Referral of proposed action

Proposed action title:	Kennedy Energy Park – Renewable Energy Facility

1 Summary of proposed action

1.1 **Short description**

Kennedy Energy Park Pty Ltd (KEP) wishes to construct a renewable energy facility southeast of Hughenden in central Queensland. The facility will consist of 9 wind turbines, up to 200,000 solar PV panels mounted in arrays, 4 MWh of battery energy storage, two high voltage substations, amenities buildings, plus associated permanent and temporary infrastructure across three landholdings and portions of state controlled land.

The development will utilise the existing transmission line that runs along the northern boundary of the site by the side of the Flinders Highway to Cape River substation, approximately 120 km east of the proposed facility. The existing Cape River substation owned by Ergon Energy wll be expanded through construction of a second adjacent substation (Cape River No 1 substation) to enable the project to connect to the Queensland electricity grid. Approximately 0.5 ha of land to be subdivided from an existing allotment of some 918 ha, representing 0.05% of the subject land, will be required for the new substation. The land is currently used for agricultural purposes of cropping and grazing.

Figure 1 shows the location of the project in the context of Queensland. Figure 2 shows the location of proposed project infrastructure at the main site east of Hughenden, and Figure 3 shows the proposed substation site west of the Ergon Energy's Cape River substation.

1.2 **Latitude and longitude**

The geographical coordinates of the site are provided below in Table 1. Coordinates are provided as follows:

- Locations of the nine turbines at the main site.
- The proposed substations at both the main site and the Cape River site.
- Bounding points for the solar PV area at the main site.
- Key points along the transmission line construction at the main site (including turning points and start/end points)
- Key points along new access track construction at the main site (including turning points and start/end points)

Table 1 Latitude and longitude of proposed development

Area	Long_GDA94	Lat_GDA94
Turbines		
WTG 1	144° 21' 15.12" E	20° 54' 33.84" S
WTG 2	144° 21' 21.96" E	20° 54' 46.44" S
WTG 3	144° 21' 32.40" E	20° 54' 58.32" S
WTG 4	144° 21' 39.96" E	20° 55' 11.64" S
WTG 5	144° 21' 55.08" E	20° 54' 25.92" S
WTG 6	144° 22' 2.64" E	20° 54' 47.88" S
WTG 7	144° 22' 13.80" E	20° 56' 0.96" S
WTG 8	144° 22' 15.96" E	20° 56' 16.80" S
WTG 9	144° 22' 21.72" E	20° 56' 33.36" S
Solar inclusion (including substation)		
Solar PV area boundary	144° 24' 37.64" E	20° 52' 18.22" S
Solar PV area boundary	144° 25' 50.53" E	20° 52' 25.01" S
Solar PV area boundary	144° 25' 50.00" E	20° 52' 30.53" S
Solar PV area boundary	144° 25' 49.65" E	20° 52' 37.74" S
Solar PV area boundary	144° 25' 48.51" E	20° 52' 38.51" S
Solar PV area boundary	144° 25' 48.48" E	20° 52' 38.54" S
Solar PV area boundary	144° 25' 47.55" E	20° 52' 39.26" S
Solar PV area boundary	144° 25' 47.51" E	20° 52' 39.32" S
Solar PV area boundary	144° 25' 48.10" E	20° 52' 41.02" S
Solar PV area boundary	144° 25' 48.23" E	20° 52' 41.11" S
Solar PV area boundary	144° 25' 48.22" E	20° 52' 43.50" S
Solar PV area boundary	144° 25' 46.34" E	20° 52' 45.40" S
Solar PV area boundary	144° 25' 43.77" E	20° 52' 45.93" S
Solar PV area boundary	144° 25' 39.12" E	20° 52' 45.34" S
Solar PV area boundary	144° 25' 31.68" E	20° 52' 44.02" S
Solar PV area boundary	144° 25' 27.41" E	20° 52' 42.45" S
Solar PV area boundary	144° 25' 24.67" E	20° 52' 42.08" S
Solar PV area boundary	144° 25' 22.96" E	20° 52' 42.26" S
Solar PV area boundary	144° 25' 21.13" E	20° 52' 42.39" S
Solar PV area boundary	144° 25' 20.12" E	20° 52' 41.82" S
Solar PV area boundary	144° 25' 18.70" E	20° 52' 41.65" S
Solar PV area boundary	144° 25' 17.00" E	20° 52' 41.03" S
Solar PV area boundary	144° 25' 16.18" E	20° 52' 40.87" S

Solar PV area boundary	144° 25' 15.12" E	20° 52' 40.69" S
Solar PV area boundary	144° 25' 14.01" E	20° 52' 40.94" S
Solar PV area boundary	144° 25' 12.75" E	20° 52' 41.08" S
Solar PV area boundary	144° 25' 11.05" E	20° 52' 41.08" S
Solar PV area boundary	144° 25' 10.24" E	20° 52' 41.23" S
Solar PV area boundary	144° 25' 9.76" E	20° 52' 40.42" S
Solar PV area boundary	144° 25' 8.51" E	20° 52' 39.43" S
Solar PV area boundary	144° 25' 7.02" E	20° 52' 38.87" S
Solar PV area boundary	144° 25' 5.91" E	20° 52' 38.23" S
Solar PV area boundary	144° 25' 3.11" E	20° 52' 38.00" S
Solar PV area boundary	144° 25' 1.05" E	20° 52' 36.39" S
Solar PV area boundary	144° 24' 59.66" E	20° 52' 35.03" S
Solar PV area boundary	144° 24' 59.19" E	20° 52' 34.39" S
Solar PV area boundary	144° 24' 58.45" E	20° 52' 33.70" S
Solar PV area boundary	144° 24' 58.47" E	20° 52' 32.96" S
Solar PV area boundary	144° 24' 58.56" E	20° 52' 32.06" S
Solar PV area boundary	144° 24' 58.32" E	20° 52' 31.19" S
Solar PV area boundary	144° 24' 57.17" E	20° 52' 31.28" S
Solar PV area boundary	144° 24' 56.06" E	20° 52' 30.94" S
Solar PV area boundary	144° 24' 54.99" E	20° 52' 30.62" S
Solar PV area boundary	144° 24' 54.04" E	20° 52' 30.53" S
Solar PV area boundary	144° 24' 52.58" E	20° 52' 31.31" S
Solar PV area boundary	144° 24' 51.96" E	20° 52' 31.00" S
Solar PV area boundary	144° 24' 51.17" E	20° 52' 30.68" S
Solar PV area boundary	144° 24' 50.51" E	20° 52' 30.81" S
Solar PV area boundary	144° 24' 49.78" E	20° 52' 30.95" S
Solar PV area boundary	144° 24' 49.22" E	20° 52' 30.72" S
Solar PV area boundary	144° 24' 48.48" E	20° 52' 30.51" S
Solar PV area boundary	144° 24' 47.73" E	20° 52' 30.83" S
Solar PV area boundary	144° 24' 47.03" E	20° 52' 30.70" S
Solar PV area boundary	144° 24' 46.19" E	20° 52' 30.72" S
Solar PV area boundary	144° 24' 45.52" E	20° 52' 30.08" S
Solar PV area boundary	144° 24' 44.43" E	20° 52' 29.10" S
Solar PV area boundary	144° 24' 43.38" E	20° 52' 27.98" S
Solar PV area boundary	144° 24' 42.07" E	20° 52' 27.31" S
Solar PV area boundary	144° 24' 41.23" E	20° 52' 26.72" S

