

Appendix D: BDAR Addendum

Brief Report

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Date: 24 March 2021
Subject: Rye Park Wind Farm Modification Project: Revised Footprint Impact Amendments Report

Purpose

This report provides the updated impact assessment and offset requirements for the Rye Park Wind Farm Modification project (the Project) following proposed revisions to the Development Corridor and Indicative Development Footprints as Rye Park Renewable Energy (RPRE) has progressed the Projects design. This report has been prepared in consultation between Tilt Renewables.

Outcomes

The ecosystem credits required for the Project and presented in **Section 4.0** are broadly consistent with those from the previous impact assessment (Umwelt 2020a and Umwelt 2020b).

This revised assessment using the Modified Development Footprints found that the indicative Project impacts have been slightly reduced for Box Gum Woodland CEEC (BC Act and EPBC Act), Golden Sun Moth, striped legless lizard, southern myotis, and superb parrot. One threatened species, squirrel glider, slightly increased (0.26 ha). However, it is noted that this impact is substantially the same as that considered previously, and it is anticipated that RPRE will minimise the area of impact on this species through finalisation of the Development Footprints.

The Applicant remains committed to compliance with the revised biodiversity limits (relating to Box Gum Woodland CEEC and Golden Sun Moth habitat) proposed for the Final Modified Project, which we would anticipate would be specified in a modified Condition 19 of Schedule 3 'Environmental Conditions General' of the Development Consent.

Below is a summary of the total credit requirements based on the Modified Development Footprints:

- PCT 289 reduced to 25 credits (reduction of 1 credit)
- PCT 335 increased to 130 credits (increase of 5 credits)
- PCT 350 decreased to 880 credits (reduction of 3 credits)
- PCT 351 reduced to 5,247 credits (reduction of 106 credits)
- Striped legless lizard reduced to 326 credits (reduction of 2 credits)
- Southern myotis remains consistent at 1 credit

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- Squirrel glider reduced to 3,507 credits (reduction of 128 credits)
- Superb parrot reduced to 576 credits (reduction of 3 credits)
- Golden sun moth remains consistent at 1,384 credits

Recommendations

This report describes the areas of impact and credit requirements (ecosystem and species credits) for the Project based on the Modified Development Footprints. These revised impact and credit values should be adopted as the current values for the Project. Final values should be calculated when the Development Footprint is finalised. RPRE will advise DPIE if and when new calculations are made in response to any further design changes.

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- A Golden sun moth and striped legless lizard habitat within the Development Corridor and Indicative Development Footprints
- B Biodiversity Credit Reports – SWS IBRA Region (Like-for-like and Variation)

1.0 Introduction

RPRE proposes to construct the Rye Park Wind Farm Project (the Project) in southern NSW broadly between Yass and Boorowa. Umwelt has undertaken the biodiversity assessment for the Project as part of its Modification.

This report provides an update to the areas of impact and credit requirements for the Project following proposed revisions the Development Corridor and to the Indicative Development Footprints as RPRE progressed the Projects design. It is understood that while the Modified Development Footprint assessed in this document is not final, RPRE is working towards finalisation in the coming months.

1.1 Modified Development Footprint

Several distinct modifications to the Development Footprints have occurred:

- A small extension of the Development Footprint – External Roads on the north east side of the Rye Park Road and Long Street intersection, Boorowa, NSW.
- Modifications to the Development Footprint – including re-design of cabling, access tracks and development corridors.
- Modifications to the Development Footprint – Wind Farm (including transmission lines) on either side of Blakeney Creek Road South.

Further efficiencies in the Project layout have been considered to ensure like for like biodiversity impact is achievable.

2.0 Methods

The sections below describe the work undertaken as part of this revised impact assessment.

2.1 Additional Field Survey

An additional day of ecological field survey was completed on Wednesday 10th February 2021 by an Accredited BAM Assessor.

The field survey focussed on particular sections of the Modified Development Footprint where Umwelt considered ecological ground truthing was required; this included modifications to the Development Footprint – External Roads at Boorowa and the modifications at Blakeney Creek Road South.

The remaining modifications were not identified as requiring additional ecological survey due to the extensive surveys that have been completed for the Project. These are described in full in Section 2.3.3 of the Final Biodiversity Development Assessment Report prepared as part of the Modification (Umwelt 2020a).

The additional field survey included the following components within the Modified Development Footprints:

- Walked transects,
- Completion of golden sun moth habitat assessment point transects, and
- Rapid vegetation assessments to confirm Plant Community Types (PCTs) and Vegetation Zones.

2.2 GIS Mapping and BAM – Credit Calculator

Following completion of the additional field survey, GIS mapping was updated for the Modified Development Footprints relating to the PCTs (including Threatened Ecological Community [TEC] alignment) and Vegetation Zones.

In order to update the credit requirement for the project, Umwelt revised the Biodiversity Assessment Method (BAM) – Credit Calculator to capture the Modified Development Footprints. These revisions were made using the BAM – Credit Calculator versions that were updated in November 2020. The BAM – Credit Calculator assessments have been re-submitted.

A new version of the BAM was released in 2020; however, it is important to note that the project, including this update to credit requirements, has been assessed consistently through the application of the BAM2017 (OEH 2017).

2.3 Revised Assessment of Species Polygons for Species-credit Species Golden Sun Moth

The golden sun moth impact assessment method, designed and implemented as part of the Impact Assessment Addendum prepared and submitted to DPIE in November 2020 (Umwelt 2020b), was re-run using the Modified Development Footprints.

This method is described in full within the Impact Assessment Addendum (Umwelt 2020b) but is summarised below.

Umwelt developed two methods to map golden sun moth species polygons, depending on whether sightings had been recorded in particular locations, or whether surveys had recorded an absence of the species. Each method comprised particular attributes that led to areas of grassland habitat being excluded or included for consideration as the species polygon across all grassland habitats, including derived native grasslands (Vegetation Zone 4 [PCT 350 – DNG] and Vegetation Zone 6 [PCT 351 – DNG], as well as non-native vegetation (Vegetation Zone 10). Attributes considered included relevant vegetation zones, wallaby grass cover categories, golden sun moth records (and 200 metre buffers thereof), shading effects, soil moisture, vegetative barriers, slope and aspect.

The first method applies to the process undertaken to determine golden sun moth habitat within the Development Corridors that do not support existing golden sun moth records. The second method applies to the process undertaken to determine habitat for the species where the species has been recorded. The second method is important as it recognises the species has been recorded potentially outside of ideal habitat requirements, i.e., the species has been recorded in grassland habitat that perhaps does not support a 'suitable' cover of wallaby grass.

