

Project EnergyConnect (NSW – Western Section).

Biodiversity Offset Package



Document details	
Project Name	Project EnergyConnect (NSW – Western Section)
Project Number	SSI-10040
Document Name	Biodiversity Offset Package
File Name	PECw Final Biodiversity Offset Package Rev 4

Revision status			
Revision	Date	Description	Revised by
0	26/11/21	Draft for consultation	
1	19/1/22	Update following BCD comments	Alex Cockerill
2	09/03/22	Update following BCD and DPE review comments	John Fisher
3	14/03/22	Update following BCD and DPE review comments for Table 13.	Alex Cockerill
4	28/09/23	Final	Martin Sullivan

Document approvals		
	Name	Date
Prepared by	Martin Sullivan/Alex Cockerill	19/1/22
Updated by	Martin Sullivan	18/09/23
Reviewed by	John Fisher	19/09/23
Approved by	John Fisher	28/09/23

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1. Introduction

1.1. Overview of EnergyConnect

Transgrid (electricity transmission operator in New South Wales (NSW)) and ElectraNet (electricity transmission operator in South Australia (SA)) are seeking regulatory and environmental planning approval for the construction and operation of a new High Voltage (HV) interconnector between NSW and SA, with an added connection to north-west Victoria. Collectively, the proposed interconnector is known as EnergyConnect.

EnergyConnect comprises several components or 'sections' (shown on Figure 1). EnergyConnect aims to secure increased electricity transmission between SA, NSW and Victoria, while facilitating the longer-term transition of the energy sector across the National Electricity Market (NEM) to low emission energy sources. EnergyConnect has been identified as a priority transmission project in the NSW Transmission Infrastructure Strategy (Department of Planning and Environment, 2018), linking the SA and NSW energy markets and would assist in transporting energy from the South-West Renewable Energy Zone to major demand centres.

The EnergyConnect (NSW – Western Section) was approved under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) on 28 September 2021 (Infrastructure Approval (SSI 10040)). This Biodiversity Offset Package relates to EnergyConnect (NSW – Western Section) (the project).

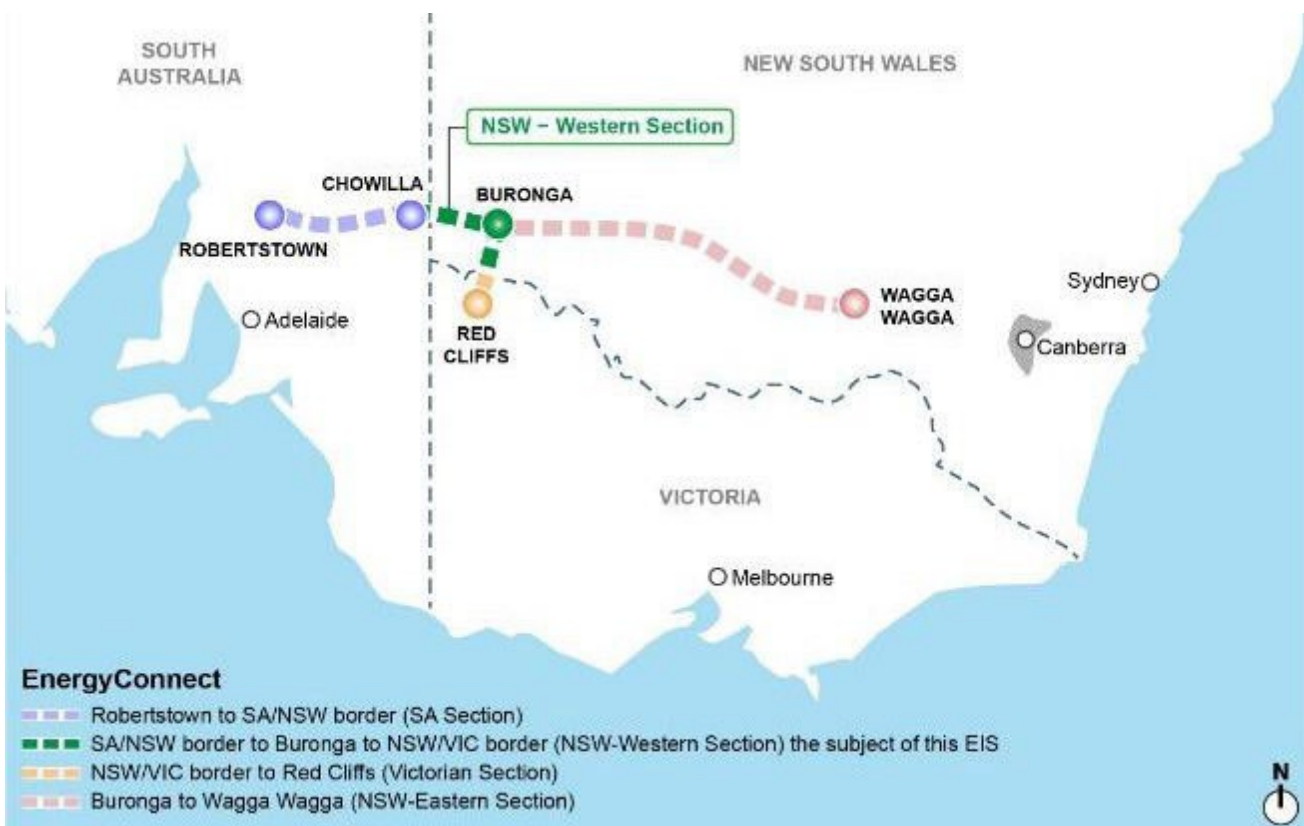


Figure 1: Overview of EnergyConnect

1.2. Key project features

The key components of the project include:

- about 135 kilometres of new 330 kilovolt (kV) double circuit transmission line and associated infrastructure between the SA/NSW border near Chowilla and the existing Buronga substation
- an upgrade of the existing 22 kilometre 220 kV single circuit transmission line between the existing Buronga substation and the NSW/Victoria border at Monak, near Red Cliffs in Victoria to a 220 kV double circuit transmission line, and the decommissioning of the 220 kV single circuit transmission line (known as Line 0X1) – a significant upgrade and expansion of the existing Buronga substation to a combined operating voltage 220 kV/330 kV
- a minor realignment of the existing 0X2 220 kV transmission line, in proximity to the Darling River
- a temporary 220 kV transmission line bypass to the south of the Buronga substation during construction
- new and/or upgrade of access tracks as required along the length of the project
- ancillary works required to facilitate the construction of the project (e.g. laydown and staging areas, concrete batching plants, brake/winch sites, earthwork material sites, construction water supply points, site offices and accommodation camps).

The final alignment and easement of the transmission line would be confirmed during detailed design and would be located within the transmission line corridor. Construction of the project has commenced and it is expected the construction of the transmission lines would take approximately 24 months.

1.3. Conditions of approval

This Biodiversity Offset Package (the Package) has been prepared in accordance with Condition D26 and D27 of the Infrastructure Approval (SSI 10040) for Project EnergyConnect (NSW – Western Section), the project Environmental Impact Statement (EIS), the project Biodiversity Development Assessment Report (BDAR) including the Biodiversity Offset Strategy and amendments following the lodgement of the Response to Submissions (RTS) and Amendment Report.