Solar PV area boundary	144° 24' 40.43" E	20° 52' 26.81" S
Solar PV area boundary	144° 24' 39.64" E	20° 52' 26.44" S
Solar PV area boundary	144° 24' 39.07" E	20° 52' 26.01" S
Solar PV area boundary	144° 24' 37.88" E	20° 52' 25.85" S
Solar PV area boundary	144° 24' 36.67" E	20° 52' 25.78" S
Transmission line		
33kV_OHL_Nth	144° 22' 46.17" E	20° 55' 17.99" S
33kV_OHL_Nth	144° 22' 3.75" E	20° 54' 56.75" S
33kV_OHL_Nth	144° 21' 56.89" E	20° 54' 53.39" S
33kV_OHL_2	144° 22' 45.90" E	20° 55' 17.70" S
33kV_OHL_2	144° 23' 37.88" E	20° 54' 33.51" S
33kV_OHL_2	144° 24' 18.32" E	20° 53' 56.27" S
33kV OHL_1	144° 24' 42.35" E	20° 52' 21.90" S
33kV OHL_1	144° 24' 27.01" E	20° 53' 20.81" S
33kV OHL_1	144° 24' 18.35" E	20° 53' 56.26" S
33kV_OHL_Sth	144° 22' 46.17" E	20° 55' 17.42" S
33kV_OHL_Sth	144° 22' 30.64" E	20° 55' 59.94" S
Tracks		
New access to WTG 1 & 4	144° 21' 55.61" E	20° 54' 27.52" S
New access to WTG 1 & 4	144° 22' 3.57" E	20° 54' 45.54" S
New access to WTG 1 & 4	144° 22' 10.80" E	20° 54' 49.51" S
Road access and rail crossing	144° 24' 37.66" E	20° 52' 14.47" S
Road access and rail crossing	144° 24' 37.34" E	20° 52' 17.37" S
Link road between existing tracks	144° 24' 20.65" E	20° 52' 57.49" S
Link road between existing tracks	144° 24' 22.04" E	20° 52' 52.96" S
Link road between existing tracks	144° 24' 23.91" E	20° 52' 50.29" S
Link road between existing tracks	144° 24' 26.11" E	20° 52' 47.87" S
Link road between existing tracks	144° 24' 30.13" E	20° 52' 45.25" S
Link road between existing tracks	144° 24' 32.33" E	20° 52' 43.27" S
Link road between existing tracks	144° 24' 33.71" E	20° 52' 40.73" S
New road for WTG access	144° 22' 41.68" E	20° 55' 9.17" S
New road for WTG access	144° 22' 48.34" E	20° 55' 15.44" S
New road for WTG access	144° 23' 46.87" E	20° 55' 12.12" S
Cape River substation		
Proposed new Cape River No.1 sub station	145° 27' 49.96" E	20° 28' 31.79" S

Proposed new Cape River No.1 sub station	145° 27' 52.92" E	20° 28' 31.81" S
Proposed new Cape River No.1 sub station	145° 27' 53.23" E	20° 28' 34.31" S
Proposed new Cape River No.1 sub station	145° 27' 50.55" E	20° 28' 34.28" S

1.3 Locality and property description

The main development is located in Flinders Shire, Queensland, on grazing land approximately 20 km southeast of Hughenden and 310 km southwest of Townsville. The proposal area spans the boundary of two bioregions, Mitchell Grass Downs to the west and Desert Uplands to the east, with the Einasleigh Uplands only a short distance to the north.

The infrastructure described above is located on Monavale and Iona Stations, located south of the Flinders Highway. The solar array and substation are located on relatively flat plains to the south of the road, in an area that is subject to grazing. The turbines are located on a jump-up plateau to the south.

The Flinders River is 2 to 4 km to the north of the Flinders Highway and the proposed development area. Jardine Creek, a tributary of Flinders River, drains the proposed solar PV area. The jump up also drains via unnamed drainage lines and creeks north and west into the Flinders River. The Lake Eyre basin is to the south of the southern most part of the proposal area.

The Cape River No 1 substation is located approximately 120 km northeast of the main site, and 190 km southwest of Townsville. It is located in the Desert Uplands bioregion. The site is adjacent to an old abattoir, and has an existing Ergon Energy substation, bore and water treatment plant and large dam located next to the site.

A digital shape file of the proposed development is provided with this application using coordinate system GDA 1994 MGA Zone 55.

1.4	**Size of the development footprint or work area (hectares)**	The disturbed area for the development of the main site covers less than 100 ha or 0.6% of the subject land, with the remainder of the land to be retained for agricultural use (cattle grazing). Components of the above are as follows: • Nine pads of consolidated hard standing will be constructed at each turbine location of up to 80 m x 60 m to provide a stable foundation for cranes to erect and install all components of the wind turbines. • Construction of the solar PV area covering approximately 70 ha. • Construction of 16 km of internal access tracks of widths of 6 m, with appropriate widening at corners and junctions. These access tracks will follow existing cleared farm tracks for the majority of their length (~70%). • Approximately 4 km of perimeter access road around the solar PV area of width up to 6 m. • Two permanent guyed meteorological masts up to 120 m high for wind resource data validation. One mast is already installed. A cleared area of approximately 6 m radius around the central foundation and in the immediate vicinity of the 6 guy wire anchor points (three inner and three outer) is required for erection of the mast. Siting is selected to avoid or minimise clearance of vegetation. • Approximately 5.2 km of 33 kV overhead lines from boundary of Lot 1 on DG34 (wind farm area) across Lot 3 on DG177 to the electrical substation near the Flinders Highway at the north of the site. In Lot 1 on DG34 overhead lines of approximately 5 km will run from the boundary of Lot 3 on DG177 to the area of the turbines. In the area of the turbines approximately 4 km of underground cables will connect the turbines to the overhead lines. A disturbed corridor of 5 m for underground cabling is required to allow access of plant and equipment during installation, and will run in the vicinity of the track corridors to minimise disturbance. • Construction of a new intersection with the state controlled Flinders Highway and construction of approximately 170 m of 7 m width road within the road reserve and across the Great Northern railway. • A 33/66/132 kV substation, with control building, oily water separation and oil catchment, hardstanding and appropriate security fencing located in an area of up to 0.7 ha on the northern boundary of the site, adjacent to the solar PV area. Two temporary construction compounds, being approximately 1.8 ha and 1.0 ha respectively will be constructed at the main site. The larger compound will be located adjacent to the solar PV area near to the access road and the smaller compound located in the wind farm area, on the jump up. The exact location of the compounds will be determined by the construction contractor. These compounds will host site offices and amenities, tool and materials storage sheds, construction staff car parking, component laydown areas and truck parking. A temporary concrete batching plant may be located in one of the construction compounds. The disturbed area for the development of the Cape River No 1 substation site covers less than 0.5 ha, with the remainder of the land to be retained for agricultural use (cropping and cattle grazing).

1.5	**Street address of the site**	1. Solar PV and substation: Monavale Station, Flinders Hwy, Prairie. Qld 2. Wind Farm: Iona Station, Redcliffe Rd, Hughenden. Qld 3. New Cape River No 1 substation adjacent to existing Ergon Cape River substation:Unnamed property, Cape River (Pentland), Qld (old Cape River meatworks site). 4. Great Northern Railway, address is not applicable

1.6 **Lot description**

A list of lots affected by the project, their tenure and the infrastructure to be constructed on those lots is provided below.

- Lot 3 on DG177 (freehold) – solar PV farm, access tracks, power line and substation
- Lot 1 on DG34 (freehold) – wind turbines, access tracks and power line
- Lot 2 on RP902027 (freehold) – Cape River No 1 substation
- Lot 311 on SP108259 (Great Northern Railway) (lands lease) – solar PV farm access road

1.7 **Local Government Area and Council contact (if known)**

The main site is located in Flinders Shire in central Queensland. The Cape River No 1 substation site is located in Charters Towers Region. Contact details for each area are as below:

- Lot 3 on DG177 and Lot 1 on DG34: Flinders Shire Council. Contact: Graham King CEO
- Lot 2 on RP902027: Charters Towers Regional Council. Contact: Hamish McIntosh, Planning Manager

1.8 **Time frame**

The forecast date for commencement of construction on site is July 2017, with a nine months site construction period estimated.

1.9	**Alternatives to proposed action**	X	No. The location was chosen through detailed analysis of the optimum wind resource, environmental and planning constraints, and landholder requirements.
			Yes
1.10	**Alternative time frames, locations or activities**	X	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3 and 5 (where relevant).
1.11	**Commonwealth, State or Territory assessment**	X	No
			Yes, please also complete section 2.5
1.12	**Component of larger action**	X	No
			Yes, please also complete section 2.7
1.13	**Related actions/proposals**	X	No
			Yes, provide details:
1.14	**Australian Government funding**		No
		X	Yes, please also complete section 2.8
1.15	**Great Barrier Reef Marine Park**	X	No
			Yes, please also complete section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

The proposed Kennedy Energy Park comprises 9 wind turbines, up to 200,000 solar PV panels mounted in arrays, 4 MWh of battery energy storage, two high voltage substations, amenities buildings, plus associated permanent and temporary infrastructure across three landholdings and sections of state controlled land. It is considered a small to medium scale renewable energy development.

The main site proposed for the project (Figure 2) involves two freehold allotments (Lot 1 on DG34 and Lot 3 on DG177) of a combined area of some 17,100 ha, of which part of the total land will be leased from the respective landowners. The disturbed area for the development covers less than 100 ha or 0.6% of the subject land, with the remainder of the land to be retained for agricultural use (cattle grazing). A second remote site (Figure 3) at Cape River (Lot 2 on RP902027), adjacent to an existing substation owned by Ergon Energy is required to connect to the Queensland electricity grid. It is located approximately 120 km east of the main site. Approximately 0.5 ha of land to be subdivided from an existing allotment of some 918 ha, representing 0.05% of the subject land, with the remainder to be retained for agricultural purposes of cropping and grazing.

