

Moama solar farm access road

Application Number: 02602

Commencement Date:
23/09/2024

Status: Locked

1. About the project

1.1 Project details

1.1.1 Project title *

Moama solar farm access road

1.1.2 Project industry type *

Transport - Land

1.1.3 Project industry sub-type

Road

1.1.4 Estimated start date *

01/03/2025

1.1.4 Estimated end date *

01/07/2025

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

To allow access to an approved solar farm development site, a new access road is required. Impact will occur during construction of the access road. A project and disturbance footprint of 0.2ha is proposed to construct the access road across the road reserve to private property.

Initial vegetation clearing and bulk earthworks to facilitate development of the access road will impact the threatened ecological community (TEC) through direct impact to the community's habitat. This will be a one-off event.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

Yes

1.2.5 Provide information about the staged development (or relevant larger project).

The access road (first stage) will facilitate the development of an approved solar farm (second and final stage).

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT

Assessment of the proposed works against the Matters of National Environmental Significance and Significant Impact guidelines was completed as part of a Statement of Environmental Effects (SEE). Referral to the Australian Government Minister for the Environment under the Commonwealth's *Environment Protection Biodiversity Conservation Act 1999* is not required.

The *Renewable Energy Act 2000* establishes solar as an eligible energy source under the Commonwealth's RET. Creating LGC's from the MSF, which can then be sold to liable entities, is subject to the approval of the Clean Energy Regulator pursuant to the Renewable Energy Act 2000.

Environmental Planning and Assessment Act 1979 - provides development approval pathway under NSW Law.

State Environmental Planning Policy (Infrastructure) 2007, is the trigger for development approval (DA):

- an electricity generating works means a building or place used for the purpose of making or generating electricity; and
- a solar energy system means, amongst other things, a PV electricity generating system.

Aboriginal objects and places are protected in New South Wales under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act). Section 90 of the NPW Act requires an Aboriginal heritage impact permit (AHIP) for harm to an Aboriginal object or Aboriginal place. Significant penalties are in place for harm to Aboriginal objects or places regardless of whether the harm was committed knowingly or not.

The NSW *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017, replacing the former NSW Threatened Species Conservation Act 1995 (TSC Act). However, Clause 28(1) of the NSW Biodiversity Conservation (Savings and Transitional) Regulation 2017 (the regulation) has delayed operation of the Biodiversity Offset Scheme (BOS) associated with Part 7 of the BC Act until 25 February 2018 for pending or interim planning applications.

The Statement of Environmental (SEE) states an EBPC referral under the EPBC Act is not required, however the access road will impact a TEC.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

No public consultation on the proposed access road has been undertaken.

1.3.1 Identity: Referring party

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details	
ABN/ACN	18654533712
Organisation name	GREEN EDGE ENVIRONMENTAL PTY LTD
Organisation address	5235 SA
Referring party details	
Name	Chris Alderton
Job title	Director
Phone	0438345109
Email	chris@geenvironmental.com.au
Address	60 Murray Street TANUNDA South Australia 5352

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	55624601985
Organisation name	MOAMA OPERATIONS CO PTY LTD
Organisation address	3000 VIC

Person proposing to take the action details

Name	Carlin Ng
Job title	Project developer
Phone	0407482747
Email	carlin.ng@metlengroup.com
Address	Level 5, 20 Bond Street, Sydney NSW 2000, Australia

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including 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 the Person proposing to take the action. *

MOAMA OPERATIONS CO PTY LTD are a company owned by Metlen Renewables. Metlen Renewables has extensive experience in complex, large-scale solar energy projects with a presence and completed projects in numerous geographical areas on all 5 continents. M Renewables provides complete photovoltaic construction services ranging from detailed design from its own engineering department to construction with proven equipment from first-class manufacturers and long-term maintenance services.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