Relevant conditions are detailed in Table 1. Specifically, this Biodiversity Offset Package includes details on the biodiversity offset measures which will be implemented and delivered in accordance with the EIS. It includes detailed costings for each measure, including the equivalent payments to the Biodiversity Conservation Fund (BCF) if the relevant measure is not implemented and delivered. The Package also includes timing and responsibilities for implementation and confirmation that the measures will have been implemented by 31 December 2023.

In relation to Condition D27, the Proponent has established an escrow account totalling \$48 million to provide security to the Minister for Planning and Public Spaces for the Transgrid's offset obligations under the approval in relation to payments to the Biodiversity Conservation Fund in the event that the biodiversity offsets are not delivered in accordance with the Package.

Condition D25 a) contains restrictions of clearing and habitat that the Project must not exceed unless otherwise agreed to by the Planning Secretary. Condition D25 b) requires the Project to minimise clearing of native vegetation and key habitat. Transgrid and its construction contractor SecureEnergy are currently considering all potential impacts to biodiversity, including the biodiversity values included in Condition D25 a), and are finalising the design and construction methodology to minimise impacts to the greatest extent practicable, in accordance with the commitment in Revised mitigation measure B1 and the requirements of Condition D25 and Condition A1.

Transgrid expects that clearing of the biodiversity values included in Condition 25 a) will not exceed, and in some cases will be less than, the specified limits. Furthermore, Transgrid also expects that total clearing will be less than the total indicative clearing extents described in Section 13.2 of the BDAR. However, based on the final design and construction methodology, there might be small changes (including increases) to the indicative direct impacts on some plant community types presented in Section 9.1.2 of the BDAR.

All clearing will occur in accordance the approved Biodiversity CEMP Sub-plan for the Project. Appendix A of the Biodiversity CEMP Sub-plan contains the Project's Pre-clearing and Clearing Procedure. Section 4 of the procedure commits to the following:

- *the predicted extent clearing of native vegetation will be monitored against:*
 - *the extent of clearing permitted by condition D25 of the Infrastructure Approval. All reasonable and feasible measures will be implemented to ensure that clearing to no more than the values detailed within condition D25; and*
 - *the Plant Community Types as detailed within the Revised Biodiversity Development Assessment Report (Final BDAR)(August 2021).*

The predicted extent of clearing will also consider the type of clearing (i.e. Disturbance Area A);

In the unlikely event clearing predictions exceed the restrictions in Condition D25 a) or the indicative clearing extents included in the BDAR, Transgrid will inform the NSW Department of Planning and Environment.

The revised mitigation measures in the EIS commit to minimising potential impacts during development of the detailed design and construction methodology (Revised mitigation measure B1) and to confirming final offset requirements and meeting any additional credit liability based on actual clearing (Revised mitigation measure B15). The requirement to confirm the final credit liability in accordance with BAM and provide an offset that meets any additional credits identified is included and addressed in the approved Biodiversity CEMP Sub-plan, which must be implemented. Transgrid will carry out the Project in accordance with these commitments.

Table 1 Biodiversity Offset Package conditions

Condition	Description
D26	<p>Prior to carrying out any development that would impact on biodiversity values, the Proponent must prepare a Biodiversity Offset Package (Package) that is consistent with the EIS, in consultation with BCS and to the satisfaction of the Secretary in writing. The Package must include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a) details of the specific biodiversity offset measures to be implemented and delivered in accordance with the EIS; b) the cost for each specific biodiversity offset measure, which would be required to be paid into the Biodiversity Conservation Fund if the relevant measure is not implemented and delivered (as calculated in accordance with Division 6 of the Biodiversity Conservation Act 2016 (NSW) and the offsets payment calculator that was established as at 29 July 2021); c) the timing and responsibilities for the implementation and delivery of the measures required in the Package; and d) confirmation that the biodiversity offset measures will have been implemented and delivered no later than 31 December 2023. <p>Following approval, the Proponent must implement and deliver the Biodiversity Offset Package.</p>
D27	<p>Prior to carrying out any development that could impact the biodiversity values requiring offset, the Proponent must establish an escrow account and pay into that account \$48 million, in accordance with the Deed of Agreement with the Planning Secretary executed on 13 September 2021. The Proponent must comply with the terms of the Deed.</p> <p><i>Note: this condition provides security to the Minister for the performance of the Proponent's obligations under this approval in relation to biodiversity offsets and release funds for payment into the Biodiversity Conservation Trust in the event that the biodiversity offsets (either in whole or part) are not delivered in accordance with the Package by the Proponent.</i></p>

2. Biodiversity Offset Scheme and offset rules

Through the NSW Biodiversity Offset Scheme (BOS), credits are to be offset through Offset Trading Groups (OTGs) based on their threat status (Table 2 and Table 3). The *Biodiversity Conservation Regulation 2017* (BC Reg) sets the offset rules under the scheme. There are two sets of rules: the 'like-for-like' offset rules and 'variation' rules (Section 2.1).

Table 2: Offset trading groups for threatened ecological communities

Threat status	Offset trading group name for ecosystem credits
Critically endangered ecological community	Name of the critically endangered ecological community
Endangered ecological community	Name of the endangered ecological community
Vulnerable ecological community	Name of the vulnerable ecological community

Table 3: Offset trading groups for non-threatened Plant Community Types (PCTs)

Threat status group	Offset trading group tiers for ecosystem credits
Very High Threat (VHT)	Tier 1: PCTs in the same vegetation class with a percentage cleared value $\geq 90\%$ (being the name of the vegetation class – percentage cleared value $\geq 90\%$)
High Threat (HT)	Tier 2: PCTs in the same vegetation class with a percent cleared value $\geq 70\%$ and $< 90\%$ (being the name of the vegetation class – percentage cleared value $\geq 70\%$ and $< 90\%$)
Moderate Threat (MT)	Tier 3: PCTs in the same vegetation class with a percentage cleared value $\geq 50\%$ and $< 70\%$ (being the name of the vegetation class – percentage cleared value $\geq 50\%$ and $< 70\%$)
Low Threat (LT)	Tier 3: PCTs in the same vegetation class with a percentage cleared value $\geq 50\%$ and $< 70\%$ (being the name of the vegetation class – percentage cleared value $\geq 50\%$ and $< 70\%$)

2.1. Offset rules

Like-for-like Biodiversity Credits (Clause 6.3 of the BC Reg)

- 1) This clause applies to the determination of like-for-like biodiversity credits for the purposes of the application of the offset rules or variation rules.
- 2) In the case of impacts on threatened ecological communities, like-for-like biodiversity credits represent—
 - a) the same threatened ecological community located in—
 - i) the same or an adjoining Interim Biogeographic Regionalisation of Australia subregion as the impacted site, or
 - ii) any such subregion that is within 100 kilometres of the outer edge of the impacted site, and
 - b) if the threatened ecological community contains hollow bearing trees—vegetation that contains hollow bearing trees.
- 3) In the case of impacts on the habitat of threatened species that are ecosystem credit species or other native vegetation (other than impacts on threatened ecological communities), like-for-like biodiversity credits represent—
 - a) the same class of native vegetation located in—
 - i) the same or an adjoining Interim Biogeographic Regionalisation of Australia subregion as the impacted site, or
 - ii) any such subregion that is within 100 kilometres of the outer edge of the impacted site, and
 - b) the same or a higher offset trading group, and
 - c) if the impacted habitat contains hollow bearing trees—vegetation that contains hollow bearing trees
- 4) In the case of impacts on threatened species that are species credit species, like-for-like biodiversity credits represent the same threatened species.