Access to the main site will require construction of a new intersection with the state controlled Flinders Highway and construction of approximately 170 m of 7 m width road within the road reserve and across the Great Northern Railway.

The majority of infrastructure will be largely situated on freehold land, although a small section of the main access road will be situated within public land. The layout is detailed in Attachment A and GIS data provided in Attachment B.

The following permanent infrastructure is proposed:

- Lot 1 on DG 34
    - 9 wind turbines of 3.3 MW to 3.6 MW rated capacity each with hub heights up to 137 m and tip heights up to 202 m above ground level. The turbine support towers will be constructed from tubular steel and/or concrete and will support a nacelle, nose cone and blade assembly
    - Steel reinforced concrete foundations for each tower of up to 8 m diameter at the surface, approximately 4 m deep and up to 25 m diameter at the base. The foundation excavations will be mainly into rock. The top soil would be stripped and spread and the excavated rock used in the formation of the roads and compounds.
    - Pads of consolidated hard standing will be constructed at each turbine location of up to 80 m x 60 m to provide a stable foundation for cranes to erect and install all components of the wind turbines.
    - In Lot 1 on DG34 overhead lines of approximately 5 km will run from the boundary of Lot 3 on DG177 to the area of the turbines. In the area of the turbines approximately 4 km of underground cables will connect the turbines to the overhead lines. A disturbed corridor of 5 m for underground cabling is required to allow access of plant and equipment during installation, and will run in the vicinity of the track corridors to minimise disturbance.
    - Two permanent meteorological masts up to 120 m high for wind resource and data validation purposes during operation of the wind farm (one 107.5 m mast is already installed).
    - 10.5 km of internal access roads of widths of 6 m, with appropriate widening at corners and junctions. These access tracks will follow existing farm tracks for the majority of their length (~70%).
- Lot 3 on DG177
    - 24 MWdc rated capacity of solar PV, with individual panels mounted in “strings” on a single axis tracker, which comprises a shaft of up to 90 m in length, which is motorised and rotates to allow the panels to track east to west during the day. The tracker shaft is mounted approximately 2 m above ground on piers located every 6 to 10 m (depending on tracker design). Solar arrays will be arranged in blocks, with each block supplying approximately 2.5 MWac via a single inverter
    - Approximately 5.2 km of 33 kV overhead lines from boundary of Lot 1 on DG34 (wind farm area) to an electrical substation
    - A 33/66/132kV substation, with control building, oily water separation and oil catchment, hardstanding and appropriate security fencing located on up to 0.7 ha on the northern boundary of the site, adjacent to the solar PV area. This substation will enable connection of the generation into the existing transmission line that runs in the Flinders Highway road reserve in close proximity to the project site (approximately 112 m from the boundary).
    - Site compound with amenities building, battery energy storage, parking and small workshop
    - Approximately 5.5 km of internal road for access to the wind farm area, with widths of 6 m, with appropriate widening at corners and junctions.

- Approximately 4 km of perimeter access road around the solar PV area.

- State controlled land
  - A new intersection will be constructed for access to the site from the Flinders Highway. This will involve widening of the Flinders Highway to accommodate pull-off area for turning into the site and appropriate radius curves to allow for movement of the over dimensional roads onto the site during construction.
  - Approximately 140 m of access road across the road reserve
  - A new permanent occupational crossing of the Great Northern Railway
- Lot 2 on RP902027
  - A 132/66 kV substation with control building, oily water separation and oil catchment, hardstanding and appropriate security fencing located on up to 0.5 ha for augmentation works required to the existing Ergon Energy Cape River substation located approximately 250 m away on Lot 1 on RP741817.

The following temporary infrastructure is also proposed for the main site:

- Two construction compounds, being approximately 1.8 ha and 1.0 ha respectively. These compounds will host site offices and amenities, tool and materials storage sheds, construction staff car parking, component laydown areas and truck parking.
- A temporary concrete batching plant may also be located in one of the site compounds. Other material such as road base and water for construction will be principally sourced from local commercial suppliers.

The majority of clearance (approximately 70 ha) at the main site is associated with the construction of the solar PV area. This area was groundtruthed as an area of Mitchell grassland (RE 4.9.1 – 'least concern') with extensive infestation of *Vachellia nilotica* (mimosa bush) and *Vachellia farnesiana* (prickly acacia). Only occasional scattered woody natives are in this area. Species richness and diversity in this area was low and patches were heavily overgrazed, with buffel grass also prevalent in patches. The access tracks and transmission line on the plains in the north of the proposal area associated with the solar PV area are also in this community.

On the jump-up plateau, the turbines and access tracks will be predominantly located in a community characterised by sparse White's ironbark *(Eucalyptus whitei*) and Dallachy's gum (*Corymbia dallachiana*) open woodland (RE 10.7.1a – 'least concern'), with patches of dense *Acacia acradenia* thickets. Exotic species were evident in numerous places along the farm tracks. The majority of access tracks in this location will make use of existing farm tracks.

2.2 Feasible alternatives to taking the proposed action

There are no alternatives to the proposed action. The location of the Kennedy Energy Park was determined through a combination of engineering constraints, analysis of the wind resource, landowner negotiations and environmental considerations.

2.3 Alternative locations, time frames or activities that form part of the referred action

There are no alternative locations, time frames or activities that form part of the referred action. An ecological constraints survey (Attachment C) conducted by Biosis, groundtruthed remnant vegetation at the main site. Areas of remnant 'of concern' vegetation listed under Queensland *Vegetation Management Act 1999* have been largely avoided through refinement of the alignment of project access roads and transmission lines.

2.4 Context, including any relevant planning framework and state/local government requirements

Development approval for the project was received in July 2016 in accordance with the requirements of the *Sustainable Planning Act 2009* (Qld) and is for a combined material change of use and reconfiguration of a lot to facilitate a new "General Industry" use within the Rural Zone. The proposal involves new building work, some site and road works and the construction of unconventional infrastructure in the form of solar panel arrays and wind turbines, as well as linking electric and road infrastructure.

The development is compatible with existing and adjoining land uses and is reflective of the environmental and infrastructure constraints of the site. The building, car parking, site access, stormwater management and services are all either existing or will be provided in accordance with industry/regulatory standards. The proposed use satisfies the requirements set by the applicable assessment criteria, specifically the Rural Zone Code of the Flinders Shire Council Planning Scheme and the applicable modules from the State Development Assessment Provisions (SDAP's).

The development was code assessable under the Flinders Shire Council Planning Scheme and as such was assessed against the relevant applicable codes.

Two State Development Assessment Provisions also applied, requiring approval from the respective concurrence agencies for:

SDAP MODULE 8. NATIVE VEGETATION CLEARING

A full and comprehensive assessment against Module 8 was conducted as part of the Vegetation Management Plan which was assessed by the department of Natural Resources and Mines for compliance with the SDAP Module 8. The site layout was

selected to minimise impacts on "of concern" vegetation as far as practicable, demonstrating avoidance where possible. Clearing is to be limited to essential infrastructure and access.

SDAP MODULE 18. STATE TRANSPORT INFRASTRUCTURE PROTECTION AND MODULE 19. STATE TRANSPORT INFRASTRUCTURE PROTECTION

The proposal involves works for construction of an intersection with the Flinders Highway and a short length of access road across the Flinders Highway road reserve and a new occupational crossing of the Great Northern Railway. A Road Traffic Assessment, storm water impact assessment and justification for a new rail crossing was prepared and assessed for compliance with the SDAP modules 18 and 19 by the Department of Transport and Main Roads after consultation with Queensland Rail.

In regard to social context and employment opportunities, the construction of the project will require a workforce of up to 60 workers, at any one time, with a number of these people drawn from the local region where the appropriate skills exist. The balance of the workforce would be brought in from other locations and would be accommodated in the local township of Hughenden in existing commercial lodgings. During operations it is forecast that three technicians would be employed in full time operational roles, with local contractors providing non-routine and semi-skilled services to the operating company.

2.5 Environmental impact assessments under Commonwealth, State or Territory legislation

This referral document has been prepared and submitted to the Department of the Environment (DoE) to allow a determination as to whether the project requires further assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The EPBC Act requires consideration of whether the development may significantly impact upon a matter of national environmental significance (MNES) (i.e., nationally threatened species or ecological communities, migratory species protected under international agreements, Ramsar wetlands of international importance, Commonwealth waters, World Heritage properties, National Heritage places, nuclear actions and a water resource associated with coal seam gas or a large coal mining development).