No policy is in place.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN

55624601985

Organisation name MOAMA OPERATIONS CO PTY LTD

Organisation address 3000 VIC

Proposed designated proponent details

Name Carlin Ng

Job title Project developer

Phone 0407482747

Email carlin.ng@metlengroup.com

Address Level 5, 20 Bond Street, Sydney NSW 2000, Australia

1.3.4 Identity: Summary of allocation

✔ Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN 18654533712

Organisation name GREEN EDGE ENVIRONMENTAL PTY LTD

Organisation address 5235 SA

Representative's name Chris Alderton

Representative's job title Director

Phone 0438345109

Email chris@geenvironmental.com.au

Address 60 Murray Street TANUNDA South Australia 5352

✔ Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	55624601985
Organisation name	MOAMA OPERATIONS CO PTY LTD
Organisation address	3000 VIC
Representative's name	Carlin Ng
Representative's job title	Project developer
Phone	0407482747
Email	carlin.ng@metlengroup.com
Address	Level 5, 20 Bond Street, Sydney NSW 2000, Australia

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

Yes

1.4.10 Enter purchase order number *

Moama EPBC Referral

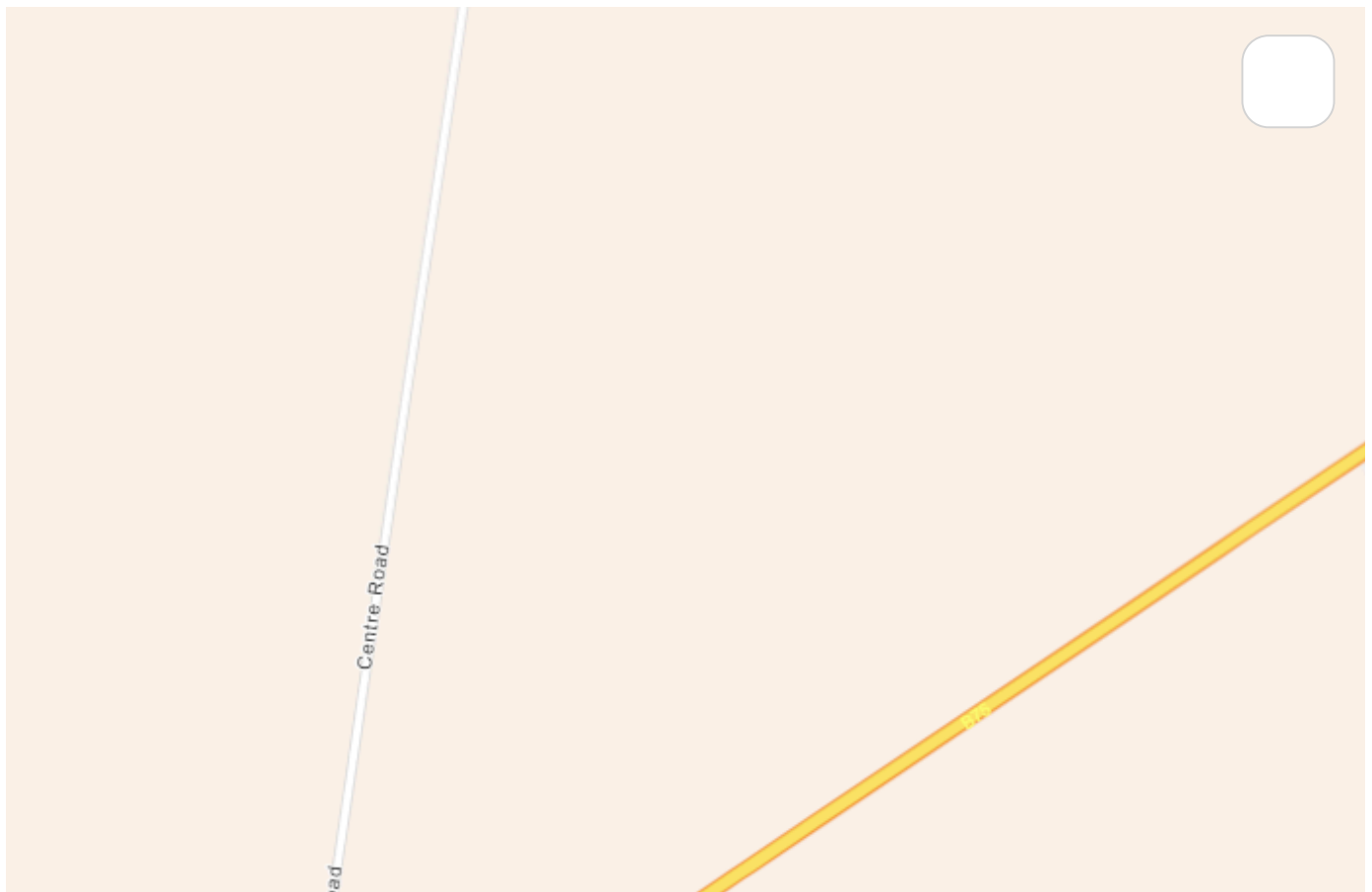
1.4 Payment details: Payment allocation

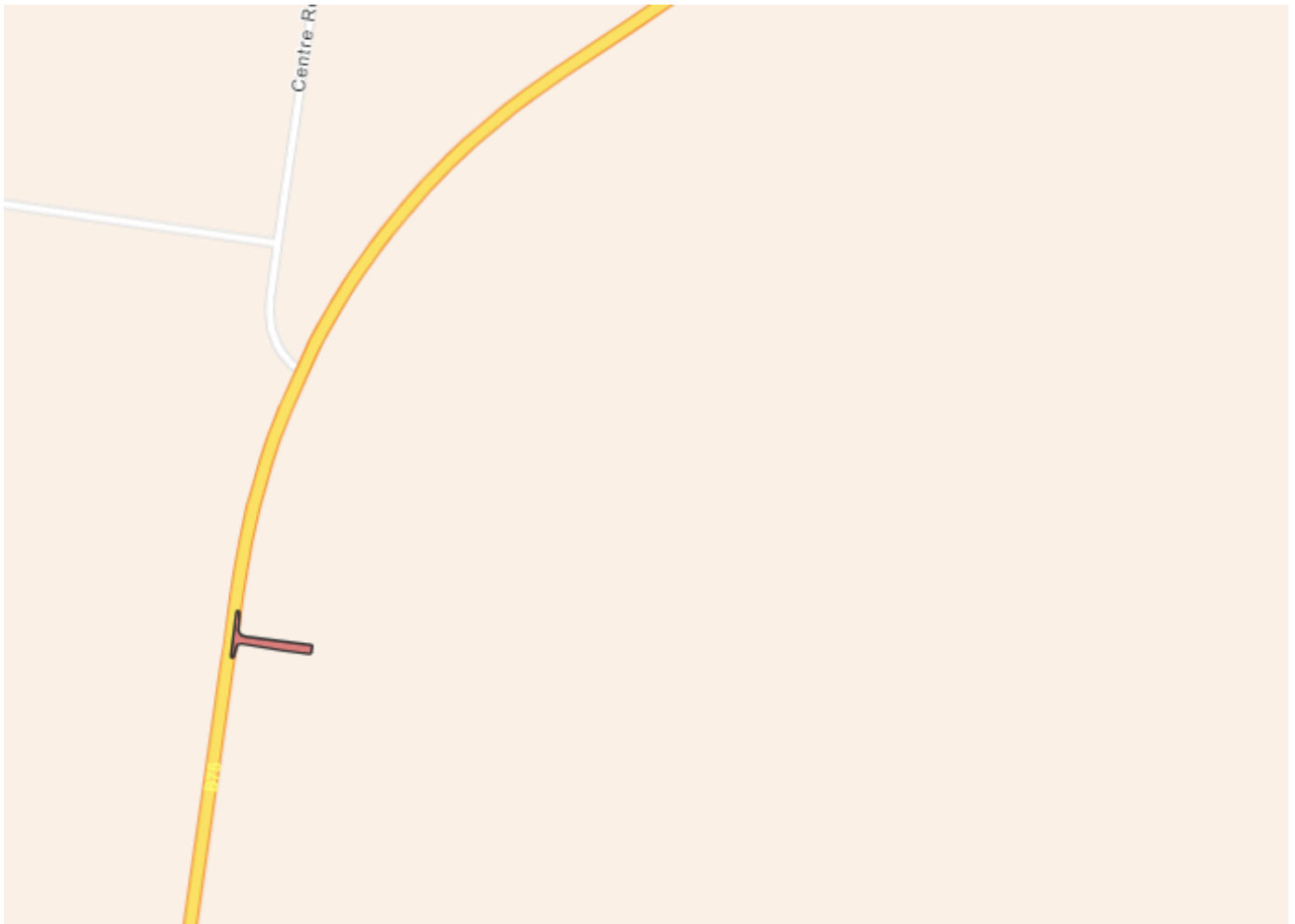
1.4.11 Who would you like to allocate as the entity responsible for payment? *

Referring party

2. Location

2.1 Project footprint





Maptaskr © 2025 -36.054057, 144.775183

Powered By Esri - Sources: Esri, TomTom, Garmin, F...