2.4 Prescribed Impact Assessment from the Removal of Non-native Vegetation Supporting Golden Sun Moth

Following the updated application of the golden sun moth impact assessment, the prescribed impact assessment prepared as part of the Impact Assessment Addendum (Umwelt 2020b) was also updated. This assessment has been undertaken in accordance with Section 9.2.1.4 of the BAM 2017 (OEH 2017).

3.0 Results

The sections below present the outcomes of the methods undertaken for this assessment of the Modified Development Footprint.

3.1 BAM – Credit Calculator

The revised impact areas and credit requirements for the Project are presented below in **Table 1** following updating the BAM – Credit Calculator to capture the work described above in **Section 2.0**. Results are presented for the NSW – South Western Slopes IBRA Region and South Eastern Highlands IBRA Region separately. Similarly, ecosystem-credit and species-credit requirements are presented separately.

The BAM – Credit Calculator that was operated to update the credit requirements has been applied consistently through the use of the BAM2017 (OEH 2017).

Table 1 Revised ecosystem and species-credit credit requirement for the Project

Veg Zone	PCT/Species-credit	Area (ha)	Credits Required
Ecosystem Credits			
NSW – South Western Slopes IBRA Bioregion			
1	289 Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion <i>Moderate to Good</i>	0.77	25
2	335 Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion <i>Moderate to Good</i>	4.88	117
3	350 Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion <i>Moderate to Good</i>	9.76	305
4	350 Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion <i>Derived Native Grassland</i>	11.90	204
5	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Moderate to Good</i>	49.70	1,620
6	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Derived Native Grassland</i>	128.49	1,135

Veg Zone	PCT/Species-credit	Area (ha)	Credits Required
7	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Acacia Shrubland</i>	2.98	61
8	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Sifton Bush Shrubland</i>	62.55	641
9	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Argyle Apple Forest</i>	0.93	28
10	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Non-native Vegetation</i>	76.73	0
South Eastern Highlands IBRA Bioregion			
1	289 Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion <i>Moderate to Good</i>	-	-
2	335 Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion <i>Moderate to Good</i>	0.84	13
3	350 Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion <i>Moderate to Good</i>	10.16	271
4	350 Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion <i>Derived Native Grassland</i>	5.63	100
5	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Moderate to Good</i>	33.13	1,025
6	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Derived Native Grassland</i>	46.43	447
7	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Acacia Shrubland</i>	5.71	91
8	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Sifton Bush Shrubland</i>	18.02	199
9	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Argyle Apple Forest</i>	-	-

Veg Zone	PCT/Species-credit	Area (ha)	Credits Required
10	351 Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion <i>Non-native Vegetation</i>	34.35	0
Species Credits			
NSW – South Western Slopes IBRA Bioregion			
-	striped legless lizard (<i>Delma impar</i>)	43.07	326
-	southern myotis (<i>Myotis macropus</i>)	<0.01	1
-	squirrel glider (<i>Petaurus norfolcensis</i>)	60.19	2,073
-	superb parrot (breeding habitat) (<i>Polytelis swainsonii</i>)	9.76	305
-	golden sun moth (<i>Synemon plana</i>)	57.66	895
South Eastern Highlands IBRA Bioregion			
-	squirrel glider (<i>Petaurus norfolcensis</i>)	43.04	1,434
-	superb parrot (breeding habitat) (<i>Polytelis swainsonii</i>)	10.16	271
-	golden sun moth (<i>Synemon plana</i>)	27.56	489

3.2 Impacts on Threatened Ecological Communities

The Modified Development Footprints for the Project will impact a total of 37.34 hectares of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC under the BC Act within Vegetation Zones 3 (19.91 hectares) and 4 (17.43 hectares); and 35.54 hectares of *White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC* under the EPBC Act within Vegetation Zones 3 (19.20 hectares) and 4 (16.34 hectares).

Impact to the CEEC under the BC Act is 0.16 hectares less than the area presented in the Project BDAR, being 37.50 hectares (Umwelt 2020a). Approximately 69.04 hectares of White Box Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC under the BC Act was identified within the wider Development Corridors. Therefore, 31.70 hectares of the CEEC (BC Act) in the Development Corridor has been avoided by the Project and considerable amounts of the CEEC (BC Act) occur beyond the Development Corridor in the local region.

Impacts to the CEEC under the EPBC Act is 0.19 hectares less than the area presented in the Project BDAR, being 35.73 hectares for this TEC (Umwelt 2020a). It is noted that 67.64 hectares of *White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC* under the EPBC Act was identified within the Development Corridor. Therefore, 32.10 hectares of the CEEC (EPBC Act) will persist within the wider Development Corridor.

Table 2 presents a summary of credits generated that align with the BC Act listed CEEC, as the CEEC boundary is not entirely consistent with the vegetation zone. The proportion of each vegetation zone that conforms with the CEEC was used to calculate the number of credits generated by the CEEC.

Table 2 Credit generation from the BC Act listed CEEC

	White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC (BC Act)	
	Vegetation Zone 3 <i>Moderate to Good</i>	Vegetation Zone 4 <i>Derived Native Grassland</i>
Total Area of Vegetation Zone (ha)	19.92	17.53
Total Credits	576	304
Total Area of CEEC (ha)	19.91	17.43
Proportion of Vegetation Zone that is CEEC	99.95 %	99.43 %
Proportional Number of CEEC Credits per Vegetation Zone ¹	576	302
Total Proportional Number of CEEC Credits ¹	878	

¹ Rounded to the nearest whole number.

3.3 Golden Sun Moth

Development Corridor

The revised analysis mapped a total of 223.36 hectares of golden sun moth species polygon within the Development Corridor, comprising 9.92 hectares of Vegetation Zone 4 (PCT 350 – DNG) and 213.44 hectares of Vegetation Zone 6 (PCT 351 – DNG). A further 272.74 hectares of grassland habitat was excluded from the golden sun moth species polygon, comprising 22.79 hectares of Vegetation Zone 4 (PCT 350 – DNG) and 249.95 hectares of Vegetation Zone 6 (PCT 351 – DNG).

An additional 58.95 hectares of Vegetation Zone 10 (Non-native Vegetation) occurs in the Development Corridor. The extent of this vegetation zone within the project will be assessed as part of the Prescribed Impact Assessment. A further 177.33 hectares of Vegetation Zone 10 (Non-native Vegetation) was excluded from the golden sun moth species polygon.