Variation rules under the Biodiversity Offset Scheme (Clause 6.4 of the BC Reg)

- 1) The circumstances in which the ordinary offset rules for the determination of the like-for-like biodiversity credits required to be retired as a biodiversity conservation measure may be varied are as follows (the **variation rules**)—
 - a) The proponent who is to retire the biodiversity credits has taken reasonable steps to obtain the requisite like-for-like biodiversity credits and requests the variation of the ordinary offset rules.
 - b) In the case of impacts on threatened ecological communities or on the habitat of threatened species that are ecosystem credit species or other native vegetation—the biodiversity credits to be retired need not represent the same threatened ecological community or the same class of vegetation or

represent a location in the same or adjoining Interim Biogeographic Regionalisation of Australia subregion, so long as—

- i) they represent the same vegetation formation, and
 - ii) they are in the same or a higher offset trading group, and
 - iii) they represent a location that is in—
 - (a) the same Interim Biogeographic Regionalisation of Australia region as the impacted site, or
 - (b) a subregion that is within 100 kilometres of the outer edge of the impacted site, and
 - iv) if the impacted habitat contains hollow bearing trees—they represent vegetation that contains hollow bearing trees or artificial hollows.
- c) In the case of impacts on threatened species that are species credit species—the biodiversity credits to be retired need not represent the same threatened species, so long as—
- i) if the impacted species is a plant—they represent a plant, and
 - ii) if the impacted species is an animal—they represent an animal, and
 - iii) they represent a species that has the same or a higher category of listing under Part 4 of the Act as a threatened species, and
 - iv) they represent a location that is in—
 - (a) the same or an adjoining Interim Biogeographic Regionalisation of Australia subregion as the impacted site, or
 - (b) any such subregion that is within 100 kilometres of the outer edge of the impacted site.
- 2) The variation rules do not apply in relation to impacts on threatened species or ecological communities that are excluded by the Environment Agency Head.

Transgrid proposes to only use like-for-like biodiversity credits for the purposes of the application of the offset rules for this project.

2.2. Reasonable steps

To apply the ‘variation rules’ the proponent is required to take ‘reasonable steps’ to obtain the requisite ‘like-for-like’ biodiversity credits and requests a variation of the ‘like-for-like’ offset rules. The ‘reasonable steps’ are defined in the BC Reg (Clause 6.5) as:

- 1) Checking the public register of biodiversity credits, and
- 2) Lodging an entry in the public register of persons seeking biodiversity credits for a minimum specified period, and
- 3) Contacting landholders who are entered on the public register of biodiversity stewardship site expressions of interest.

Transgrid is committed to carry out this process in accordance with the BOS. As the majority of the offset liability for the project can be secured through like for like offsets, Transgrid is not seeking the application of the ‘variation rules’ for credit liability for this project.

2.3. Offset region

The region in which offsets can be secured as part of this package is shown on Figure 2. This includes nine separate IBRA subregions (each within 100 kilometres of the disturbance footprint) which extend from the South Australian border in the west, along the Murray River to Balranald and then straight east to Narrandera, north-east to Hillston and north to Wilcannia. This creates a large search area from which biodiversity credits can be secured for the project.

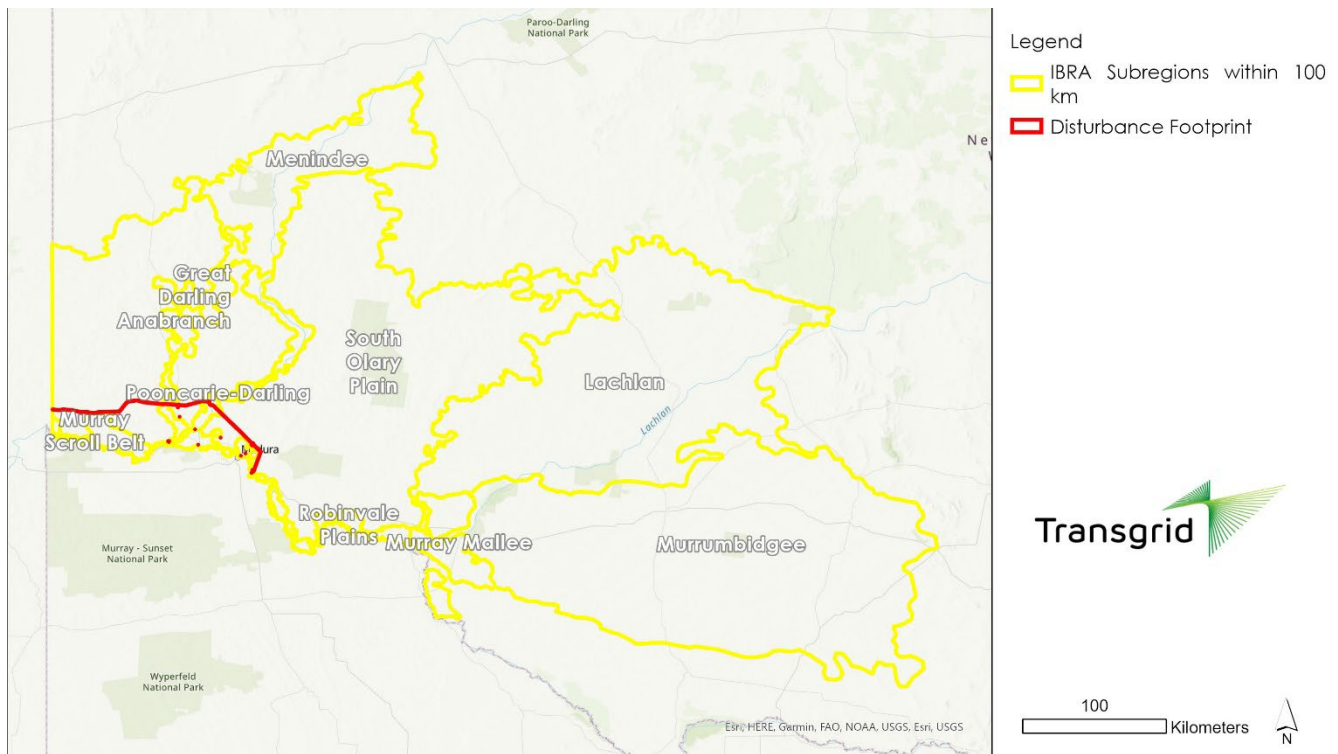


Figure 2: Offset region

3. Biodiversity credit liability

The biodiversity impacts of the project were assessed in the Biodiversity Development Assessment Report (BDAR) prepared in accordance with the NSW Biodiversity Assessment Method 2017 (BAM) and Secretary’s environmental assessment requirements (SEARs).

Residual impacts of the project that are not able to be managed through mitigation will be offset in accordance with BAM calculations for both ecosystem and species credits. The biodiversity credit liability for the project includes:

- 10,715 ecosystem credits
- 1,562 species credits.

The calculations in the BDAR are based on indicative disturbance areas only, as detailed design for the project has not yet been completed. Accordingly, the final biodiversity offset liability is subject to the timing of detailed design and construction methodology refinements and would be determined at that stage.

Ecosystem credit requirements are detailed further in Table 4. Species credit requirements are detailed in Table 5. The 10,715 ecosystem credits are required across 23 separate PCTs. Species credits are required for four flora and five fauna species (Table 5), with a total of 79 credits required for flora species credits and 1,483 credits required for fauna species credits.