An impact assessment prepared by Biosis and Coffey (2016) (Attachment C) has ascertained that there will be no significant direct or indirect impacts on MNES, as a result of the construction and operation of the proposal.

As such, the action is likely to be determined to be adequately assessed under the self-assessment process, and a referral under the EPBC Act not required, as construction of the proposed energy park (the action) is not expected to significantly impact any MNES and would not be deemed a 'controlled action'. However, the proponent has decided to refer the proposed action to the Australian Government Minister for the Environment and Energy to seek the Minister's confirmation that the action is 'not a controlled action'.

The relevant controlling provisions are:

- Listed threatened species and communities (sections 18 and 18A).
- Listed migratory species (sections 20 and 20A).

2.6 Public consultation (including with Indigenous stakeholders)

The proponent has undertaken a public consultation program for the proposed Kennedy Energy Park development through implementation of its Community Engagement Strategy for the development. The community engagement activities undertaken since 2013, include:

- Implementation of Windlab's award winning community engagement program (Clean Energy Council Business Community Engagement Award Winner 2015)
- Face-to-face meetings with all project neighbours within 10 km radius
- Public open day in August 2015
- Dedicated project website in operation since May 2015, with contact page where parties can register their interest in the project, or ask questions, with the inbox monitored daily by the Project Director

Furthermore, an Aboriginal cultural heritage assessment is in progress and due for completion in late 2016, which includes consultation with the local indigenous stakeholders.

2.7 A staged development or component of a larger action

The development is not part of a larger development or staged development.

2.8 Related actions

There are no relevant related actions as part of this proposal.

The project has a funding agreement in place with the Australian Renewabke Energy Agency (ARENA) for an $18m recoupable grant as part of its "Advancing Renewables Programme".

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

The description of the existing environment and likely impacts has been based upon the following information:

- Ecological assessment undertaken by Biosis and Coffey (2016) which comprises database searches, a habitat suitability assessment, field surveys to validate habitat suitability and vegetation mapping and an impact assessment which includes an assessment of potential impacts on matters of national environmental significance (Attachments C and D).

3.1 (a) World Heritage Properties

Description

There are no World Heritage listed properties in or near the project area.

The nearest World Heritage property is the Wet Tropics World Heritage Area located between Townsville and Cooktown, approximately 310 km northeast of the main site, and 190 km from the Cape River No 1 substation site.

Nature and extent of likely impact

As the project does not involve any interaction with World Heritage listed properties, there is no potential for a significant impact on World Heritage listed properties as a result of project activities.

3.1 (b) National Heritage Places

Description

There are no National Heritage places in or near the project area.

The nearest National Heritage Place is the Dinosaur Stampede National Monument, located at Lark Quarry Conservation Park in central Queensland, approximately 300 km to the southwest of the proposal area main site.

Nature and extent of likely impact

As the project does not involve any interaction with National Heritage Places, there is no potential for a significant impact on National Heritage Places as a result of project activities.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

There are no wetlands of international significance in or near the project area.

Coongie Lakes Ramsar site is approximately 800 km to the southwest.

Coongie Lakes Ramsar site lies within the Lake Eyre and Bulloo basin. This basin reaches its northern extent just south of the proposal area. There is no hydrological connection to this basin from the project area.

Nature and extent of likely impact

As there is no hydrological connection to any wetlands there will be no significant impacts to the ecological character of any wetlands of international significance as a result of project activities.

3.1 (d) Listed threatened species and ecological communities

Description

Listed threatened species and ecological communities potentially present in the proposal area are discussed in sections 3.1 and 4.1 of Attachment C for the main site, and "Vegetation Communities" and "Threatened Species" in Attachment D for the Cape River No 1 substation site.

Kennedy Energy Park main site

No threatened ecological communities under the EPBC Act were identified in the protected matters search, Queensland regional ecosystem mapping or other database searches as potentially occurring in the proposal area.

Ground surveys to validate vegetation communities confirmed this assessment, and as such threatened ecological communities are not relevant to this referral and not discussed further.

Fifteen threatened fauna species and two threatened flora species under the EPBC Act were identified in the protected matters search or other database searches as potentially occurring in the proposal area.

Biosis and Coffey undertook an analysis of these species based on the field surveys and further analysis of species range and requirements, and following vegetation validation and habitat characteristics of the proposal area, no listed flora species were identified in or assessed as likely to occur in the proposal area. Four fauna species were assessed as having a moderate likelihood of presence in the area. Moderate likelihood of presence used a precautionary basis for assessment and was defined as:

"The species was not recorded within the survey area during field surveys, although it is known to occur in the wider region. Habitat was identified for the species in the survey area during the field surveys, however, it is marginal, fragmented and/or small in size, or degraded."

The four EPBC Act listed fauna species assessed as potentially being present are:

- Koala (*Phascolarctos cinereus*) – Vulnerable (EPBC Act)
- Plains death adder (*Acanthophis hawkei*) – Vulnerable (EPBC Act)
- Yakka skink (*Egernia rugosa*) - Vulnerable (EPBC Act)
- Squatter pigeon (*Geophaps scripta scripta*) – Vulnerable (EPBC Act).

Squatter pigeon may be present throughout the proposal area, although the lack of water in the proposal area provides a constraint. The highly ephemeral Flinders River is located 2 to 4 km to the north, but flows are limited to a few weeks of the year. A few small dams are present on the property for cattle but these too are subject to drying.

Plains death adder has not been recorded within 100 km of the proposal area in database records. The species favours flat cracking soil floodplains which are similar to habitat in the north of the proposal area.

Koala has not been recorded within 20 km of the proposal area in database records, although it has been recorded on Iona Station to the south. Food trees in the proposal area are absent from the plains in which the solar array is located and restricted to the plateau although they are sparse in this area and habitat is marginal.

Yakka skink has not been recorded within 100 km of the proposal area in database records. The species requires fallen timber and dense ground vegetation and the site was considered to be lacking in such microhabitat. However, rocky jump up sites could potentially provide suitable habitat for the species.

Remaining flora and fauna species were considered to have a low likelihood of occurrence, based on species range and/or lack of suitable habitat. The reasons for discounting these species from the assessment are given in Table 2 of Attachment C.

Cape River No 1 substation site

No threatened ecological communities under the EPBC Act were identified in the protected matters search, Queensland regional ecosystem mapping or other database searches as potentially occurring in the proposal area.

Ground surveys to validate vegetation communities confirmed this assessment, and as such threatened ecological communities are not relevant to this referral and not discussed further.

Thirteen threatened fauna species and one threatened flora species under the EPBC Act were identified in the protected matters search or other database searches as potentially occurring in the proposal area.

Biosis and Coffey undertook an analysis of these species based on the field surveys and further analysis of species range and requirements, and following vegetation validation and habitat characteristics of the proposal area, no listed flora species were identified in or assessed as likely to occur in the proposal area. Three fauna species were assessed as having a moderate likelihood of presence in the area. Moderate likelihood of presence used a precautionary basis for assessment and was defined as:

"The species was not recorded within the survey area during field surveys, although it is known to occur in the wider region. Habitat was identified for the species in the survey area during the field surveys, however, it is marginal, fragmented and/or small in size, or degraded."

The three EPBC Act listed fauna species assessed as potentially being present are:

- Koala (*Phascolarctos cinereus*) – Vulnerable (EPBC Act)
- Black-throated finch (*Poephila cincta cincta*) - Endangered (EPBC Act)
- Squatter pigeon (*Geophaps scripta scripta*) – Vulnerable (EPBC Act).

There are few database records for koala in the vicinity of the Cape River site. Some food trees are present at the site, although the species and signs of the species were not observed.

Squatter pigeon may be present throughout the proposal area, although the lack of water in the proposal area provides a constraint. The highly ephemeral Cape River is located adjacent to the site, but flows are limited to high rainfall events in the wet season.

Black-throated finch are found in the Townsville and Charters Towers area, and favour grassy woodlands with access to water. The species may occur in the area during the wet season when the Cape River is flowing, but is unlikely to be present for extended periods or breeding.

Remaining flora and fauna species were considered to have a low likelihood of occurrence, based on species range and/or lack of suitable habitat. The reasons for discounting these species from the assessment are given in Table 7.2 of Attachment D.

Nature and extent of likely impact

The constraints reporting for both sites, concluded that no threatened ecological communities under the EPBC Act were present at either the main site or the Cape River No 1 substation site, and no threatened flora species under the EPBC Act were recorded or likely to be present at either site.