Indicative Development Footprints

The revised analysis mapped a total of 85.22 hectares of golden sun moth species polygon that could be impacted by the Project within the Indicative Development Footprints, comprising 5.42 hectares of Vegetation Zone 4 (PCT 350 – DNG) and 79.80 hectares of Vegetation Zone 6 (PCT 351 – DNG). A further 118.46 hectares of grassland habitat was excluded from the golden sun moth species polygon, comprising 15.47 hectares of Vegetation Zone 4 (PCT 350 – DNG) and 102.99 hectares of Vegetation Zone 6 (PCT 351 – DNG).

An additional 25.16 hectares of Vegetation Zone 10 (Non-native Vegetation) occurs in the Development Corridors. The extent of this vegetation zone within the project will be assessed as part of the Prescribed Impact Assessment of the BDAR. A further 108.01 hectares of Vegetation Zone 10 (Non-native Vegetation) was excluded from the golden sun moth species polygon.

The previous golden sun moth species polygon for the project totalled 85.28 hectares (Umwelt 2020b). The current revised assessment totalling 85.22 hectares presents a decrease of 0.06 hectares.

A full summary of the revised golden sun moth analysis is presented below in **Table 3**, while **Table 4** provides a comparison against the previous assessment (Umwelt 2020b).

Table 3 Summary of revised species polygon analysis for golden sun moth

	Assessment Outcome	Development Corridors							Indicative Development Footprints								
		Development Corridor - Wind Farm (ha)		Development Corridor - Permanent Met Masts (ha)		Total (ha)			Indicative Development Footprint - Wind Farm (ha)		Indicative Development Footprint - Permanent Met Masts (ha)		Indicative Development Footprint - External Roads (ha)		Total (ha)		
		SWS	SEH	SWS	SEH	SWS	SEH	Total	SWS	SEH	SWS	SEH	SWS	SEH	SWS	SEH	Total
Method 1 - No Records																	
Vegetation Zone 4 (PCT 350-DNG)	Habitat Exclusion	18.15	4.14	0.00	0.00	18.15	4.14	22.29	12.04	2.69	0.00	0.00	0.67	0.00	12.71	2.69	15.40
	GSM Habitat Inclusion	2.85	1.98	0.00	0.00	2.85	1.98	4.83	1.44	0.87	0.00	0.00	0.00	0.00	1.44	0.87	2.31
Vegetation Zone 6 (PCT 351-DNG)	Habitat Exclusion	172.49	66.72	5.09	0.55	177.58	67.27	244.85	73.53	26.12	1.33	0.10	0.14	0.00	75	26.22	101.22
	GSM Habitat Inclusion	96.75	26.01	9.67	2.51	106.42	28.52	134.94	39.43	9.45	1.65	0.84	0.00	0.00	41.08	10.29	51.37
Vegetation Zone 10 (Non-native)	Habitat Exclusion	115.12	58.87	0.00	2.53	115.12	61.4	176.52	59.40	33.83	0.40	0.47	13.57	0.00	73.37	34.3	107.67
	GSM Habitat Inclusion	17.42	10.07	0.00	0.00	17.42	10.07	27.59	7.11	3.73	0.00	0.00	0.00	0.00	7.11	3.73	10.84
Method 2 - Records																	
Vegetation Zone 4 (PCT 350-DNG)	Habitat Exclusion	0.00	0.50	0.00	0.00	0.00	0.5	0.50	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.07
	GSM Habitat Inclusion	1.36	3.73	0.00	0.00	1.36	3.73	5.09	0.65	2.46	0.00	0.0	0.00	0.00	0.65	2.46	3.11
Vegetation Zone 6 (PCT 351-DNG)	Habitat Exclusion	2.54	2.56	0.00	0.00	2.54	2.56	5.10	0.86	0.87	0.02	0.02	0.00	0.00	0.88	0.89	1.77
	GSM Habitat Inclusion	38.00	40.40	0.01	0.09	38.01	40.49	78.50	14.33	13.30	0.16	0.64	0.00	0.00	14.49	13.94	28.43
Vegetation Zone 10 (Non-native)	Habitat Exclusion	0.55	0.21	0.05	0.00	0.6	0.21	0.81	0.18	0.11	0.05	0.00	0.00	0.00	0.23	0.11	0.34
	GSM Habitat Inclusion	10.45	19.43	0.32	1.16	10.77	20.59	31.36	4.60	9.28	0.29	0.15	0.00	0.00	4.89	9.43	14.32

Table 4 Comparison of the previous and current golden sun moth impact analyses

	Previous Included			Previous Excluded			Previous Included			Previous Excluded		
	DC			DC			DF			DF		
Vegetation Zone	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10
Area (ha)	9.92	214.29	59.26	22.79	253.38	174.5	5.42	79.86	25.53	12.1	94.11	79.64
Total	224.21		59.26	276.17		174.5	85.28		25.53	106.21		79.64
	Revised Included			Revised Excluded			Revised Included			Revised Excluded		
	DC			DC			DF			DF		
Vegetation Zone	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10	VZ4	VZ6	VZ10
Area (ha)	9.92	213.44	58.95	22.79	249.95	177.33	5.42	79.8	25.16	15.47	102.99	108.01
Total	223.36		58.95	272.74		177.33	85.22		25.16	118.46		108.01
Difference between Revised and Previous	-0.85		-0.31	-3.43		2.83	-0.06		-0.37	12.25		28.37

DC = Development Corridors; DF = Development Footprints

3.4 Prescribed Impact Assessment for Golden Sun Moth

Based on the revised assessment for golden sun moth, a total of 25.16 hectares of Vegetation Zone 10 (Non-native Vegetation) within the Modified Development Footprints occur within the golden sun moth species polygon. A further 108.01 hectares of Vegetation Zone 10 (Non-native Vegetation) was excluded from the golden sun moth species polygon.

A total of 58.95 hectares of Vegetation Zone 10 (Non-native Vegetation) within the Development Corridor occur within the golden sun moth species polygon. A further 177.33 hectares of Vegetation Zone 10 (Non-native Vegetation) was excluded from the golden sun moth species polygon.

The prescribed impact assessment is presented below in **Table 5**. This assessment has been undertaken in accordance with Section 9.2.1.4 of the BAM 2017 (OEH 2017).