On a PCT basis, more than 70% of credit requirements comes from four PCTs, namely:

- PCT 58 (Black Oak – Western Rosewood open woodland) – 21% of credits
- PCT 170 (Chenopod sandplain mallee woodland/shrubland) – 20% of credits

- PCT 15 (Black Box open woodland wetland with chenopod understorey) – 18% of credits
- PCT 153 (Black Bluebush low open shrubland) – 14% of credits

It's important to note that there is potential to roll up credit requirements into a higher threat status, so depending on the values found at Biodiversity Stewardship Sites (BSAs), fewer Offset Trading Groups may be needed to meet the biodiversity credit obligations.

The total financial liability for ecosystem and species credits for the project has been calculated through the Biodiversity Offset Payment Calculator (BOPC) at \$47,117,669 (including GST) which includes \$46,230,822 for ecosystem credits and for \$886,847 for species credits. This aligns with the \$48M which has been secured in an escrow account to ensure the timely delivery of biodiversity offsets for the project.

Table 4: Ecosystem credit requirements

PCTID	PCT Name	OTG Class	OTG Formation	IBRA Subregions [#]					Total
				MSB	SOP	GDA	PD	RP	
153	Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	Aeolian Chenopod Shrublands - LT	Arid Shrublands - LT	14	1,360	0	153	0	1,527
154	Pearl Bluebush low open shrubland of the arid and semi-arid plains			0	237	0	15	0	252
163	Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones	Riverine Chenopod Shrublands - LT		16	54	0	0	0	70
216	Black Roly Poly low open shrubland of the Riverina Bioregion and Murray Darling Depression Bioregion	Sand Plain Mulga Shrublands - LT		0	0	0	0	21	21
143	Narrow-leaved Hoppush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	Riverine Chenopod Shrublands - MT		0	49	0	0	0	49
157	Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Sand Plain Mulga Shrublands - MT	Arid Shrublands - MT	198	118	0	0	0	316
139	Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions	Riverine Chenopod Shrublands - VHT		0	0	0	35	0	35
159	Old Man Saltbush shrubland mainly of the semi-arid (warm) climate zone (south western NSW)	Inland Riverine Forests - LT	Arid Shrublands - VHT	12	33	0	0	0	45
11	River Red Gum - Lignum very tall open forest or woodland wetland on floodplains of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Inland Floodplain Shrublands - MT	Forested Wetlands - LT	0	0	0	20	3	23
17	Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Inland Saline Lakes - LT	Freshwater Wetlands - MT	0	0	0	0	1	1
63	Spiny Lignum - Slender Glasswort open forbland sailine wetland on lake edges in the semi-arid and arid climate zones		Saline Wetlands - LT	0	0	0	8	0	8
166	Disturbed annual saltbush forbland on clay plains and inundation zones mainly of south-western NSW		58	11	12	45	0	126	
253	Gypseous shrubland on rises in the semi-arid and arid plains	Riverine Sandhill Woodlands - HT		0	64	0	0	0	64
19	Cypress Pine woodland of source-bordering dunes mainly on the Murray and Murrumbidgee River floodplains			0	12	41	0	5	58

PCTID	PCT Name	OTG Class	OTG Formation	IBRA Subregions [#]					Total
				MSB	SOP	GDA	PD	RP	
21	Slender Cypress Pine - Sugarwood - Western Rosewood open woodland on sandy rises mainly in the Riverina Bioregion and Murray Darling Depression Bioregion	Riverine Sandhill Woodlands - HT	Semi-arid Woodlands - HT	0	449	0	20	0	469
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Dune Mallee Woodlands - LT	Semi-arid Woodlands - LT	0	791	0	0	0	791
172	Deep sand mallee of irregular dunefields of the semi-arid (warm) zone			0	317	0	0	0	317
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Sand Plain Mallee Woodlands - LT	Semi-arid Sand Plain Woodlands - LT	0	2,151	0	0	0	2,151
221	Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	Semi-arid Sand Plain Woodlands - LT		0	58	0	0	0	58
13	Black Box - Lignum woodland wetland of the inner floodplains in the semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Inland Floodplain Woodlands - MT		0	0	0	0	164	164
15	Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)		0	48	508	1,359	7	1,922	
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Semi-arid Sand Plain Woodlands - MT	0	2,207	21	0	0	2,228	
252	Sugarwood open woodland of the inland plains mainly Murray Darling Depression Bioregion		0	20	0	0	0	20	
Total				298	7,979	582	1,655	201	10,715

IBRA subregions:

- MSB – Murray Scroll Belt
- SOP – South Olary Plain
- GDA – Great Darling Anabranche
- PD – Pooncarie-Darling
- RP – Robinvale Plain

Table 5: Species credit requirements

Species	Common Name	BC Act Status	EPBC Act Status	Group	Total
<i>Acacia acanthoclada</i>	Harrow Wattle	Endangered	Not Listed	Flora	1
<i>Atriplex infrequens</i>	A saltbush	Vulnerable	Vulnerable	Flora	13
<i>Austrostipa nullanulla</i>	A spear-grass	Endangered	Not Listed	Flora	37
<i>Santalum murrayanum</i>	Bitter Quandong	Endangered	Not Listed	Flora	28
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable	Not Listed	Fauna	286
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	Vulnerable	Not Listed	Fauna	213
<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Not Listed	Fauna	213
<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	Vulnerable	Not Listed	Fauna	286
<i>Polytelis anthopeplus monarchoides</i>	Regent Parrot (eastern subspecies)	Endangered	Vulnerable	Fauna	485
				Total	1,562

4. Biodiversity Offset Package

The biodiversity offset strategy for the project includes three key components:

- Establishing BSAs on lands with equivalent biodiversity values to those impacted by the project;
- One-off funding for Electromagnetic Frequency (EMF) research capped at \$150,000 with a proportional reduction in credit liability for indirectly impacted fauna species by 10%;
- Purchasing credits from the market from established BSAs; and
- Making a payment into the Biodiversity Conservation Fund for outstanding liability.

Transgrid has committed to meeting and retiring the total quantum of its credit liability in accordance with the BAM. The Package will primarily retire the project's credit liability through the establishment of a series of BSAs. Any residual credit liability not met through these offset strategies will be met through the payment into the Biodiversity Conservation Fund.

Detailed vegetation survey and mapping in accordance with BAM has been completed and a BSA application to the Biodiversity Conservation Trust (BCT) that was lodged for the property 'Big Bend' in December 2021. These surveys have confirmed the presence of suitable PCTs and threatened species which will directly contribute towards the offset liability of the project.

4.1. Establishment of Biodiversity Stewardship Agreements

Under the BC Act, land with appropriate biodiversity values can be established under a BSA to allow for in-perpetuity conservation and management. BSAs allow the landholder to create biodiversity credits that can be traded to offset development impacts. Transgrid has largely completed three BSAs that have been identified to contain equivalent biodiversity values to those required to be offset by the project. One BSA is still in progress and may be available to contribute to the offsets required by the project should it be approved prior to 31 December 2023.

Transgrid has completed surveys in accordance with the BAM and submitted applications for the following BSAs:

- 'Big Bend' which covers more than 6,000 hectares of high conservation value arid and semi-arid shrublands and woodlands which are poorly conserved at the state level
- 'Nulla Nulla Station' which covers more than 3,000 hectares of high conservation value semi-arid sand plain shrublands and woodlands, inland saline lakes, and aeolian and riverine chenopod shrublands.
- 'Parkview' which covers more than 1,500 hectares of high conservation value floodplain woodlands, Sandhill Pine Woodland Endangered Ecological Community (EEC) and habitat for many threatened species.
- 'Singorimbah' which covers about 8,500 hectares of high conservation riverine plain grasslands, shrublands and the Weeping Myall Woodland EEC.