In terms of fauna species, the assessments concluded that four threatened fauna species had a moderate or greater possibility of presence at the main site and three threatened fauna species had a moderate or greater possibility of presence at the Cape River No 1 substation site.

A discussion of potential for impacts to EPBC Act listed fauna species is contained in Section 4.1 of Attachment C for the main site, and "Vegetation Communities", "Threatened Species", "Ecological Constraints and Opportunities" and appendices 2 and 5 in Attachment D for the Cape River No 1 substation site.

The analysis for the Cape River No 1 substation site concluded a significant impact assessment was not required for this site, as the nature of the impact was negligible (approximately 0.5 ha of moderately fragmented habitat dominated by buffel grass to be cleared).

The significance of impact in relation to the availability of suitable habitat for the Black-throated Finch and dispersal, foraging and breeding habitat for the Squatter Pigeon in the proposal area and broader locality would not be considered to result in a significant residual impact in accordance with Significant Impact Guidelines 1.1: Matters of National Environmental Significance. DoE consider projects involving clearing of less than 2 ha of Koala habitat with a habitat assessment score of 5 (refer Table 1 of Attachment D) as being unlikely to have a significant impact on the Koala.

As a guide, the character and quality of habitat for black-throated finch may be diminished if an action results in (Commonwealth of Australia, 2009):

- Net loss or degradation of water sources (either permanent or seasonal) in the locality
- Widespread or indiscriminate loss of trees, including known nest trees within one kilometre of a water source
- A decrease in tree recruitment capacity which limits the area's ability to be self-sustaining
- The degradation of foraging habitat (grassland) where known black throated finch (southern) records exist, including the intensification of biomass reduction or stocking rates.

The proposal will not result in the degradation or loss of water sources, as the Cape River is approximately 200 m to the northeast. In addition, vegetation clearance will be minimal, with a small area (approximately 0.5 ha) cleared at the margins of an already fragmented area of woodland, surrounded by the Flinders Highway, an old abattoir, an existing Ergon Energy substation, bore and water treatment plant and large dam. The project will not impact on surrounding areas of woodland or grassland, or the riparian corridor of the Cape River.

An assessment of significance of impacts to EPBC Act listed fauna species, following the EPBC Act Significant Impact Guidelines (Commonwealth of Australia, 2013) is presented in Appendix J of Attachment C for the main site.

The assessment concludes that:

- The proposal area is unlikely to provide refuge for koalas and the habitat lost is largely not suitable for the species (the project avoids riparian vegetation on site). There are large areas of suitable habitat available in the region, and the

proposal will not compromise the area of occupancy of the species or impact on connectivity to habitat. Therefore a significant impact on the species is unlikely.

- The proposal will clear a relatively small area of potential squatter pigeon habitat in relation to available habitat in the region. The quality of the habitat on site is limited by the lack of water. Therefore a significant impact on the species is unlikely.
- The habitat in the proposal area is not likely to be significant for plains death adder, and there are no records in the area. A relatively small area of marginal habitat will be lost, and connectivity to other habitat maintained. Therefore a significant impact on the species is unlikely.
- The habitat in the project footprint area is not likely to be significant for yakka skink, and large areas of the rocky jump up in which the species may occur are avoided by the project. Project access tracks up the jump up to the plateau utilise existing cleared tracks. There are no records in the area. Therefore a significant impact on the species is unlikely.

Therefore, threatened species are unlikely to be a constraint to the project, and no significant impacts on threatened species are predicted. KEP has sought to avoid areas of remnant vegetation, including areas mapped as 'of concern' and management measures discussed in Section 5 will result in a risk to habitat integrity that is negligible.

3.1 (e) Listed migratory species

Description

Listed migratory species potentially present in the proposal area are discussed in Section 3.1.2 of Attachment C for the main site, and "Migratory Fauna" in Attachment D for the Cape River No 1 substation site.

Kennedy Energy Park main site

Eight birds listed as migratory under the EPBC Act were returned from database searches for the main site as follows:

- Curlew Sandpiper (*Calidris ferruginea*)
- Fork-tailed Swift (*Apus pacificus*)
- Grey Wagtail (*Motacilla cinerea*)
- Yellow Wagtail (*Motacilla flava*)
- Latham's Snipe (*Gallinago hardwickii*)
- Great Egret (*Ardea alba*)
- Cattle Egret (*Ardea ibis*)
- Oriental Cuckoo (*Cuculus optatus*)

There is a moderate to high likelihood that a number of these species use habitat (e.g. constructed dams) within the proposal area during broader movements throughout the region. Great egret and cattle egret have some potential to occur close to dams in the lower parts of the site, while the fork-tailed swift may overfly the site.

The remaining species are considered unlikely to occur in the proposal area due to a lack of suitable habitat or that the species are rare vagrants in the region. It is unlikely that the proposal area would support an ecologically significant proportion of any migratory bird population.

Cape River No 1 substation site

Fifteen birds listed as migratory under the EPBC Act were returned from database searches for the Cape River site as follows:

- Curlew Sandpiper (*Calidris ferruginea*)
- Fork-tailed Swift (*Apus pacificus*)
- Grey Wagtail (*Motacilla cinerea*)
- Yellow Wagtail (*Motacilla flava*)
- Latham's Snipe (*Gallinago hardwickii*)
- Great Egret (*Ardea alba*)
- Cattle Egret (*Ardea ibis*)
- Oriental Cuckoo (*Cuculus optatus*)

- Common Greenshank (*Tringa nebularia*)
- Glossy Ibis (*Plegadis falcinellus*)
- Gull-billed Tern (*Gelochelidon nilotica*)
- Latham's Snipe (*Gallinago hardwickii*)
- Marsh Sandpiper (*Tringa stagnatilis*)
- Osprey (*Pandion haliaetus*)
- Rainbow Bee-eater (*Merops ornatus*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)

There is a moderate to high likelihood that a number of these species use habitat (e.g. remnant vegetation along the Cape River) within the proposal area during broader movements throughout the region. One of these, the rainbow bee-eater, was recorded on the site during the field survey, and would likely be recorded flying over the site foraging for insects predominantly. No suitable sandy nesting sites are present at the site.

The fork-tailed swift and white-throated needletail may overfly the site during the summer months, but will not utilise terrestrial areas of the site.

The remaining species are considered unlikely to occur in the proposal area due to a lack of suitable habitat (most are wetland species and there are no wetlands at the site) or that the species are vagrants in the region. It is unlikely, given the lack of wetland habitat in the proposal area, that the proposal area would support an ecologically significant portion of any migratory bird population.

Nature and extent of likely impact

The proposal area is unlikely to represent important habitat, nor support an ecologically significant proportion of a population, for any terrestrial migratory species. Of the species listed above, rainbow bee-eater and fork-tailed swift may overfly both sites (the former species was noted).

Wetland migratory species are likely to be restricted to farm dams and wetlands, which are avoided by the proposed development. The ephemeral nature of water on both sites limits the potential for the species discussed above to be present. There are no mapped wetlands of importance within the project area, and the project should therefore not affect any habitat for wetland migratory species.

No direct impacts on migratory species will occur from project activities. KEP has sought to avoid areas of regulated vegetation in the site layout, and areas to be cleared are marginal habitat for migratory species. Wetland habitats will also be avoided.

All migratory bird species are likely to avoid construction activities, and there is only a low probability of project construction activities directly disturbing individuals. Many species will only visit the project area on a transitory basis, and may be only summer visitors. The project area is unlikely to represent important habitat, nor support an ecologically significant proportion, for any terrestrial migratory species.

It was determined through validation of habitats that the proposal area is unlikely to support an ecologically significant migratory bird population. Therefore, migratory birds are unlikely to be a constraint to the project, and no significant impacts on migratory species are predicted.

3.1 (f) Commonwealth marine area

Description

There are no Commonwealth marine areas in or near the project area. The nearest area is approximately 310 km to the northeast. The project does not involve any interaction with the marine environment.

Nature and extent of likely impact

As the project does not involve any interaction with the marine environment, there is no potential for a significant impact on a Commonwealth marine area as a result of project activities.

3.1 (g) Commonwealth land

Description

There is no Commonwealth land in the vicinity of the project area.

Nature and extent of likely impact

As the project does not involve any interaction with Commonwealth land, there is no potential for a significant impact on Commonwealth land as a result of project activities.

3.1 (h) The Great Barrier Reef Marine Park

Description

The Great Barrier Reef Marine Park is located approximately 160 km from the project area. There will be no direct or indirect interaction between project activities and the Great Barrier Reef Marine Park.