Table 5 Prescribed Impact Assessment of Non-native Vegetation Supporting Golden Sun Moth

Criteria	Response
The assessment of the impacts of development on the habitat of threatened species or ecological communities associated with non-native vegetation must:	
a) identify the species and ecological communities likely to use the habitat	<p>The golden sun moth has been recorded at several locations within the Indicative Development Footprints during surveys conducted by NGH and Umwelt. Consistent with the impact assessment for this species in the Biodiversity Assessment and Biodiversity Assessment Addendum (NGH Environmental 2014 and 2016), species habitat polygons were developed based on the extent of Vegetation Zones 4 and 6 (i.e., recorded DNGs) that intersect with 200 m buffers of known records for the species. As a result, 25.16 hectares of non-native vegetation fall within the species polygon for the species.</p> <p>This non-native vegetation comprises grassland areas have been extensively cleared of native flora species through intensive and historic agricultural land use. They predominantly support exotic grasses and herbs, the most abundant including squirrel tail fescue (<i>Vulpia bromoides</i>), soft brome (<i>Bromus hordeaceus</i>), silvery hairgrass (<i>Aira cupaniana</i>), prairie grass (<i>Bromus catharticus</i>), red brome (<i>Bromus rubens</i>) and paspalum (<i>Paspalum dilatatum</i>). A full description of this mapping unit is provided in Section 3.2.2 of the current BDAR (Umwelt 2020a).</p> <p>While these areas occur within the habitat buffers for the golden sun moth, it is noted that the presence of native grass species utilised by the golden sun moth (i.e., <i>Rytidosperma</i> spp. and <i>Austrostipa</i> spp.) in these areas generally occur in close proximity to the mapped PCT 350 and PCT 351 DNGs. As distances from these PCTs increase, it is likely that so do occurrences of exotic pasture weeds that do not facilitate foraging or breeding for the species. Currently, the species is only known to occur in degraded grasslands when they are dominated by the exotic Chilean needlegrass (<i>Nassella nessiana</i>) (DEWHA 2009a), which has not been recorded within any of the areas of Non-native Vegetation occurring in the Indicative Development Footprints.</p> <p>Therefore, while this assessment includes the total 25.16 hectares of Non-native Vegetation which occurs within the golden sun moth habitat buffers, it is likely that the area of Non-native Vegetation with potential to be utilised by the species is considerably lower. Those areas of Non-native Vegetation used by the species would be based on the sporadic presence of native grass species and are considered sub-optimal habitat.</p>
b) describe the nature, extent and duration of short and long-term impacts	<p>The Project will result in direct and indirect impacts, which are described in full in Section 5.1 of the current BDAR (Umwelt 2020a).</p> <p>Short-term indirect impacts will include Non-native Vegetation within and surrounding golden sun moth habitat buffers being subject to potential increase in erosion, dust pollution, noise and vibration during construction works. These will occur across the Indicative Development Footprints for approximately two years.</p>

Criteria	Response
	<p>Much of the Development Corridor is exposed to historical and ongoing disturbances from grazing and other agricultural pressures. The extent and risk of indirect impacts from construction activities associated with the Project is considered to be consistent with those presented, discussed and assessed as part of the original approval, including Biodiversity Assessment (NGH Environmental 2014) and Biodiversity Assessment Addendum (NGH Environmental 2016).</p> <p>Long-term impacts will include the removal of up to 25.16 hectares of Non-native Vegetation which occurs in areas where the Indicative Development Footprints intersect with golden sun moth habitat buffers. This may result in initial species decline due to mortality of adults and larvae during the clearing process. The removal of vegetation may also lead to (additional) feral weed encroachment to adjacent areas over time. Given the occurrence of existing weeds in habitat areas, the Project is unlikely to introduce invasive species such as weeds that are harmful to the golden sun moth or its habitat.</p> <p>Despite the Project undergoing a modification, the components of indirect and peripheral impacts remain unchanged in nature and extent.</p>
<p>c) describe, with reference to relevant literature and other reliable published sources of information, the importance within the bioregion of the habitat to these species or ecological communities</p>	<p>The Saving Our Species (SOS) report for the golden sun moth (OEH 2020) identifies two key management sites for the species: Site 1 – Upper Lachlan and Site 2 – Gundaroo/Queanbeyan. Areas within the Development Corridor occur in the Upper Lachlan Management Site, which encompasses Rye Park, the town of Kangiara and stretches across to Blakney Creek in the east. This covers a total area of approximately 140, 664 hectares where objectives for minimising the impacts of commercial activities and maintaining low weed densities are in place. The areas of Non-native Vegetation forming potential golden sun moth habitat which will be removed by the Project comprise sub-optimal habitat which is not currently being managed in a way that is consistent with the SOS management objectives (i.e., reducing and maintaining weed densities through active weed control at priority sites). Therefore, although some patches of the Development Corridor fall within the Upper Lachlan Priority Site, it is considered unlikely that the removal of Non-native Vegetation within these areas will significantly affect the SOS objective to secure the species in the long term within this region.</p> <p>The <i>Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana)</i> (DEWHA 2009a) specify that the species is only known to occur in degraded grasslands when they are dominated by the exotic Chilean needlegrass (<i>Nassella nessiana</i>). This species was not recorded within any of the Non-native Vegetation areas to be cleared during surveys, and it is likely that these areas would only be used by the species based on the sporadic presence of native grasses. Furthermore, this species has not been recorded through any ecological surveys completed for the Project. There are extensive areas (i.e., several thousand hectares) of suitable habitat for the golden sun moth mapped as Yellow Box-Apple Box Grassy Woodlands in the NSW – South Western Slopes and South Eastern Highlands IBRA bioregions (Gellie 2005). These have groundcovers dominated by the species' preferred native grasses, including wallaby grass (<i>Rytidosperma racemosum</i> var. <i>racemosum</i>), kangaroo grass (<i>Themeda australis</i>), weeping grass (<i>Microlaena stipoides</i> var. <i>stipoides</i>) and speargrass (<i>Austrostipa scabra</i>), and are likely to be similar to golden sun moth habitat areas found in the Development Corridor. These grasses are essential in the maintenance of important life cycle processes for the species, as golden sun moth larvae feed exclusively on the roots of wallaby grasses (DPIE 2019). With this abundance of higher quality foraging and breeding habitat for the species in the wider region, areas of Non-native Vegetation would likely be utilised only by very small proportion of the species within the local area, and thus a negligible proportion of the species within the wider region.</p> <p>Additionally, there are several areas where the species is found or considered likely to occur within the relevant bioregions which are protected. These include Goorooyarroo Nature Reserve, Bango Nature Reserve, McLeod's Creek Nature</p>