As of 28 September 2023:

- the 'Big Bend' BSA has been executed, registered on title and credits generated. Credits from this BSA necessary to address the project liability have been retired.

- the 'Nulla Nulla Station' BSA has been executed and is awaiting registration on title, with formal credit generation and retirement to follow.
- the 'Parkview' BSA has been executed, registered on title and is awaiting formal credit generation. Once generated, the credits from this BSA necessary to address the project credit liability will be retired promptly.
- Transgrid is still resolving matters with the NSW Credit Supply Taskforce concerning with ongoing grazing as a management option for the 'Singorimbah' BSA.

A summary of credits that BSA will generate is provided in the following sections.

4.2. 'Big Bend'

The 'Big Bend' BSA has been executed (BSA0065) and biodiversity credits were generated on 13 March 2023. Transgrid is the owner of the 'Big Bend' BSA. A total of 4,359 ecosystem credits and four species credits have been retired from 'Big Bend' against the offset liability for PEC West.

A total of seven 'ecosystem credits types' across five OTGs totalling more than 34,000 credits have been generated at 'Big Bend', including extensive areas of Chenopod Sandplain Mallee Woodland, Spinifex Linear Dune Mallee Woodlands and small areas of the Sandhill Pine Woodland EEC (Table 6, Figure 3).

Table 6: 'Ecosystem Credits' at 'Big Bend'

PCT	PCT Name	Credits	OTG Class [#]
21	Slender Cypress Pine - Sugarwood - Western Rosewood open woodland on sandy rises mainly in the Riverina Bioregion and Murray Darling Depression Bioregion	13	Sandhill Pine Woodland EEC
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	1,013	Semi-arid Sand Plain Woodlands - MT
143	Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	780	Sand Plain Mulga Shrublands - LT
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	23,454	Sand Plain Mallee Woodlands - LT
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	8,430	Dune Mallee Woodlands - LT
172	Deep sand mallee of irregular dunefields of the semi-arid (warm) zone	321	Dune Mallee Woodlands - LT
252	Sugarwood open woodland of the inland plains mainly Murray Darling Depression Bioregion	25	Semi-arid Sand Plain Woodlands - MT
Total		34,036	

[#]EEC = Endangered Ecological Community, LT = Low Threat, MT = Moderate Threat

'Big Bend' also generates 346 'species credits' from four threatened plant species as detailed in Table 7.

Table 7: 'Species credits' generated at 'Big Bend'

Species	Common Name	BCA Status	EPBC Status	Big Bend Credits Created
<i>Acacia acanthoclada</i>	Harrow Wattle	Endangered	Not Listed	126
<i>Santalum murrayanum</i>	Bitter Quandong	Endangered	Not Listed	3
<i>Cratystylis conocephala</i>	Bluebush Daisy	Endangered	Not Listed	1
<i>Dodonaea stenozyga</i>	Desert Hopbush	Critically Endangered	Not Listed	216
Total				346

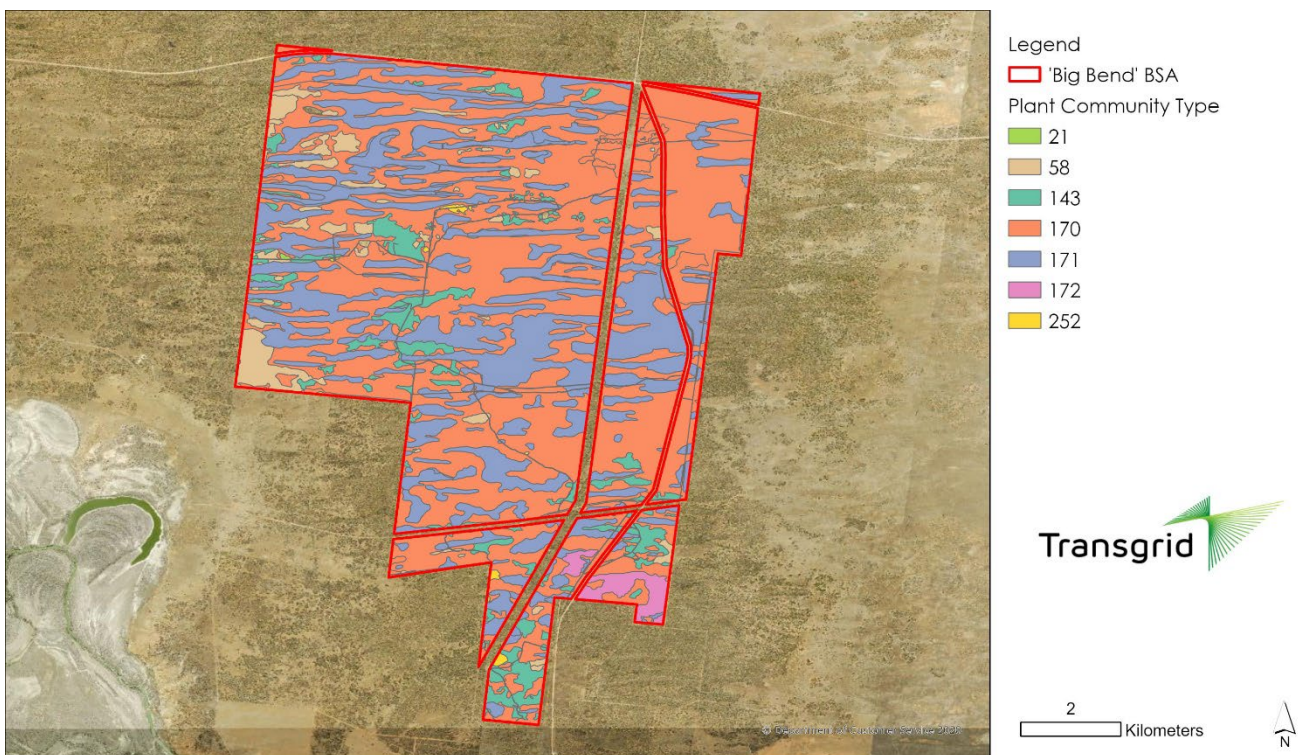


Figure 3: 'Big Bend' BSA 1

4.3. 'Nulla Nulla Station'

The 'Nulla Nulla Station' BSA is finalised, registered on title and is awaiting formal generation of credits. Transgrid has entered into a Credit Transfer Agreement with the landholder of the 'Nulla Nulla Station' BSA. On generation of credits, Transgrid will become the owner of 19,831 ecosystem credits and 132 species credits from one plant species. Credits generated relevant to PEC West will be retired prior to 31 December 2023.

A total of ten ecosystem credits types across eight OTGs have been generated at 'Nulla Nulla Station', including extensive areas of Aeolian Chenopod Shrublands, Inland Saline Lakes and Riverine Chenopod Shrublands (Table 8, Figure 4).