Nature and extent of likely impact

As the project does not involve any interaction with the Great Barrier Reef Marine Park, there is no potential for a significant impact on the Great Barrier Reef Marine Park as a result of project activities.

3.1 (i) A water resource, in relation to coal seam gas development or large coal mining development

Description

The project is not a coal seam gas development or large coal mining development, and no water resources will be impacted.

Nature and extent of likely impact

As the project does not involve any interaction with a water resource, in relation to coal seam gas development and large coal mining development, there is no potential for a significant impact on is matter as a result of this project.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Description of the project area and affected area for the proposed action

3.3 (a) Flora and fauna

Flora and fauna pertaining to EPBC Act protected matters are discussed in Section 3.1 and Attachments C and D.

Threatened species under Queensland legislation are discussed in Section 3.2 of Attachment C and "Threatened Species" of Attachment D. These attachments concluded

An assessment of bird and bat species at risk of turbine collision was prepared (Section 4.6 of Attachment C), and concluded that modelling of collision risk was not warranted. None of the species were listed under the EPBC Act.

3.3 (b) Hydrology, including water flows

Kennedy Energy Park main site

The wind farm area is on a lateritic jump up (Desert Uplands bioregion), with the wind turbines to be located towards the western rim of the plateau. Small areas are subject to inundation during the wet season, but there is no standing water on the plateau, except for farm dams to the east and south of the wind farm area. Groundwater was not encountered during the geological survey, which included bore holes to 15 m below ground level at each wind turbine location.

The solar arrays, main access road, substation and other site infrastructure is located on mildly undulating grass plains (Mitchell Grass Downs bioregion), which is cut by a number of ephemeral drainage lines from the foothills of the jump up and nearby hills. The drainage lines are part of Jardine Creek catchment. Jardine Creek, a tributary of Flinders River is located north and east of the proposal area. The Flinders River is located over 2 km to the north of the closest point of the proposal area.

Groundwater was not encountered during the geological survey for the solar array, access roads or power line, which included bore holes of 6 m drilled at various locations where infrastructure is to be located. There is no standing water or areas subject to inundation in the area to be developed in the Mitchell Grass Downs bioregion.

The development as proposed will be constructed to the existing topography, with very limited amount of earth works and negligible interference to drainage lines and overland flows. Where there are earthworks, drainage will be designed and maintained to prevent surface run-off ponding by grading the ground surface and providing swales or surface V-drains to direct surface water to existing drainage lines.

In the absence of change to overland flow paths, any increase in peak storm water discharge will be directly proportional to the change in coefficient of runoff for the relevant catchment. On this basis, the impact of the development on stormwater flows is estimated to be no more than an increase in peak discharge of 1.3%, using the very conservative assumption that the developed portion is 90% impervious (i.e. the ground around the solar arrays becomes extremely compacted over time). This is within the limit of accuracy of hydrological assessments of rural catchments. The impact is not significant.

Cape River No 1 substation site

The Cape River No 1 substation site is located on a low rise on the edge of a broad river terrace associated with the Cape River. The development as proposed will be constructed to the existing topography, with very limited amount of earth works and negligible interference to drainage lines and overland flows.

3.3 (c) Soil and Vegetation characteristics

Location	Soil description
Wind turbine area and infrastructure located on the plateau	Residual soil and extremely weathered material underlain by weathered sedimentary rocks (sandstones, siltstones and conglomerates) at shallow depths. Where core was recovered, defect spacing typically ranges from 50 mm to 300 mm. Depths to rock typically range from 2 m to 3.5 m below the ground surface but the boundary between very dense and hard/friable soils and weathered rock is not always easily discerned. The rock weathers back to medium to high plasticity clay soil at some depth which is typically below 8 m to 12 m from ground surface. This clay is inferred to be extremely weathered mudstone. This weathering profile may be caused by different rock types and past water exposure through joints which expedites the weathering process. Although generally poor in fertility, the soil is relatively stable, with an absence of erosion gullies and loose surface soil across the whole of the wind turbine area.

Solar area, access road, substation, site compound and other infrastructure located on the lower plains area	Mostly residual soils and extremely weathered material comprising very stiff to hard clay (high plasticity) to depth. Clay is likely to be weathered mudstone and in some cases borders on very low strength rock. Some interstitial layers/pockets of extremely weathered or moderately weathered conglomerate (rock) recovered as clayey gravel. Soil is subject to erosion in drainage lines. The development will require minimal earthworks (substation, roads and rail crossing only). The mounting structure for the solar arrays will be directly piled with minimal disturbance to the natural contours and natural grassland vegetation. Erosion and sedimentation during construction will be managed by the construction contractor in accordance with a project construction environmental management plan, which shall include specific methods to avoid or minimise erosion and sedimentation impacts to the extent it is reasonably practicable to do so.
Cape River No 1 substation site	No geological or soil surveys have been conducted at this location. However, the area for the substation will be completely stripped of soil and backfilled with crushed rock, consolidated and a top layer of crushed screened rock (hard standing) applied.

3.3 (d) Outstanding natural features

The proposal area does not contain features that would be considered of outstanding natural value.

3.3 (e) Remnant native vegetation

Kennedy Energy Park main site

Remnant native vegetation at the main site is described in Appendix C of Attachment C.

The Queensland Department of Natural Resources and Mines (DNRM) vegetation mapping shows the majority of the proposal area is mapped as 'least concern' or 'of concern' vegetation, with cleared areas associated with watercourses in the east of the site.

A range of land zones has been mapped within the proposal area (land zones 3 and 9 on lower plains in the north and east, and land zone 7 on plateaus and scarp retreats to the south). Small pockets of land zone 9 are associated with several depressions on the tertiary plateau.

Groundtruthing of vegetation communities at the site has found that the DNRM mapping is not correct across much of the site. In particular, a reduced distribution of land zone 3 is noted in the north and a higher distribution of land zone 7 associated with the scarp retreat in the south.

No 'endangered' vegetation under the Vegetation Management Act 1999 is present on site, nor any EPBC Act listed threatened ecological communities. Smaller areas of 'of concern' vegetation were found to be present in the survey area during the field survey compared with the DNRM mapping. This relates to:

- RE 4.9.11 ('of concern') – *Acacia cambagei* low woodland with scattered shrubs such as *Eremophila mitchellii* and *Geijera parviflora* on fresh Cretaceous sediments. This community was mapped on a low slope feeding onto a low tertiary plateau in the eastern part of the site.

In addition, an area of this community is mapped along the creek where the transmission line to the substation crosses Lot 3 on DG177 (Skull Creek). This area was not groundtruthed but is assumed to relate to this community.

Cape River No 1 substation site

Remnant native vegetation at the Cape River No 1 substation site is described in "Vegetation Communities" of Attachment D.

The site has been mapped by the Queensland Government as supporting a remnant least concern heterogeneous community of RE 10.3.6a/RE 10.3.12a (90:10).

The groundtruthing of the vegetation communities at the site found that the area is more representative of land zone 5, with sandy soils noted.

For the purposes of the assessment, a precautionary approach was adopted and the vegetation is treated as remnant. Based on the soils, geology and species present, RE 10.5.4a ('least concern') is the best assessment of the vegetation within the site.

No 'endangered' or 'of concern' vegetation under the Vegetation Management Act 1999 is present on site, nor any EPBC Act listed communities.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

Kennedy Energy Park main site

The main Kennedy Energy Park site is dominated by gently undulating sedimentary landscapes dissected by drainage lines and watercourses in the north before jumping up onto a plateau in the south. The northern part of the site is approximately 350 m AHD. The plateau rises to 460 m AHD in places.

Cape River No 1 substation site

The Cape River No 1 substation site is located on the lower-mid slopes of a gentle rise on the edge of a broad river terrace. The site is approximately 380 m AHD.

3.3 (g) Current state of the environment

Kennedy Energy Park main site

The Kennedy Energy Park main site is currently used as grazing land for two stations. As a consequence, large areas of the site have been cleared historically, with evidence of fragmentation and clearance of the shrub and canopy layers, particularly the lowland plains on which the solar PV will be located. The shrub layer is dominated by the invasive mimosa bush (*Vachellia nilotica*) in this area. Parts of the site (particularly the plains in the north) were heavily drought affected and subject to over grazing. Buffel grass was prevalent in patches.

Three Queensland declared and Weeds of National Significance (WoNS) were identified in the proposal area during the field survey.