Criteria	Response
	<p>Reserve, Oakdale Nature Reserve (OEH 2015) and the Yass River Gorge Council reserve (Yass Valley Council 2017).</p> <p>Taking into account the above information, it is considered that the Non-native Vegetation to be impacted by the Project may potentially be utilised by local populations of the golden sun moth but is unlikely to constitute important habitat for the species within the relevant bioregions.</p>
d) predict the consequences of the impacts for the local and bioregional persistence of the suite of threatened species and communities likely to use these areas as habitat, with reference to relevant literature and other published sources of information	<p>The removal of 25.16 hectares of Non-native Vegetation will potentially have impacts on local populations occurring in these areas due to their limited dispersal ability. Clearing works may lead to mortality of both adults and larvae utilising sporadic native grasses within Non-native Vegetation, as females of the species are generally reluctant to fly and males will not fly greater than 100 m (DPIE 2019). However, the number of individuals utilising Non-native Vegetation is expected to be a small proportion of the local population due to the species' preference for intact native grasslands (DEWHA 2009). Currently, the species is only known to occur in degraded grasslands when they are dominated by the exotic Chilean needlegrass (<i>Nassella nessiana</i>) (DEWHA 2009a), which has not been recorded within any of the areas of Non-native Vegetation occurring in the Indicative Development Footprints or the Project as a whole. It is recognised that one of the major threats to the golden sun moth is the loss of their preferred habitat by vigorous exotic pasture grasses introduced for livestock grazing, nutrient enrichment and pasture cultivation (O'Dwyer & Attiwill 2000; DEWHA 2009a). As such, the Non-native Vegetation to be removed provides sub-optimal habitat for the species, and the impacts are not expected to affect the persistence of the golden sun moth in the local area.</p> <p>With regards to the wider ACT/NSW population, the areas of Non-native Vegetation are surrounded by vast amounts of higher quality native grassland habitat in the NSW – South Western Slopes, and South Eastern Highlands IBRA bioregions (Gellie 2005). These areas have groundcovers dominated by native grasses which are essential in the maintenance of important life cycle processes for the species, as golden sun moth larvae feed exclusively on the roots of wallaby grasses (DPIE 2019). Therefore, these areas would constitute habitat important to the persistence of the species and are likely the ones where minimising impacts and actively managing weeds would be of the most value. Additionally, the area of Non-native Vegetation to be removed is negligible when viewed in the regional context. Generally larger areas of connected habitat are considered the priority for protection of golden sun moth over the long-term (DEWHA 2009a). As populations separated by distances of greater than 200 m can be considered effectively isolated (DPIE 2019a and 2019b), regional populations are not expected to be affected by the Project.</p> <p>It is not considered likely that the removal of Non-native Vegetation occurring in golden sun moth habitat buffers will affect any populations in such a way that they will become extinct or have their movement restricted so that existing dispersal patterns are significantly affected. Consequences of the removal of 25.16 hectares of Non-native Vegetation are considered to be minor on both a local and regional scale.</p>

3.5 Results Summary

Table 6 below presents a comparison of impacts between the Modification's previous assessment (Umwelt 2020a and Umwelt 2020b) and the revised assessment as part of the Modified Development Footprints. All but one of the seven threatened ecological values recorded by the Project decreased in extent of impact when assessed against the Modified Development Footprints. One threatened species, squirrel glider, slightly increased (0.26 ha). However, it is expected that RPRES will reduce the area of impact on this species through finalisation of the Development Footprints.

Table 6 Comparison of the previous and current impact analysis

	Previous Areas (ha)	Revised Areas (ha)	Change (ha)
Box Gum Woodland CEEC (BC Act) ¹	37.50	37.34	-0.16
Box Gum Woodland (EPBC Act) ²	35.73	35.54	-0.19
Striped Legless Lizard	43.29	43.07	-0.22
Southern Myotis	0.03	<0.01	-0.03
Squirrel Glider	102.97	103.23	0.26
Superb Parrot	20.08	19.92	-0.16
Golden Sun Moth	85.28	85.22	-0.06

¹ White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC (BC Act); ² White box - yellow box - Blakely's red gum grassy woodlands and derived native grasslands CEEC (EPBC Act)

4.0 Credit Summary

A summary of the revised credit liability for the Project based on the Modified Development Footprints compared against the previous assessment is provided below in **Table 7**.

The biodiversity credit reports for both BAM – Credit Calculator assessments submitted for the project are provided in **Appendix B** and **Appendix C**. Both appendices include the like-for-like and variation biodiversity credit reports.

The BAM – Credit Calculator that was operated to update the credit requirements, has been assessed in full through the application of the BAM 2017 (OEH 2017).

Table 7 Ecosystem and Species-credit Credit Classes

	Previous Assessment ¹		Revised Assessment ²	
	Area (ha)	Total Credits	Area (ha)	Total Credits
SWS IBRA Region				
Ecosystem Credits				
289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	0.78	26	0.77	25
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	4.77	114	4.88	117
350- Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion	21.82	512	21.66	509
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	322.57	3,653	321.38	3,485
Species-credit Credits				
striped legless lizard (<i>Delma impar</i>)	43.29	328	43.07	326

	Previous Assessment ¹		Revised Assessment ²	
	Area (ha)	Total Credits	Area (ha)	Total Credits
southern myotis (<i>Myotis macropus</i>)	0.03	1	<0.01	1
squirrel glider (<i>Petaurus norfolcensis</i>)	62.17	2,270	60.19	2,073
superb parrot (breeding habitat) (<i>Polytelis swainsonii</i>)	9.93	308	9.76	305
golden sun moth (<i>Synemon plana</i>)	57.99	900	57.66	895
SEH IBRA Region				
Ecosystem Credits				
289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	-	-	-	-
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	0.73	11	0.84	13
350- Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion	15.78	371	15.79	371
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	134.74	1,700	137.64	1,762
Species-credit Credits				
striped legless lizard (<i>Delma impar</i>)	-	-	-	-
southern myotis (<i>Myotis macropus</i>)	-	-	-	-
squirrel glider (<i>Petaurus norfolcensis</i>)	40.80	1,365	43.04	1,434
superb parrot (breeding habitat) (<i>Polytelis swainsonii</i>)	10.15	271	10.16	271
golden sun moth (<i>Synemon plana</i>)	27.29	484	27.56	489

¹ Impact Addendum (Umwelt 2020b); ² Modified Development Footprints

5.0 References

Department of the Environment, Water, Heritage and the Arts, 2009a. *Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana)*.

Department of the Environment, Water, Heritage and the Arts, 2009b. *Background paper to EPBC Act Policy Statement 3.12 – Nationally Threatened Species and Ecological Communities: Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana)*.

Department of Planning, Industry and Environment (DPIE) (2019). Threatened Species profile – Golden Sun Moth (*Synemon plana*).

Gellie, N.J.H. (2005). Native Vegetation of the Southern Forests: South-east Highlands, Australian Alps, South-west Slopes, and SE Corner bioregions. *Cunninghamia* (2005) 9(2): 219–254.

NGH Environmental, 2014. Biodiversity Assessment Rye Park Wind Farm, prepared on behalf of Epuron, January 2014.