Table 8: 'Ecosystem Credits' generated at 'Nulla Nulla Station'

PCT	PCT Name	Credits	OTG Class [#]
28	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	21	Sandhill Pine Woodland EEC
58	Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	4,675	Semi-arid Sand Plain Woodlands - MT
64	Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	3,855	Inland Saline Lakes - LT
143	Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	140	Sand Plain Mulga Shrublands - LT
153	Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	6,133	Aeolian Chenopod Shrublands - LT
154	Pearl Bluebush low open shrubland of the arid and semi-arid plains	23	Aeolian Chenopod Shrublands - LT
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	803	Sand Plain Mallee Woodlands - LT
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	650	Dune Mallee Woodlands - LT
195	Bladder Saltbush chenopod shrubland on alluvial plains mainly in the Darling Riverine Plain Bioregion	3,019	Riverine Chenopod Shrublands - VHT
253	Gypseous shrubland on rises in the semi-arid and arid plains	512	Inland Saline Lakes - LT
Total		19,831	

#EEC = Endangered Ecological Community, LT = Low Threat, MT = Moderate Threat

'Nulla Nulla Station' also generates 126 'species credits' from one threatened plant species as detailed in Table 9.

Table 9: 'Species Credits' generated at 'Nulla Nulla Station'

Species	Common Name	BCA Status	EPBC Status	Credits Created
<i>Austrostipa nullanulla</i>	Club Spear-grass	Endangered	Not Listed	126
Total				126

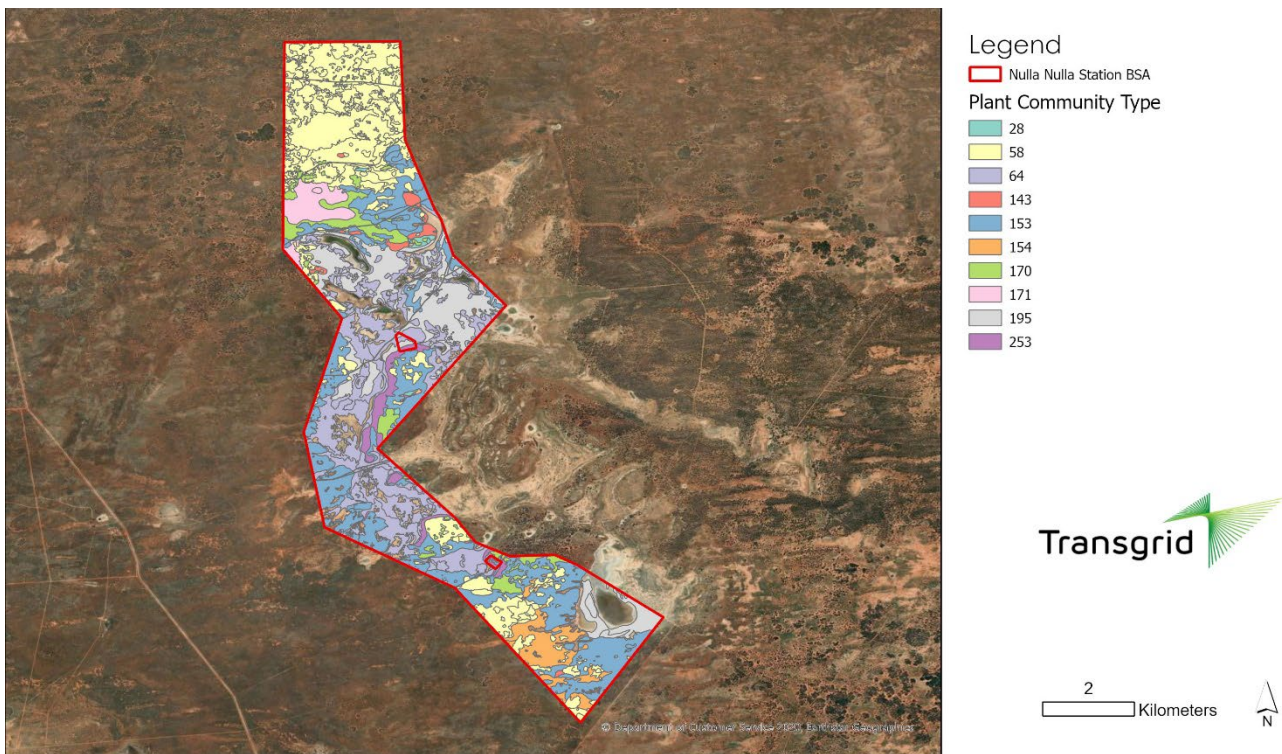


Figure 4: 'Nulla Nulla Station' BSA

4.4. 'Parkview'

The 'Parkview' BSA is finalised and awaiting final execution. Transgrid has entered into a Credit Transfer Agreement with the landholder of the 'Parkview' BSA. On generation of credits, Transgrid will become the owner of 5,405 ecosystem credits and 2,540 species credits from five threatened plant species and one threatened fauna species. Credits generated relevant to PEC West will be retired prior to 31 December 2023.

A total of seven ecosystem credits types across five OTGs have been generated at 'Parkview', including extensive areas of Inland Floodplain Woodlands and Sandhill Pine Woodland EEC (Table 10, Figure 5).

Table 10: 'Ecosystem Credits' generated at 'Parkview'

PCT	PCT Name	Credits	OTG Class#
13	Black Box - Lignum woodland wetland of the inner floodplains in the semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	1,289	Inland Floodplain Woodlands - MT
15	Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	1,959	Inland Floodplain Woodlands - MT
28	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	1,766	Sandhill Pine Woodland EEC
157	Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	8	Riverine Chenopod Shrublands - MT
160	Nitre Goosefoot shrubland wetland on clays of the inland floodplains	64	Inland Floodplain Shrublands - LT

PCT	PCT Name	Credits	OTG Class [#]
163	Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones	366	Riverine Chenopod Shrublands - LT
164	Cotton Bush open shrubland of the semi-arid (warm) zone	43	Riverine Chenopod Shrublands - LT
Total		5,495	

#EEC = Endangered Ecological Community, LT = Low Threat, MT = Moderate Threat

'Parkview' also generates 2,540 'species credits' from five threatened plant species and one threatened fauna species as detailed in Table 11.

Table 11: 'Species Credits' generated at 'Parkview'

Species	Common Name	BCA Status	EPBC Status	Credits Created
<i>Calotis moorei</i>	A burr-daisy	Endangered	Endangered	1,168
<i>Lepidium monoplacoides</i>	Winged Peppergrass	Endangered	Endangered	201
<i>Litoria raniformis</i>	Southern Bell Frog	Endangered	Vulnerable	708
<i>Maireana cheelii</i>	Chariot Wheels	Vulnerable	Vulnerable	201
<i>Swainsona murrayana</i>	Slender Darling Pea	Vulnerable	Vulnerable	201
<i>Swainsona sericea</i>	Silky Swainson-pea	Vulnerable	Not Listed	61
Total				2,540