Project Area: 0.22 Ha
Disturbance Footprint: 0.22 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Adjacent Lot 114 DP751152 Cobb Highway, Moama 2731. Note crown land does not have a spe

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

Crownland (road reserve)

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

LANDSCAPE FEATURES

IBRA region: Riverina

IBRA Sub-region: Murray Fans

- The project area is within a rural landscape that has been extensively cleared. Native vegetation surrounding the project area is restricted to a grassy vegetated corridor in a travelling stock reserve to the west of the project area, and planted road verges to the north and east. These features act as a connective corridor for some species.
- No rivers, streams or wetlands are present within the project area. The project area is located approximately 9km to the west and 6km to the north of the Murray River.

3.1.2 Describe any existing or proposed uses for the project area.

The access track will traverse a road reserve designated as a travelling stock reserve (TSR) – used for the movement of stock throughout regional NSW.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

TSR's can be highly valued as conservation areas for threatened flora and fauna communities.

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

The project area is flat with elevation profiles ranging from 95m to 99mAHD.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

The area surrounding the proposed action has been cleared of native vegetation and cropped, while the site of the access track has been impacted through road construction, drainage and grazing (listed TSR). The Plant community types (PCT) present are (refer to MoamaSF_SEE, Section 7):

PCT 13 does not represent any threatened ecological community listed under the BC Act or EPBC Act known or predicted to occur in the locality.

- Forb-rich Speargrass – Windmill Grass – White Top grassland of the Riverina Bioregion (PCT 44) is present in the preferred access (Photograph 3.4). It comprises tall grassland with a variety of grasses, chenopods and forbs. These include Speargrass, Native Millet (*Panicum decompositum*), Wallaby Grass (*Rytidosperma duttonianum*), Cotton Panic Grass, Black Cottonbush, Spiny Saltbush, Woolly New Holland Daisy (*Vittadinia gracilis*), Billy Buttons (*Craspedia variabilis*), *Wurmbea dioica* and the threatened Turnip Copperburr.

PCT 44 represents Natural Grasslands of the Murray Valley Plains, listed as a critically endangered ecological community (CEEC) under the EPBC Act. The Commonwealth listing advice (TSSC 2012) recognises that PCT 44 represents the EPBC Act listed community.

Threatened species:

- One threatened flora species, Turnip Copperburr, was recorded during the survey. Given the presence of potentially suitable habitat and previous records in the locality, there is a moderate potential for *Prasophyllum* sp. Moama to occur in the preferred access route and for threatened woodland birds including the Diamond Firetail, Little Lorikeet, Superb Parrot and Swift Parrot to forage in the Western Grey Box Woodland. These species are unlikely to breed as no nests or hollow-bearing trees were.

The above results were identified in an assessment done by Geolyse, 2018 ([MoamaSF_SEE, Section 7](#)). Further investigation into the preferred access track were completed Advanced Environmental Systems, (2022) ([MoamaSF_Targeted Flora Survey](#)) as part of a condition of approval, targeting the Turnip Copperburr. This assessment concluded ([MoamaSF_Targeted Flora Survey](#), section 6).

"In the case of the Turnip Copperburr some specimens have been previously recorded on higher ground in the vicinity of the preferred access track but are no longer evident. Some Sclerolaena napiformis (Turnip Copperburr) plants were evident in the neighboring property to the south of the Moama Solar Farm.

The absence of the aforementioned two orchid species does not preclude individuals or a population of the target orchid species developing at the site. however, despite there being similar vegetation type at the 'Benchmark' site near Barnes Crossing, the soil type and periodic flooding would appear to be two major habitat factors that would limit the development of the two orchid species. The suitability of the habitat for threatened species Pterostylis despectans (Lowly greenhood) or prasophyllum sp. Moama (Leek Orchid genus) at the preferred access track site is rated as very low.