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O'Dwyer C. & Attiwill P. M. (2000) Restoration of a native grassland as habitat for the golden sun moth *Synemon plana* Walker (Lepidoptera; Castniidae) at Mount Piper, Australia. *Restor. Ecol.* **8**, 170–4.

Office of Environment and Heritage (OEH) (2015). Gunning Reserves Plan of Management: Incorporating Bango Nature Reserve, Oakdale Nature Reserve, Mcleods Creek Nature Reserve and Belmont State Conservation Area. October 2015.

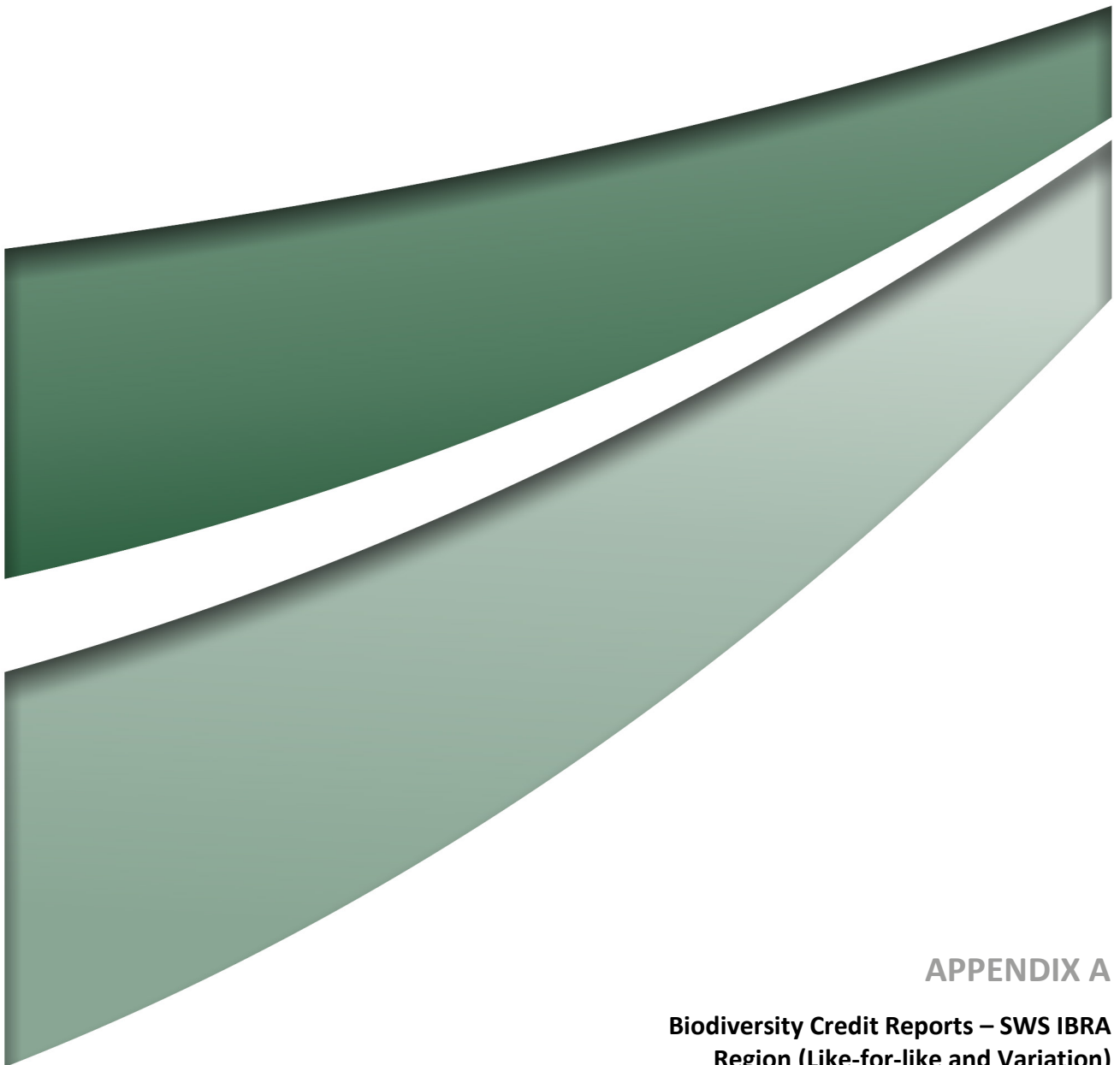
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Umwelt 2020a. Rye Park Wind Farm – Biodiversity Development Assessment Report, Final (August 2020).

Umwelt 2020b. Rye Park Wind Farm – Impact Assessment Addendum (November 2020).

Yass Valley Council (2017). Plan of Management for Yass Gorge 2017-2027. September 2017.



APPENDIX A

**Biodiversity Credit Reports – SWS IBRA
Region (Like-for-like and Variation)**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00010359/BAAS17068/18/00012902	Rye Park SWS IBRA	22/02/2021
Assessor Name	Assessor Number	BAM Data version *
Bill Wallach	BAAS17068	37
Proponent Names	Report Created	BAM Case Status
Tilt Renewables	19/03/2021	Open
Assessment Revision	Assessment Type	Date Finalised
8	Major Projects	To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box Yellow Box Blakely's Red Gum Woodland	Endangered Ecological Community	350-Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion
Species		
Synemon plana / Golden Sun Moth		

BAM Biodiversity Credit Report (Like for like)

Additional Information for Approval

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	0.8	25	0	25
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	4.9	0	117	117
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Not a TEC	321.4	2844	641	3485

BAM Biodiversity Credit Report (Like for like)

289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Upper Riverina Dry Sclerophyll Forests This includes PCT's: 269, 285, 289, 290, 298, 302, 304, 314, 338, 340, 342, 353, 1088, 1094, 1095	Upper Riverina Dry Sclerophyll Forests >=50% and <70%	289_Moderate Good	Yes	25	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Like for like)

	Inland Floodplain Swamps This includes PCT's: 66, 204, 205, 335, 360, 447, 465, 1291	Inland Floodplain Swamps >=70% and <90%	335_Moderate Good	No	117	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Moderate Good_Remnant	Yes	1620	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_DNG	Yes	1135	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Moderate Good_Acacia	Yes	61	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Sifton	No	641	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Argyle	Yes	28	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Exotic	No	0	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Delma impar / Striped Legless Lizard	351_DNG	43.1	326.00
Myotis macropus / Southern Myotis	350_Moderate	0.0	1.00
Petaurus norfolcensis / Squirrel Glider	351_ModerateGood_Remnant, 289_ModerateGood, 350_Moderate	57.2	2073.00
Polytelis swainsonii / Superb Parrot	350_Moderate	9.8	305.00
Synemon plana / Golden Sun Moth	350_DNG, 351_DNG	57.7	895.00