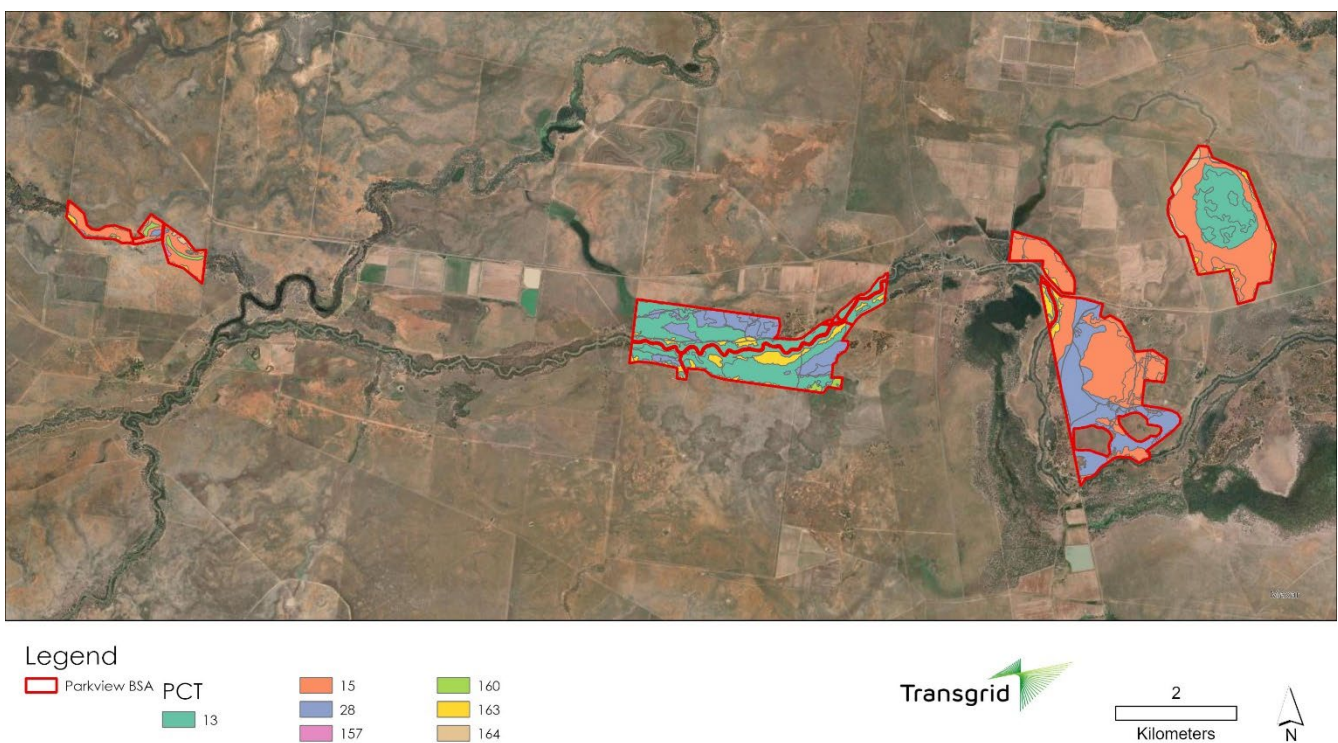


Figure 5: 'Parkview' BSA

4.5. 'Singorimbah'

Transgrid is still pursuing a BSA for the property 'Singorimbah', which it purchased on 19 September 2022 specifically to establish as a BSA site. The application currently is with the NSW Credit Supply Task Force.

To realise the full potential of the property as a conservation site, Transgrid requires the Taskforce's support for grazing as a BSA management option, as historic grazing on the property has played a key role in maintaining substantial areas of habitat for Plains-wanderer (a critically endangered threatened fauna species and a Serious and Irreversible Impact entity for the purposes of the BC Act). Current BSA guidelines, however, preclude grazing as an ongoing management activity within a BSA. Transgrid is still trying to resolve the matter with the Taskforce.

As Transgrid is not confident that the grazing matter will be resolved, and credits generated and retired, before the 31 December 2023 date specified in Condition D26. Also, the BSA will generate so few credits for the Project (the BSA will mostly generate credits required for EnergyConnect (NSW – Eastern Section)). Therefore, Transgrid has decided to discard the Singorimbah BSA as a biodiversity offset measure for the Project. As such, it no longer features as a biodiversity offset measure in this package.

4.6. EMF research

A contribution will be made by Transgrid for one-off funding into research to allow for a better understanding of the risk from EMF on bird species in Australia. The one-off funding for EMF research will be provided by the completion of construction. This forms a commitment of \$150,000 and include a proportional reduction in the credit liability for indirect impacts to fauna species by 10%, as a maximum supplementary measure.

Transgrid met with Charles Sturt University (CSU) at Wagga Wagga on 9 March 2022 to discuss the commitment and the process for research funding. CSU is the only University in Australia that has an accredited ornithology course, making it an ideal candidate to carry out the required research. CSU and Transgrid agreed to meet regularly and to confirm the indicative process and timeline to scope, fund and carry out the required research.

On 14 November 2022 Transgrid executed a funding agreement with CSU for a study into the impacts of electric and magnetic fields on birds in Australia, as required by Condition D28 b) and revised mitigation measure B9. Under the agreement, the scholarship will be payable and invoiced as follows:

- Milestone Payment 1 = 50% upon selection of the appropriate candidate; and
- Milestone Payment 2 = Remaining 50% on confirmation that the detailed scope document, as provided to and approved by Transgrid, adequately captures Transgrid's objectives.

On 9 June 2023, Transgrid accepted the CSU-nominated candidate to carry out the study into the impacts of electric and magnetic fields on birds in Australia, as required by Condition D28 b) and revised mitigation measure B9, as subsequently made Milestone Payment 1 on 27 July 2023. Transgrid is currently working with CSU to ensure that the detailed scope document adequately addresses the Project's specific commitment and requirements for the study.

Transgrid anticipates that the entire funding commitment will be met prior to 31 December 2023 (as required by Condition D26) and prior to completing construction (as required by Revised mitigation measure B9)).

Fauna species credits indirectly impacted by the project are detailed in Table 12. A total of 1,483 species credits are required to offset the impacts of the project on these species. The EMF research proposal accounts for 10% of these credits, equating to 149 credits.

Table 12: Indirect impact species credit contribution

Species	Common Name	BC Act Status	EPBC Act Status	Group	Total	10%
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable	Not Listed	Fauna	286	29
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	Vulnerable	Not Listed	Fauna	213	21
<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Not Listed	Fauna	213	21
<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	Vulnerable	Not Listed	Fauna	286	29
<i>Polytelis anthopeplus monarchoides</i>	Regent Parrot (eastern subspecies)	Endangered	Vulnerable	Fauna	485	49
Total					1,483	149

4.7. Contribution to the offset liability and outstanding credit liability

The anticipated credit reconciliation and offset costs (equivalent BCF payments) for the Project, based on the four BSAs and the EMF research proposal are set out in Table 13. The total equivalent payments factor in the Biodiversity Offset Payment Calculator (BOPC) credit prices at the time of project approval at a plant community type level versus offset trading group.

The Biodiversity Offset Package includes four BSAs and an EMF research proposal. Collectively these account for more than 99% of the ecosystem credit liability for the project. Of the 10,715 ecosystem credits required for the project, a total of 10,657 can be secured through the 'Big Bend', 'Nulla Nulla Station', and 'Parkview'. This results in a deficit of 59 ecosystem credits which will be required to be paid to the Biodiversity Offsets Payment Fund. Species credits for the project are only being generated at 'Big Bend' and 'Nulla Nulla Station'. While species credits are generated at 'Parkview' and 'Singorimbah', the credit types are not considered like for like under the offset rules. A total of 12% of species credits can be secured through the 'Big Bend', 'Nulla Nulla Station' BSA and contributions to EMF research. The remaining 1,372 credits are required to be paid to the Biodiversity Offsets Payment Fund.