Importantly, given the outcomes of the targeted survey, the access track will not have any impact on the previously identified threatened species. moreover, the previously identified locations for Sclerolaena napiformis will be avoided during construction."

The occurrence on Natural Grasslands of the Murray Valley Plains, listed as a critically endangered ecological community (CEEC) under the EPBC Act, was also confirmed by Chris Alderton during a site visit on 11 January 2023. No report available.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

A review of State Vegetation Type Map: Riverina Region Version 1.2 - VIS ID 4469 and aerial images indicated that the majority of the project area consisted of non-native vegetation, with two plant community types (PCTs) mapped within the project area.

The extent and condition of native vegetation predicted by the pre-existing vegetation mapping (Section 3.2.1) was found to be inconsistent with that observed during field surveys and was therefore refined. Consistent with the pre-existing mapping, the majority of the project area was found to support non-native

vegetation with large areas cropped. Isolated paddock trees were recorded within areas of non-native vegetation. Three PCTs were mapped within the project area, predominantly to the west of the project area (in the travelling stock reserve) and two windrows in the east of the project area.

Non-native vegetation in the project area comprises recently cropped Common Wheat (*Triticum aestivum*). The ground in these areas has been extensively ripped and no longer supports native vegetation communities.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

A search of the NSW State Heritage Inventory (including the State Heritage Register, Interim Heritage Orders, State Agency Heritage Registers and Murray LEP heritage items) did not identify any heritage items at the development site. No historic buildings or sheds exist within the development footprint.

Similarly, a search of the Australian Heritage Database (including items on the National Heritage List, World Heritage List and Commonwealth Heritage List) did not identify any heritage items at the development site.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

An Aboriginal due diligence assessment considered background research and a visual inspection of the site and found the project area is of low archaeological potential. The project area does not meet the known indicators expected for the presence of Aboriginal artefacts. The high levels of disturbance through ploughing and harvesting, and the removal of native vegetation is likely to have destroyed any sites that may have existed.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

The Moama project area is located within the Murray basin, which is a catchment for both the Murray and the Darling rivers. It covers a large part of NSW, and connects with the Queensland, Victoria and South Australia borders. Within this basin the Lower Murray Groundwater Source supplies water to towns north of the Murray River, up to and including Moulamein and Jerilderie (MoamaSF_SEE, Section 2.3).

The Murray River, located 5 km south of the Moama project area, is a tenth order stream according to the Strahler system of organisation. The Murray River has provided generations with a strong inland river economy, it has produced a healthy number of native fish including trout and perch as well as a variety of crayfish and turtles (MoamaSF_SEE Section 2.3).

North of the site, approximately 1.5 km is a first order Strahler stream which runs into second and third order streams north of the project area. The site itself is absent of any water courses, and the average rainfall of the area regularly falls below national average at 426.8 ml (Echuca BOM) (MoamaSF_SEE, Section 2.3).

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The protected matters search tool did not identify any World Heritage Areas within 5km of the proposed project area.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The protected matters search tool did not identify any National Heritage places within 5km of the proposed project area.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Gunbower Forest
No	No	Hattah-Kulkyne Lakes
No	No	NSW Central Murray State Forests
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed project area is over 10km away from the closest Ramsar Wetland (Barmah Forest), the proposed works will not impact on hydrology or natural floodwaters within the locality.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
No	No	Amphibromus fluitans	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass
No	No	Aphelocephala leucopsis	Southern Whiteface
No	No	Aprasia parapulchella	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard
No	No	Botaurus poiciloptilus	Australasian Bittern
No	No	Brachyscome muelleroides	Mueller Daisy
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)