BAM Biodiversity Credit Report (Like for like)

Credit Retirement Options		Like-for-like credit retirement options
Delma impar / Striped Legless Lizard	Spp	IBRA subregion
	Delma impar / Striped Legless Lizard	Any in NSW
Myotis macropus / Southern Myotis	Spp	IBRA subregion
	Myotis macropus / Southern Myotis	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW
Polytelis swainsonii / Superb Parrot	Spp	IBRA subregion
	Polytelis swainsonii / Superb Parrot	Any in NSW
Synemon plana / Golden Sun Moth	Spp	IBRA subregion
	Synemon plana / Golden Sun Moth	Any in NSW

BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id

00010359/BAAS17068/18/00012902

Assessor Name

Bill Wallach

Proponent Name(s)

Tilt Renewables

Assessment Revision

8

Proposal Name

Rye Park SWS IBRA

Assessor Number

BAAS17068

Report Created

19/03/2021

Assessment Type

Major Projects

BAM data last updated *

22/02/2021

BAM Data version *

37

BAM Case Status

Open

Date Finalised

To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box Yellow Box Blakely's Red Gum Woodland	Endangered Ecological Community	350-Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion
Species		
Synemon plana / Golden Sun Moth		

Additional Information for Approval

PCTs With Customized Benchmarks

PCT
No Changes

BAM Biodiversity Credit Report (Variations)

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	0.8	25	0	25.00
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	4.9	0	117	117.00
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Not a TEC	321.4	2844	641	3485.00

289-Mugga Ironbark - Inland Scribbly Gum - Red Box shrub/grass open forest on hills in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Variations)

	Upper Riverina Dry Sclerophyll Forests This includes PCT's: 269, 285, 289, 290, 298, 302, 304, 314, 338, 340, 342, 353, 1088, 1094, 1095	Upper Riverina Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	289_ModerateGood	Yes	25	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region
	Dry Sclerophyll Forests (Shrub/grass sub-formation)	Tier 3 or higher threat status	289_ModerateGood	Yes (including artificial)	25	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Variations)

	Inland Floodplain Swamps This includes PCT's: 66, 204, 205, 335, 360, 447, 465, 1291	Inland Floodplain Swamps >=70% and <90%	335_ModerateGood	No	117	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region
	Freshwater Wetlands	Tier 2 or higher threat status	335_ModerateGood	No	117	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Variations)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_ModerateGood_Remnant	Yes	1620	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_DNG	Yes	1135	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_ModerateGood_Acacia	Yes	61	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_Sifton	No	641	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_Argyle	Yes	28	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_Exotic	No	0	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

Variation options					
Formation	Trading group	Zone	HBT	Credits	IBRA region
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_ModerateGood_Remnant	Yes (including artificial)	1620	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_DNG	Yes (including artificial)	1135	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_ModerateGood_Acacia	Yes (including artificial)	61	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Sifton	No	641	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Argyle	Yes (including artificial)	28	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Exotic	No	0	IBRA Region: NSW South Western Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Delma impar / Striped Legless Lizard	351_DNG	43.1	326.00
Myotis macropus / Southern Myotis	350_Moderate	0.0	1.00
Petaurus norfolcensis / Squirrel Glider	351_ModerateGood_Remnant, 289_ModerateGood, 350_Moderate	57.2	2073.00
Polytelis swainsonii / Superb Parrot	350_Moderate	9.8	305.00
Synemon plana / Golden Sun Moth	350_DNG, 351_DNG	57.7	895.00

Credit Retirement Options Like-for-like options

Delma impar / Striped Legless Lizard	Spp	IBRA region
	Delma impar / Striped Legless Lizard	Any in NSW

BAM Biodiversity Credit Report (Variations)

Delma impar/ Striped Legless Lizard	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Myotis macropus/ Southern Myotis	Spp		IBRA region
	Myotis macropus /Southern Myotis		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region

BAM Biodiversity Credit Report (Variations)

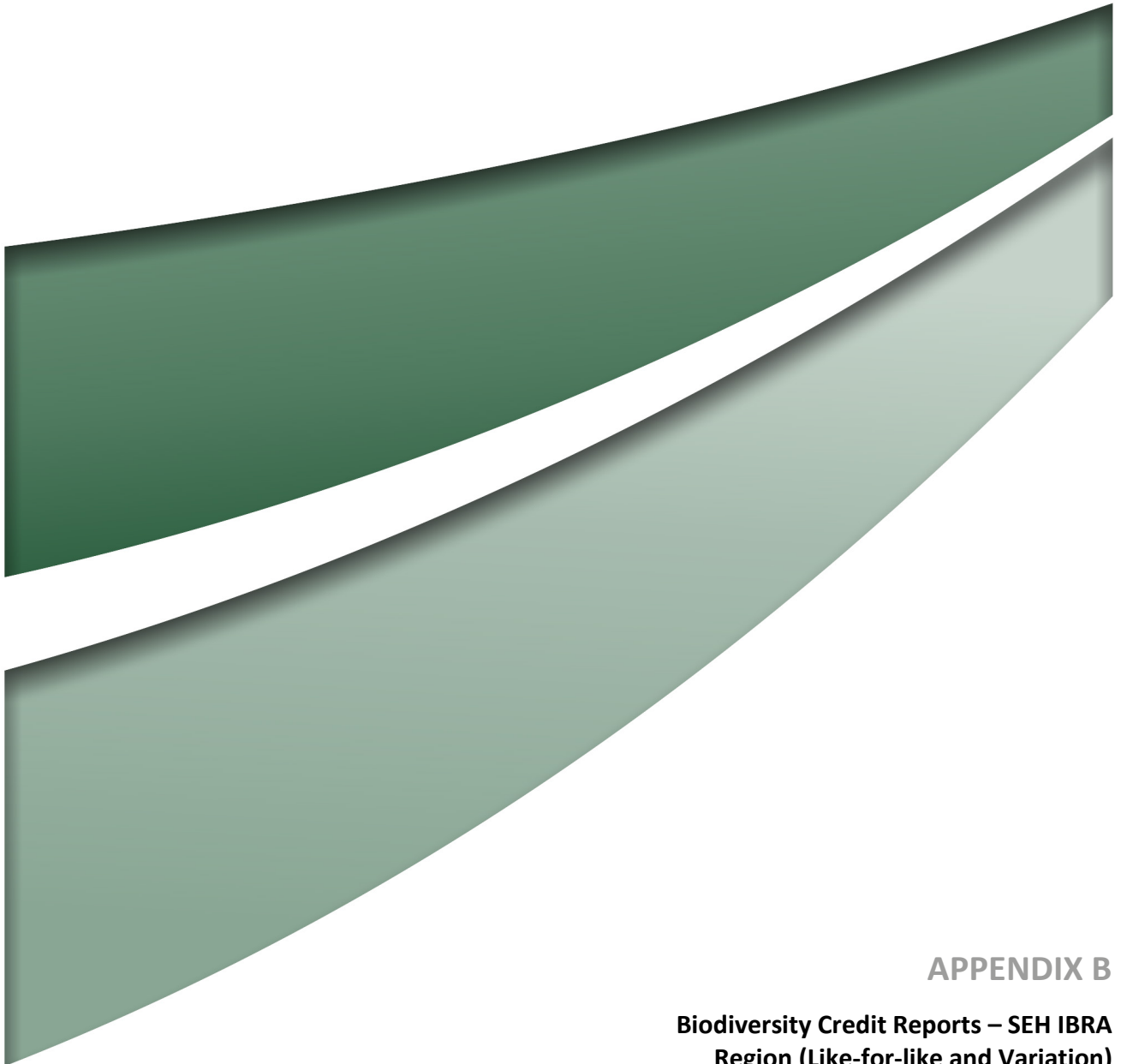
	Fauna	Vulnerable	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Petaurus norfolcensis/ Squirrel Glider	Spp		IBRA region
	Petaurus norfolcensis /Squirrel Glider		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