- Mimosa bush (*Vachellia nilotica*) was commonly encountered throughout the northern and central portions of the proposal area, particularly on low rises and around ephemeral drainage lines.
- Jerusalem thorn (*Parkinsonia aculeata*) was found as scattered individuals or small patches of up to twelve plants in ephemeral drainage features in the north of the proposal area.
- Rubber vine (*Cryptostegia grandiflora*) was infrequently observed in the northwestern part of the proposal area.

Wild Dog (*Canis lupis*) and Cane Toad (*Rhinella marina*) were recorded across the proposal area, and foraging by pigs was also noted across the site, with pig damage from digging noted in some communities.

Cape River No 1 substation site

The Cape River No 1 substation site is moderately intact on the western part of the site, but more fragmented in the eastern part of the site due to historic clearing. The site is surrounded by pastoral land, grazing land, an old abbatoir, and an existing substation.

The ground layer at the Cape River site is dominated by the exotic buffel grass (*Pennisetum ciliare*). Eleven exotic plant species were recorded within the proposal area although none of these species are listed as declared pest plants under the Queensland *Biosecurity Act 2014* or as Weeds of National Significance. No exotic fauna species were noted, although species such as wild dog and common myna are likely to be present.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

The proposal area does not contain Commonwealth Heritage Places or other places recognised as having heritage values.

3.3 (i) Indigenous heritage values

None known. A cultural heritage assessment, inclusive of site survey and consultation with the local Indigenous people, is currently underway and will be concluded by the end of 2016. KEP will ensure that the construction environmental management plan includes appropriate and effective mechanisms for the protection and management of Indigenous heritage values, including chance finds.

3.3 (j) Other important or unique values of the environment

There are no notable protected areas such as national parks or conservation reserves within the vicinity of the proposed development.

3.3 (k) Tenure of the action area (e.g. freehold, leasehold)

The tenure of the action area (both main site and Cape River No 1 substation site) is freehold land. A small area of Lands lease associated with the railway corridor is in the northern part of the Kennedy Energy Park main site.

3.3 (l) Existing uses of area of proposed action

Kennedy Energy Park main site

The main Kennedy Energy Park site is located on Iona and Monavale stations, which are two cattle grazing properties. The whole proposal area is currently used for cattle grazing, and the properties showed evidence of variable grazing intensities

across the site. Exotic species were present, particularly in the northern part of the site and vegetation communities in this area appeared to be heavily drought affected.

Cape River No 1 substation site

The Cape River No 1 substation site is located adjacent to an old abattoir, and the existing Ergon Energy substation, bore and water treatment plant and large dam located east of the proposed site.

3.3 (m) Any proposed uses of area of proposed action

There are no other proposed uses of the area, other than that described in this referral and the current land uses.

4 Environmental outcomes

No environmental outcomes are proposed for MNES as part of the action.

5 Measures to avoid or reduce impacts

Avoidance is the highest priority in the hierarchy of impact management. KEP has sought to avoid impacts in the first instance where practicable. Examples of this in project design are:

- The solar PV which comprises the largest area of infrastructure, is located in the northeast of the site, and avoids areas of the Mitchell grassland which is currently subject to less grazing pressure. This area showed greater infestation of mimosa bush than other grassland areas of the property.
- Use of existing tracks was prioritised where possible. An example of this is the access tracks up the escarpment will follow the route of the existing tracks to minimise impacts on vegetation on the escarpment which is mapped by DNRM as 'of concern' although this area has subsequently been groundtruthed as being of 'least concern'.
- The route of the eastern access track up the escarpment where it crosses the ephemeral creek (Skull Creek) will follow the existing track which is already cleared of vegetation.
- No clearance for turbines or associated hard standing or infrastructure will be within 25 m of the DNRM mapped boundary of 'of concern' vegetation on the escarpment.
- The overhead transmission line will overfly the DNRM mapped boundary of 'of concern vegetation' on the escarpment with appropriate height clearance.
- The overhead transmission line will span Skull Creek with groundtruthed 'of concern' vegetation (RE 4.9.11) in the east of the proposal site, to avoid impacts to this community.
- The eastern access track from the solar PV to the escarpment will avoid the mapped small area of 'of concern' vegetation in this area.
- Access tracks on the escarpment will seek to avoid the small ephemeral wetland communities mapped on the plateau (RE 4.9.1a – 'least concern') if practicable.

KEP has approval under the Concurrence Agency response to clear a corridor through "of concern" RE 4.9.11 for both the road and the transmission line. KEP seeks to minimise disturbance to this ecological community by using the existing tracks and spanning the scarp and Skull Creek (with the overhead power lines) if practicable.

Although "of concern" vegetation listed under the Queensland Vegetation Management Act 1999, represented on site by RE 4.9.11 is not a controlling provision, measures seeking to avoid this RE will result in better ecological outcomes, particularly around avoidance of the riparian corridor, and have associated benefits to any MNES potentially present on site.

KEP has adopted the measures set out in Table 2 below to minimise impacts on the environment.

Table 2 Proposed mitigation and management measures

Activity phase	Mitigation and management measure
General	A Construction Environmental Management Plan (CEMP) will be developed. This plan will include measures to avoid disturbance to areas of 'of concern' vegetation (RE 4.9.11) where practicable.
	Minimise the disturbance footprint and vegetation clearing to the extent necessary to construct the proposal.
	Confine project traffic to designated roads and access tracks.
	Construction stockpiles and machinery should be contained outside drainage channels to minimise risk of pollutants being transported.
	Prepare and implement spill management measures and procedures as part of the CEMP to minimise the risk of pollution arising from spillage or contamination on the site and adjoining areas.
	Prohibit removal or disturbance of vegetation outside of the agreed work areas, unless additional regulatory and landowner approvals are obtained.

Activity phase	Mitigation and management measure
	Develop a declared weed and pest management plan in accordance with the Petroleum Industry – Minimising Pest Spread Advisory Guidelines (APPEA, 2008).
	Appropriate good-practice construction measures will be implemented. All environmental controls, including erosion and sediment controls, must be checked for compliance on a regular basis.
	Post-construction phase an Operational Environmental Management Plan will be developed and implemented.
	Implement speed limits on the construction ROW to reduce the potential for vehicle collisions with wildlife.
Pre-clearance works	Mark and/or demarcate areas that require avoidance and inform workers and machinery operators of these locations when working within the vicinity.
	All contractors will be made aware of ecologically sensitive areas in the on-site induction, to minimise the likelihood of disturbance to areas marked for retention. Areas to be avoided will be marked on site construction plans.
Clearance works	Monitor clearing activities to ensure marked boundaries are adhered to.
	Use appropriately trained personnel or a spotter-catcher to capture injured wildlife, where possible. If further action is required, consult with a qualified vet to determine appropriate action.
	If practical and safe to do so trim or lop trees rather than remove them.
Construction works	Install and maintain appropriate sediment and erosion control structures at work sites.
	Routinely inspect erosion and sediment control measures and following significant rainfall events and carry out repairs and/or maintain as required to retain the effectiveness of the measures.

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

X	No, complete section 5.2
	Yes, complete section 5.3

6.2 Proposed action IS NOT a controlled action.

It is considered unlikely that the Kennedy Energy Park Renewable Energy Facility would impact protected matters under the EPBC Act as detailed in Attachment C and Attachment D, and summarised in this referral.

Protected matters in the EPBC Protected Matters Report for both sites are summarised below:

Wetlands of National Importance

There are no wetlands of international significance in or near the project area. Coongie Lakes Ramsar site is approximately 800 km to the southwest of the main Kennedy Energy Park site. As there is no hydrological connection to any wetlands there will be no significant impacts to the ecological character of any wetlands of international significance as a result of project activities.

It is noted that several nationally important wetlands are closer to both sites, including Great Basalt Wall, Lake Buchanan and Rollston River and Molly Darling Creek Aggregation. However, none were listed in the Protected Matters Search Reports for either site and there is no hydrological connectivity to these areas.

Listed threatened species

The ecological constraints reports concluded that four threatened fauna species under the EPBC Act were potentially present at the Kennedy Energy Park main site, and three threatened fauna species under the EPBC Act at the Cape River No 1 substation site.

Appendix J of Attachment C provides detail of an assessment of the significance of impacts to EPBC Act listed fauna at the main Kennedy Energy Park site. The constraints report for the Cape River No 1 substation site concluded no significant impacts were likely.

Following the EPBC Act guidelines significant criteria it was concluded that the action:

- Will not lead to a long term decrease in the size of an important population of the species.
- Will not reduce the area of occupancy of an important population.
- Will not fragment an existing important population into two or more populations.
- Will not adversely affect habitat critical to the survival of the species.
- Will not disrupt the breeding cycle of an important population.
- Will not modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
- Will not result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.
- Will not introduce disease that may cause the species to decline.
- Will not interfere substantially with the recovery of the species.