Table 13: Credit reconciliation and offset costs (equivalent BCF payments)

Offset Measure	Ecosystem credits	Species credits	Equivalent BCF payment (incl. GST)
Big Bend BSA	4,359	4	\$17,905,663
Nulla Nulla Station BSA	3,718	37	\$17,979,381
Parkview BSA	2,579	0	\$8,256,593
EMF Research	0	149	\$66,480
Residual	59	1,372	\$933,156
Totals:	10,715	1,562	\$45,141,273

Table 14: Ecosystem credit liability analysis

OTG#	Credits Required	'Big Bend'			'Nulla Nulla Station'			'Parkview'			BOPC Charge per credit	Total Outstanding BOPC Payment
		Created	Retired	Remaining	Created	Retired	Remaining	Created	Retired	Remaining		
Aeolian Chenopod Shrublands - LT	1,779	0	0	1,779	6,156	1,779	0	0	0	0	\$4,518	
Dune Mallee Woodlands - LT	1,108	8,751	1,108	0	650	0	0	0	0	0	\$4,518	
Inland Floodplain Shrublands - MT	1	0	0	1	0	0	1	0	0	1	\$13,332	\$13,332
Inland Floodplain Woodlands - MT	2,086	0	0	2,086	0	0	2,086	3,248	2,086	0	\$2,782	
Inland Riverine Forests - LT	23	0	0	23	0	0	23	0	0	23	\$7,378	\$169,685
Inland Saline Lakes - LT	198	0	0	198	4,367	198	0	0	0	0	\$10,717	
Riverine Chenopod Shrublands - LT	91	0	0	91	0	0	0	409	0	0	\$4,518	
Riverine Chenopod Shrublands - MT	316	0	0	316	0	0	0	8	0	0	\$2,782	
Riverine Chenopod Shrublands - VHT	45	0	0	45	3,019	452	0	0	0	0	\$9,086	
Sand Plain Mallee Woodlands - LT	2,151	23,454	2,151	0	803	0	0	0	0	0	\$4,518	
Sand Plain Mulga Shrublands - LT	49	780	49	0	140	0	0	0	0	0	\$4,518	
Sand Plain Mulga Shrublands - MT	35	0	0	35	0	0	35	0	0	35	\$2,782	\$97,377
Sandhill Pine Woodland EEC	527	13	13	514	21	21	493	1,766	493	0	\$4,976	
Semi-arid Sand Plain Woodlands - LT	58	0	0	58	0	0	0	0	0	0	\$4,518	
Semi-arid Sand Plain Woodlands - MT	2,248	1,038	1,038	1,210	4,675	1,268	0	0	0	0	\$2,782	
Totals:	10,715	34,036	4,359	6,356	19,831	3,718	2,638	5,431	2,579	59		\$280,394

#EEC = Endangered Ecological Community, LT = Low Threat, MT = Moderate Threat, VHT = Very High Threat. As per the offset rules, trading can occur within an OTG provided the threat status is the same or higher.

In relation to species credits, a total of 1,562 species credits are required with 79 flora species credits and 1,483 fauna species credits (Table 15). Following the retirement of species credits from 'Big Bend', 'Nulla Nulla Station' and the financial contribution to EMF research, there is an outstanding credit liability of 1,372 credits (Table 15).

Table 15: Species credit liability analysis

Species	Threat Status	Credits Required	'Big Bend'			'Nulla Nulla Station'			EMF	Remaining	BOPC Charge per credit	Total Outstanding BOPC Payment
			Created	Retired	Remaining	Created	Retired	Remaining				
<i>Acacia acanthoclada</i>	Endangered	1	126	1	0	0	0	0	0	\$258.10	\$0.00	
<i>Atriplex infrequens</i>	Vulnerable	13	0	0	13	0	0	13	13	\$288.82	\$3,754.63	
<i>Austrostipa nullanulla</i>	Endangered	37	0	0	37	126	37	0	0	\$2,168.14	\$0.00	
<i>Santalum murrayanum</i>	Endangered	28	3	3	25	0	0	25	25	\$2,168.14	\$54,203.55	
<i>Haliaeetus leucogaster</i>	Vulnerable	286	0	0	286	0	0	286	29	\$288.82	\$74,226.18	
<i>Hamirostra melanosternon</i>	Vulnerable	213	0	0	213	0	0	213	21	\$184.41	\$35,406.51	
<i>Hieraaetus morphnoides</i>	Vulnerable	213	0	0	213	0	0	213	21	\$639.60	\$122,803.84	
<i>Lophochroa leadbeateri</i>	Vulnerable	286	0	0	286	0	0	286	29	\$639.60	\$164,378.05	
<i>Polytelis anthoepplus monarchoides</i>	Endangered	485	0	0	485	0	0	485	49	\$454.10	\$197,988.81	
Totals:		1,562	129	4	1558	126	37	1521	149		\$652,761.59	

4.8. Cost of each specific biodiversity offset measure

The cost of each specific biodiversity offset measure is included in Table 16 below. Costs have been determined through an evaluation of the credit liability of each component and equivalent payment to the Biodiversity Conservation Fund. Note there is a slight variation between the total in Table 16 and the indicative total in Section 3 due to trading within the offset rules which reduced credit liability for some credit classes which have higher costs associated in the BOPC. Overall, the total amount is largely consistent, and the variation is much less than 5% of the total amount.

Table 16: Cost of each specific biodiversity offset measure

Offset Measure	Ecosystem credits	Species credits	Equivalent BCF payment (incl. GST)
'Big Bend' BSA	4,359	4	\$17,905,663
'Nulla Nulla Station' BSA	3,718	37	\$17,979,381
'Parkview' BSA	2,579	0	\$8,256,593
EMF Research	0	149	\$66,480
Residual	59	1,372	\$933,156
Total	10,715	1,562	\$45,141,273

4.9. Payment to the Biodiversity Conservation Fund

Following the analysis of ecosystem and species credit liability, there are 59 ecosystem credit and 1,372 species credit deficit remaining for the project. Should Transgrid not be able to retire the additional biodiversity credits prior to 23 December 2023, an outstanding payment of approximately \$933,156 will be required to be transferred to the BCF.

4.10. Purchase of existing credits

As of 18 September 2023, there were no ecosystem credits available on the credit supply register meeting the current residual credit liability which could be acquired for the Project. Transgrid will actively review BOS credit registers prior to the 31 December 2023 and where available credits meeting the residual credit liability exist and are commercially viable, consider the purchase of these existing credits as an alternative to payment into the BCF.

5. Timing and responsibilities

Key milestones for the elements the Biodiversity Offset Package are presented in Table 17. The responsibility for each action associated with biodiversity offsetting remains with Transgrid, supported by specialist ecological consultants as required, as indicated in the table.

Should any measure proposed within the BOP not be delivered prior to 23 December 2023, then the cost of the respective measure as outlined in Table 16 will be met through equivalent payment to the BCF prior to 31 December 2023.

Table 17: Biodiversity Offset Package key milestones

Requirement/offset measure	Component	Status	Timing
Payment into escrow account	For BCF. Total of \$48m	Completed	Q3 2021
Big Bend BSA	Application submitted	Completed	Q4 2021
	Application approved	Completed	Q2 2022
	Credit retirement	Completed	Q3 2023
Nulla Nulla Station BSA	Application submitted	Completed	Q4 2022
	Application approved	Completed	Q3 2023
	Credit retirement	Anticipated	Q4 2023
Parkview BSA	Application submitted	Completed	Q4 2022
	Application approved	Completed	Q3 2023
	Credit retirement	Anticipated	Q4 2023
Electric and Magnetic Fields (EMF) study fund committed	Milestone payment 1 (50%)	Completed	Q3 2023
	Milestone payment 2 (50%)	Anticipated	Q4 2023
Residual payments to BCF	For any outstanding credits for West	Not Started	Q4 2023