachment_2_-_initial_ecological_inspection_report.pdf
3. attachment_3_-_gsm_survey_report.pdf
4. attachment_4_-_epbc_act_protected_matters_search.pdf
5. attachment_5_-_threatened_species_communities_supporting_info.pdf
6. attachment_6_-_epbc_act_assessments_of_significance_for_affected_mnes.pdf
7. attachment_7_-_fauna_species_list.pdf
8. epbcreferralgisfiles.zip
9. figures.pdf
10. renew_estate_environmental_policy_nov_17.pdf
11. section_3.5_response.pdf
12. summary_of_field_surveys_undertaken.pdf