Areas of habitat clearance at Kennedy Energy Park are minimal, and habitat cleared is largely unsuitable for the species in question, and/or the species has no nearby records in the area. Connectivity to broader areas of suitable habitat will be

maintained. KEP has sought to avoid areas of remnant vegetation, including areas mapped as 'of concern' and management measures discussed in Section 5 will result in a risk to habitat integrity that is negligible.

Listed migratory species

The proposal area is unlikely to represent important habitat, nor support an ecologically significant proportion, for any terrestrial migratory species. Of the species listed above, rainbow bee-eater and fork-tailed swift may overfly both sites (the former species was noted).

Wetland migratory species are likely to be restricted to farm dams and wetlands, which are avoided by the proposed development. There are no mapped wetlands of importance within the proposal area, and the project should therefore not affect any habitat for wetland migratory species.

No direct impacts on migratory species will occur from project activities. KEP has sought to avoid areas of regulated vegetation in the site layout, and areas to be cleared are marginal habitat for migratory species. Wetland habitats will also be avoided.

All migratory bird species are likely to avoid construction activities, and there is only a low probability of project construction activities directly disturbing individuals. Many species will only visit the project area on a transitory basis, and may be only summer visitors. The project area is unlikely to represent important habitat, nor support an ecologically significant proportion, for any terrestrial migratory species.

It was determined through validation of habitats that the proposal area would be unlikely to support an ecologically significant migratory bird population. Therefore, migratory birds are unlikely to be a constraint to the project, and no significant impacts on migratory species are predicted.

6.3 Proposed action IS a controlled action

	Matters likely to be significantly impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

7 Environmental record of the person proposing to take the action

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** Windlab, development lead for Kennedy Energy Park Pty Ltd, has experience in the preparation of environmental mitigation and management strategies for renewable energy developments. The most recent example of this is the Coonooer Bridge Wind Farm in Victoria, which has entered operation and included successful development and construction against the following environmental management plans: • Environmental Management Plan endorsed by Buloke Shire Council and Construction Environmental Management Plan endorsed by the Department of Environment, Land, Water and Planning (DELWP) for Windlab's Coonooer Bridge Wind Farm, • Bird and Bat Management Plan endorsed by DELWP for the Coonooer Bridge Wind Farm, • Wildlife Management Plan endorsed by DELWP for the Coonooer Bridge Wind Farm. Windlab generally focusses on the development of small to medium scale renewable energy facilities that have limited impact on the environment.	X	
7.2	**Provide details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:** (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. If yes, provide details		X
7.3	**If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework and if and how the framework applies to the action.** Kennedy Energy Park Pty Ltd does not have an environmental policy and planning framework. However, in conducting its core business of project development it leverages the experience of its two parent companies, Windlab Developments and Eurus Energy Holdings Corporation. Windlab and Eurus have separately developed, constructed and operated renewable energy projects across a number of jurisdictions in Australia, Africa, Asia, Europe and the Americas. Both Windlab and Eurus work towards positive environmental outcomes consistent with regulatory requirements applicable in the relevant jurisdiction. The construction will be undertaken by a reputable contractor with a proven track record in environmental performance on similar projects. As part of the selection process for the site contractor, the bidding contractors will be required to provide the details of their corporation's environmental policy and environment management system, along with supporting evidence of its environmental performance for the past three years. For any notifiable environmental incidents recorded during that period the contractor will be required to provide details of the incident, the investigation report and actions taken to prevent recurrence.	X	
7.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**	X	

Provide name of proposal and EPBC reference number (if known) Kennedy Energy Park Pty Ltd is a special purpose company formed for the purpose of developing the Kennedy Energy Park project. As 50% owner Windlab has more recently made referrals on behalf of similar special purpose renewable energy project companies as follows: • EPBC 2015/7583 – for Kiata Wind Farm • EPBC 2013/6735 – for Coonooer Bridge Wind Farm		

8 Information sources and attachments

8.1 References

The following documents were used in preparing this referral:

- Biosis. 2016. Kennedy Energy Park Project – Ecological Constraints Assessment. Prepared for Kennedy Energy Park Ltd September 2016.
- Biosis. 2016. Ecological constraints assessment for proposed new substation at Cape River. Prepared for Kennedy Energy Park Ltd October 2016.
- Commonwealth of Australia. 2009. EPBC Act policy statement 3.13 Significant impact guidelines for the endangered black-throated finch (southern) (*Poephila cincta cincta*).
- Commonwealth of Australia. 2013. Significant Impact Guidelines 1.1: Matters of National Environmental Significance. Department of the Environment, Australian Government, Canberra.
- Commonwealth of Australia. 2016. Protected matters report accessed 18 May 2016.

Additional documentation accessed in preparing supporting documentation is detailed in the reports above, including details of database searches, vegetation mapping and species listings accessed.

8.2 Reliability and date of information

The information in this referral is sourced from:

- EPBC protected matters searches dated 18 May 2016 and 13 September 2016.
- The following additional desktop sources to provide an initial assessment of the ecological values of the survey area:
  - Queensland Government Regulated Vegetation Management Map and Vegetation Management Supporting Map.
  - Queensland Government Wildlife Online Database.
  - Queensland Government Protected Plants Flora Survey Trigger Map.
  - Queensland Government Essential habitat mapping.
  - Atlas of Living Australia (ALA) database.
- Field surveys for flora and fauna conducted in May and September 2016.

The level and reliability of information used in this referral and associated reports is considered high and sufficient to allow a comprehensive assessment of likely impacts to Matters of National Environmental Significance. It includes flora and fauna assessments completed in 2016 by experienced and reputable consultants and information from DoE databases and reliable sources, such as government agencies and published authors. The report is of reliable quality and any uncertainties are listed in the relevant reports.

8.3 Attachments

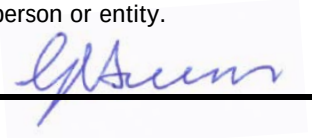
Attachments relevant to this referral are detailed below.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the locality of the proposed action (section 1)	✓	**Attachment A Project Figures** Figure 1 Site location Figure 2 Site layout – Kennedy Energy Park Figure 3 Site layout – Cape River No 1 substation **Attachment B GIS data –** Kennedy Energy Park GIS data
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the proposed action in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	**Attachment C** - Kennedy Energy Park ecological constraints report **Attachment D** - Cape River No 1 substation site ecological constraints report
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	✓	**Attachment E** - Flinders Shire decision notice
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)	✓	**Attachment C** - Kennedy Energy Park ecological constraints report **Attachment D** - Cape River No 1 substation site ecological constraints report
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3) conclusions in the referral (section 3 and 4)		
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

9 Contacts, signatures and declarations

Proposed action title: **Kennedy Energy Park – Renewable Energy Facility**

9.1 Person proposing to take action

Name and Title:	Geoffrey Burns, Project Director
Organisation:	Kennedy Energy Park Pty Ltd
Trust deed	□ ~~attached; OR~~ □ not applicable
ACN / ABN:	ABN 81 605 095 298
Postal address:	L4, 60 Marcus Clark St, Canberra. ACT. 4064
Telephone:	02 6175 4600
Email:	geoff.burns@windlab.com
I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:	*Not applicable*
If you are small business entity you must provide the Date/Income Year that you became a small business entity:	*Not applicable*
I would like to apply for a waiver of full or partial fees under regulation 5.21A of the EPBC Regulations. Under 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:	*Not applicable*
Declaration:	I declare that to the best of my knowledge the information I have given on, or attached to this form 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: 26 October 2016

9.2 Designated proponent *Not applicable*

Name of proposed proponent:

ACN / ABN:

Postal address:

Telephone:

Email:

Declaration by the proposed proponent: I ....., the proposed proponent, consent to the proposed designation of myself as the proponent for the purposes of the action described in this referral.

Signature: Date:

Declaration by the person proposing to take the action: I ....., the person proposing to take the action, consent to the proposed designation of..... as proponent for the purposes of the action described in this referral.

Signature: Date:

9.3 Person preparing the referral information (if different from section 9.1)

Name: Andrew Jensen and Barton Napier

Title: Senior Environmental Consultant and Senior Principal Environmental Consultant

Organisation: Coffey Services Australia Pty Ltd

ACN / ABN: ABN 55 139 460 521

Postal address: 47 Doggett Street, Newstead, Queensland, 4006

Telephone: +61 7 3608 2534

Email: andrew.jensen@coffey.com; barton.napier@coffey.com

Declaration: I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.

Signature:   Date: 19 October 2016