Polytelis swainsonii / Superb Parrot	Spp		IBRA region
	Polytelis swainsonii /Superb Parrot		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Synemon plana / Golden Sun Moth	Spp		IBRA region
	Synemon plana /Golden Sun Moth		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region

BAM Biodiversity Credit Report (Variations)

	Fauna	Endangered	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
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APPENDIX B

**Biodiversity Credit Reports – SEH IBRA
Region (Like-for-like and Variation)**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00010359/BAAS17068/18/00012903	Rye Park Development SEH IBRA	22/02/2021
Assessor Name	Assessor Number	BAM Data version *
Bill Wallach	BAAS17068	37
Proponent Names	Report Created	BAM Case Status
Tilt Renewables	19/03/2021	Open
Assessment Revision	Assessment Type	Date Finalised
8	Major Projects	To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box Yellow Box Blakely's Red Gum Woodland	Endangered Ecological Community	350-Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion
Species		
Synemon plana / Golden Sun Moth		

BAM Biodiversity Credit Report (Like for like)

Additional Information for Approval

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	0.8	0	13	13
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Not a TEC	137.6	1563	199	1762

BAM Biodiversity Credit Report (Like for like)

335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Inland Floodplain Swamps This includes PCT's: 66, 204, 205, 335, 360, 447, 465, 1291	Inland Floodplain Swamps >=70% and <90%	335_Moderate Good	No	13	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Moderate Good_Remnant	Yes	1025	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_DNG	Yes	447	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Moderate Good_Acacia	Yes	91	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Sifton	No	199	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Exotic	No	0	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	351_ModerateGood_Remnant, 350_Moderate	43.1	1434.00
Polytelis swainsonii / Superb Parrot	350_Moderate	10.2	271.00
Synemon plana / Golden Sun Moth	350_DNG, 351_DNG	27.6	489.00

Credit Retirement Options

Like-for-like credit retirement options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Biodiversity Credit Report (Like for like)

Polytelis swainsonii / Superb Parrot	Spp	IBRA subregion
	Polytelis swainsonii / Superb Parrot	Any in NSW
Synemon plana / Golden Sun Moth	Spp	IBRA subregion
	Synemon plana / Golden Sun Moth	Any in NSW

BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00010359/BAAS17068/18/00012903	Rye Park Development SEH IBRA	22/02/2021
Assessor Name	Assessor Number	BAM Data version *
Bill Wallach	BAAS17068	37
Proponent Name(s)	Report Created	BAM Case Status
Tilt Renewables	19/03/2021	Open
Assessment Revision	Assessment Type	Date Finalised
8	Major Projects	To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box Yellow Box Blakely's Red Gum Woodland	Endangered Ecological Community	350-Candlebark - Blakely's Red Gum - Long-leaved Box grassy woodland in the Rye Park to Yass region of the NSW South Western Slopes Bioregion and South Eastern Highland Bioregion
Species		
Synemon plana / Golden Sun Moth		

Additional Information for Approval

PCTs With Customized Benchmarks

PCT
No Changes

BAM Biodiversity Credit Report (Variations)

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Not a TEC	0.8	0	13	13.00
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Not a TEC	137.6	1563	199	1762.00

335-Tussock grass - sedgeland fen - rushland - reedland wetland in impeded creeks in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Inland Floodplain Swamps This includes PCT's: 66, 204, 205, 335, 360, 447, 465, 1291	Inland Floodplain Swamps >=70% and <90%	335_ModerateGood	No	13	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Variations)

	Freshwater Wetlands	Tier 2 or higher threat status	335_ModerateGood	No	13	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
351-Brittle Gum - Broad-leaved Peppermint - Red Stringybark open forest in the north-western part (Yass to Orange) of the South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_ModerateGood_Remnant	Yes	1025	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_DNG	Yes	447	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests $\geq 50\%$ and $< 70\%$	351_ModerateGood_Acacia	Yes	91	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Sifton	No	199	Murrumbateman,Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 349, 351, 352, 653, 701, 727, 728, 730, 888, 957, 1093, 1177	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	351_Exotic	No	0	Murrumbateman,Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region
	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Moder ateGood_R emnant	Yes (includi ng artificia l)	1025	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_DNG	Yes (includi ng artificia l)	447	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_ModerateGood_Acacia	Yes (including artificial)	91	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Sifton	No	199	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	351_Exotic	No	0	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	351_ModerateGood_Remnant, 350_Moderate	43.1	1434.00
Polytelis swainsonii / Superb Parrot	350_Moderate	10.2	271.00
Synemon plana / Golden Sun Moth	350_DNG, 351_DNG	27.6	489.00

Credit Retirement Options Like-for-like options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA region
	Petaurus norfolcensis /Squirrel Glider	Any in NSW
	Variation options	

BAM Biodiversity Credit Report (Variations)

	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Polytelis swainsonii/ Superb Parrot	Spp		IBRA region
	Polytelis swainsonii/Superb Parrot		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Synemon plana/ Golden Sun Moth	Spp		IBRA region

BAM Biodiversity Credit Report (Variations)

	Synemon plana/Golden Sun Moth		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Endangered	Murrumbateman, Bondo, Crookwell, Inland Slopes, Monaro, Murrumbateman and Snowy Mountains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.