Direct impact	Indirect impact	Species	Common name
No	No	<i>Crinia sloanei</i>	Sloane's Froglet
No	No	<i>Falco hypoleucos</i>	Grey Falcon
No	No	<i>Galaxias rostratus</i>	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow
No	No	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe
No	No	<i>Grantiella picta</i>	Painted Honeyeater
No	No	<i>Hirundapus caudacutus</i>	White-throated Needletail
No	No	<i>Lathamus discolor</i>	Swift Parrot
No	No	<i>Lepidium monoplocoides</i>	Winged Pepper-cress
No	No	<i>Litoria raniformis</i>	Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog
No	No	<i>Lophochroa leadbeateri leadbeateri</i>	Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo
No	No	<i>Macquaria australasica</i>	Macquarie Perch
No	No	<i>Maireana cheelii</i>	Chariot Wheels
No	No	<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin, Hooded Robin (south-eastern)
No	No	<i>Neophema chrysostoma</i>	Blue-winged Parrot
No	No	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat, South-eastern Long-eared Bat
No	No	<i>Pedionomus torquatus</i>	Plains-wanderer
No	No	<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
No	No	<i>Polytelis swainsonii</i>	Superb Parrot
No	No	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox
No	No	<i>Pterostylis despectans</i>	Lowly Greenhood
No	No	<i>Rostratula australis</i>	Australian Painted Snipe
No	No	<i>Sclerolaena napiformis</i>	Turnip Copperburr

Direct impact	Indirect impact	Species	Common name
No	No	Stagonopleura guttata	Diamond Firetail
No	No	Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea
No	No	Swainsona plagiotropis	Red Darling-pea, Red Swainson-pea

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions
No	No	Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
Yes	Yes	Natural Grasslands of the Murray Valley Plains
No	No	Weeping Myall Woodlands
No	No	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The proposed access road will traverse through Natural Grasslands of the Murray Valley Plains, listed as a critically endangered ecological community (CEEC) under the EPBC Act. The proposed works will remove 0.2ha of the Critically Endangered Ecological Community (CEEC).

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Assessments of significance in accordance with EPBC Act Policy Statement 1.1 (DoE 2013) are provided in the following sections for communities listed under the EPBC Act

N.B. This assessment of significance is relevant to the removal of native vegetation in the preferred access.

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- **reduce the extent of an ecological community;**

Impacts on the listed community are restricted to the clearing of 0.2 ha for the preferred access. A large and continuous patch of this ecological community (2,851 ha) occurs in a travelling stock reserve that extends far south and north of the site. Accordingly, the removal of this small area would not reduce the extent of the ecological community (MoamaSF_SEE Appendix C, Page C2).

- **fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines;**

Impacts on the listed community are restricted to the clearing of 0.2 ha for the preferred access. The preferred access comprises an access track with a maximum width of 10 m. Pollination of grasses and forbs would still be possible across this short distance. Accordingly, the project would not fragment the ecological community (MoamaSF_SEE).

- **adversely affect habitat critical to the survival of an ecological community;**

Habitat critical to the survival of the community has not been specifically identified, as it does not have a recovery plan. As only 0.2 ha of the community would be removed in a large, contiguous patch that extends far north and south of the site, if critical habitat was present, it would not be adversely affected by the project (MoamaSF_SEE).

- **modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns;**

Creation of the new access would disturb soil and the soil seedbank in 0.2 ha of the listed community's groundcover. This would prevent the community from re-establishing in this small area in the future (MoamaSF_SEE).

- **cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting;**

Creation of the new access will disturb soil and the soil seedbank in 0.2 ha of the listed community's groundcover. The disturbance of this small area would not cause a substantial change in species composition of the adjacent retained patches of the listed community (MoamaSF_SEE).

- **cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:**
 - **Assisting invasive species, that are harmful to the listed ecological community, to become established; or**
 - **Causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of the species on the ecological community.**

Given the listed community's location in a linear travelling stock reserve, it is already subject to weed invasion, particularly from Bearded Oats. Soil disturbance for the project is not expected to increase weed invasion levels from existing levels (MoamaSF_SEE).

- **Interfere with the recovery of an ecological community**

The proposed action would not interfere with the recovery of the ecological community as only a small area (0.2 ha) would be impacted for the preferred access, while the remaining area of the community in the travelling stock reserve would remain intact (MoamaSF_SEE).

Conclusion

The project would not result in significant impacts on the listed community as only 0.2 ha would be removed, while the remaining grassland in the travelling stock reserve that extends far north and south of the site (i.e. 2,851 ha) would remain intact.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is not considered a significant impact under the EPBC Significant Impact Guidelines, as described above, and therefore unlikely to be considered a controlled action.

The disturbance area will be restored back to its existed state on decommissioning of the solar farm.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Biodiversity constraints have been identified within the project area such that impacts would be avoided and/or minimised by the design. Direct biodiversity impacts have been largely avoided and minimised by locating the project in cleared areas.

Multiple options for the proposed access track were considered for the Moama Solar Farm. The preferred access track discussed in this referral was chosen as it has the lowest impact in the Natural Grasslands of the Murray Valley Plains community CEEC. Alternate access track alignments would have disturbed approximately 0.45 of the CEEC and 0.2ha of the EPBC listed Grey Box Grassy Woodlands and Derived Native Grassland of Southeastern Australia.

Project activities with potential to impact biodiversity comprise the clearing of woodlands, native paddock trees in the project area and possible clearing for site access. Impacts are anticipated to be restricted to the construction phase, with no operational impacts expected.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

At the time of development approval in 2018 the proposed native vegetation clearing was not required to offset the proposed clearing under NSW legislation.

There are no proposed offsets for this project.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Hirundapus caudacutus	White-throated Needletail
No	No	Motacilla flava	Yellow Wagtail

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

Ecological impact assessments (Geolyse, 2018) did not identify suitable habitat for the above listed species within the disturbance footprint.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed works is not a 'nuclear action'.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth marine areas will be impacted by the proposed works.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed project will not impact on the Great Barrier Reef.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed project is not in relation to a coal mine or coal seam gas.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed project will not impact on Commonwealth lands

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The proposed project will not impact on Commonwealth Heritage Places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible.

*

In regard to potential impact on Matters of National Environmental Significance (MNES) from the proposed access track, an alternate timeline would not mitigate the proposed impact.

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

No

4.3.5 Briefly describe why an alternative location for your proposed action was not possible. *

Alternative access roads were explored. They were determined to have additional impacts over and above that presented here as the final proposed location.

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible.

In regard to impact on MNES from the proposed access track, an alternate activity is not applicable.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

Yes

4.3.4.2 On World Heritage properties *

No

4.3.4.4 On National Heritage places *

No

4.3.4.6 On the ecological character of a Ramsar wetland *

No

4.3.4.8 Listed threatened species, their habitat, or threatened ecological communities *

Yes

4.3.4.9 Describe how this alternative has different impacts or mitigations from the original proposal relating to listed threatened species, their habitat, or threatened ecological communities. *

The alternative access alignment would have an increased impact footprint. The access road as presented provides the least impact to the native grass land community in the Travelling Stock Reserve (TSR).

4.3.4.10 Listed migratory species or their habitat *

No

4.3.4.12 Is a Nuclear action *

No

4.3.4.14 On Commonwealth Marine Areas *

No

4.3.4.16 Taking place in or flowing into the Great Barrier Reef Marine Park *

No

4.3.4.18 Impacts a water resource relating to a coal seam gas or large coal mining development *

No

4.3.4.20 On or near Commonwealth Land *

No

4.3.4.22 On Commonwealth heritage places overseas *

No

4.3.4.24 Action undertaken by the Commonwealth or a Commonwealth Agency *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

Yes

4.3.5.2 Describe the details of this possible alternative that you have considered but are not proposing. *

The alternative that is not being proposed is to not take the action.

Access to the proposed Moama Solar farm (MSF) cannot be achieved without minor impacts on the critically endangered Natural Grasslands of the Murray Valley Plains community. An alternative to any action is not progressing with the project.

The objective of the MSF is to use solar panels to convert sunlight into carbon free electricity which will be sold in the National Electricity Market (NEM), create Large Generation Certificates (LGC) which will be sold to liable entities under the *Renewable Energy Act 2000* and produce electricity that will contribute to the Federal Government's RET of 33,000 gigawatt hours (GWh) by 2020.

At a local level, The MSF will have a capacity of 28 MWAC and once operational will generate approximately 70,000 megawatt hours (MWh) of carbon free electricity annually.

Census data on the number of households by Local Government Area (LGA) from 2016 reported a total of 4,467 occupied dwellings in the Murray River LGA, with an average household size of 2.3 persons.

In October 2017 the Australian Energy Regulator (AER) reported that average annual household electricity usage, in the climatic zone within which Moama is located, for a three-person household, is 8,497 kWh (ACIL, 2017).

Based on the above, the energy generated from the MSF will be sufficient to service approximately 8,238 homes annually during the life of the farm: almost double the electricity demand of all homes in the Murray River LGA.

5. Lodgement

5.1 Attachments

3.2.1 Flora and fauna within the affected area

Type	Name	Date	Sensitivity	Confidence
#1.	DocumentMoamaSF_SEE.pdf Statement of Environmental Effects to support the Development Approval	21/02/2018	Medium	
#2.	DocumentMoamaSF_Targeted Flora Survey.pdf Target flora survey	28/10/2018	High	

3.4.1 Hydrology characteristics that apply to the project area

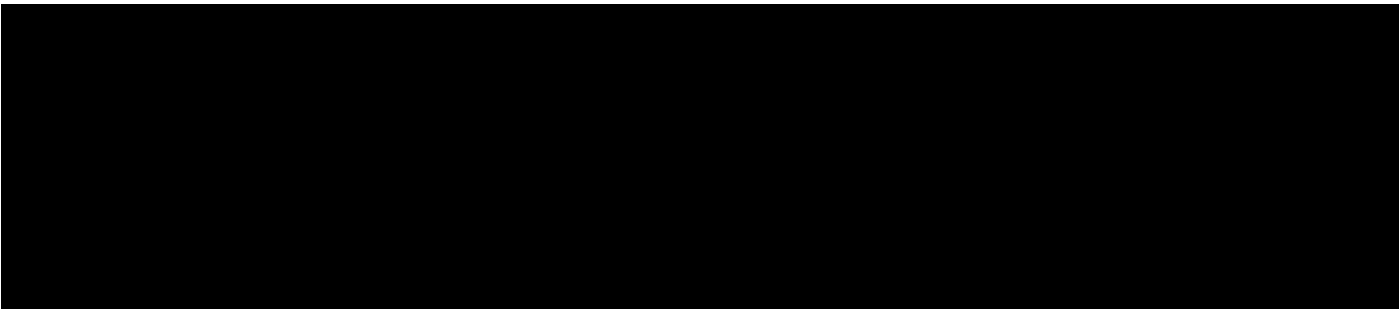
Type	Name	Date	Sensitivity	Confidence
#1.	DocumentMoamaSF_SEE.pdf Statement of Environmental Effects, including associated environmental impact studies.	20/02/2018	Medium	

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

Type	Name	Date	Sensitivity	Confidence
#1.	DocumentMoamaSF_SEE.pdf Statement of Environmental Effects, including associated environmental impact studies.	20/02/2018	No	Medium

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

Type	Name	Date	Sensitivity	Confidence
#1.	DocumentMoamaSF_SEE.pdf Statement of Environmental Effects, including associated environmental impact studies.	20/02/2018	No	Medium



5.2 Declarations

☒ Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	18654533712
Organisation name	GREEN EDGE ENVIRONMENTAL PTY LTD
Organisation address	5235 SA
Representative's name	Chris Alderton
Representative's job title	Director
Phone	0438345109
Email	chris@geenvironmental.com.au
Address	60 Murray Street TANUNDA South Australia 5352

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ By checking this box, I, **Chris Alderton of GREEN EDGE ENVIRONMENTAL PTY LTD**, 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. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ **Completed Person proposing to take the action's declaration**

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	55624601985
Organisation name	MOAMA OPERATIONS CO PTY LTD
Organisation address	3000 VIC
Representative's name	Carlin Ng
Representative's job title	Project developer
Phone	0407482747
Email	carlin.ng@metlengroup.com
Address	Level 5, 20 Bond Street, Sydney NSW 2000, Australia

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ I, **Carlin Ng of MOAMA OPERATIONS CO PTY LTD**, 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 or for the benefit of any other person or entity. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☒ Check this box to indicate you have read the referral form. *

☒ I would like to receive notifications and track the referral progress through the EPBC portal. *

☒ I, **Carlin Ng of MOAMA OPERATIONS CO PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *