

APPENDIX C BIODIVERSITY OFFSET STRATEGY

C.1 INTRODUCTION

This Biodiversity Offset Strategy (BOS) outlines a broad approach for meeting the offset requirements for the Wellington Solar Farm proposal in accordance with the NSW Framework for Biodiversity Assessment (FBA); the appropriate pathway for assessing biodiversity impacts for this project. The offset requirements for the proposal have been determined according to the FBA through the preparation of a Biodiversity Assessment Report (BAR) (NGH Environmental 2017b). These requirements are summarised in Section C.2 below.

Under Section 11.2 of the FBA, ecosystem and species credit requirements identified for the project can be offset in a number of ways, including:

- a) Retirement of biodiversity credits from the biodiversity register established under Part 7A of the TSC Act (which would include retiring credits via a BioBanking agreement)
- b) Ecological rehabilitation of previously mined land in accordance with Section 12.2 of the FBA
- c) Supplementary measures as determined in accordance with the NSW Biodiversity Offsets Policy for Major Projects (if appropriate offsets are not feasible, proponents can provide funds equivalent to those required to purchase biodiversity credits)
- d) A combination of the above.

Based on changes made to the project footprint (described in Section 3 of the Submission Report) the updated credit requirement is provided in Section C.2 below and the proposed strategy for meeting this requirement is detailed in Section C.3.

C.2 UPDATED CREDIT REQUIREMENT

C.2.1 Refinement of the indicative layout

Two vegetation communities occur onsite. Both belong to the White Box – Yellow Box – Blakely’s Red Gum Woodland Endangered Ecological Community (EEC). One patch meets the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act) criteria for a listed Critically Endangered Ecological Community (CEEC).

The indicative layout has been updated specifically to reduce impacts on significant vegetation, identified as high constraints. In response to OEH submission, this includes the area in the centre of the site that would meet the CEEC definition. The comparison of the native vegetation impacts presented in the EIS (and BAR) to the refined layout is provided in Table C-1. In summary:

- No CEEC would now be impacted (a reduction of approximately 2 ha).
- 8.48 ha less native vegetation in moderate to good and 1.35 ha in low condition would now be impacted.

Table C-1 Comparison of the native vegetation impacts presented in the EIS and those now proposed

PCT	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
266 White Box Grassy Woodland and derived native grassland			
Total:	8.57 (moderate to good condition) 135.34 (low condition)	0.09 (moderate to good condition) 134.04 (low condition)	-8.48 (moderate to good condition) -1.3 (low condition)
Amount that qualifies as CEEC:	2.08	0.00	-2.08
267 Blakely's Red Gum - Yellow Box grassy tall woodland			
Total:	0.32 (low condition)	0.27 (low condition)	-0.05 (low condition)
Amount that qualifies as CEEC:	0.00	0.00	0.00

C.2.2 Requirement to offset

Clearing of EEC (and CEEC) or threatened species habitat with site value scores equal to or greater than 17 generates an offset requirement for the project. No threatened species credits for species credit species are generated.

The proposed layout has been redesigned to avoid all impacts to zones generating offsets where possible. The has resulted in small residual areas that are mostly due to cable routes where impacts to native dominated areas cannot be avoided. The comparison of the native vegetation zones that generated offsets in the EIS (and BAR) to the refined layout is provided in Table C-2.

Table C-2 Comparison of the zones generating offsets presented in the EIS and those now proposed

Zone ID	Vegetation zones	Condition class	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
2.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good Other (Planted Vegetation)	0.90	0.00	-0.90
4.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate – good	1.81	0.06	-1.75
5.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Derived Grassland – Moderate to Good	5.86	0.03	-5.83

Zone ID	Vegetation zones	Condition class	Impacted area from EIS (ha)	Revised impact area now proposed (ha)	Net (ha)
Total			8.57	0.09	-8.48

C.2.3 Updated FBA credit calculations

The BAR determined that a total of 203 ecosystem credits were required to be offset for the development (BioBanking Credit Calculator (BCC) Major Project 144/2017/4350MP Version 2). The BCC full credit report for the development site was provided as Appendix E of the BAR (NGH Environmental 2017b).

The impact areas were updated consistent with Table C-2 above. No other changes were warranted to the calculations. The updated offset requirement is 3 ecosystem credits, a reduction of credits, as detailed in Table C-3. The credit report produced by the BCC is provided below in Section C.4.

Table C-3 Updated credit requirement

Zone ID	Vegetation zones	Condition class	Credits required in BDAR	Revised credit requirement now proposed	Net
2.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good Other (Planted Vegetation)	26	0	-26
4.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Moderate – good	56	2	-54
5.	PCT #266 BVT CW216 White Box Grassy Woodland in the Upper Slopes sub-region of the NSW South Western Slopes Bioregion	Derived Grassland – Moderate to Good	121	1	-120
Total			203	3	-200

C.3 STRATEGY TO RETIRE CREDITS

Considering the options set out in Section C.1, *Option a) Retiring credits via a BioBanking agreement established within the solar farm site*, would have been the preferred approach to retire the required credits. However, given the very low credit requirement of the revised project design (3 ecosystem credits), the establishment of physical offsets to meet this requirement is not considered practical. The small size of an offset site generating 3 would be fragmented, subject to edge effects and unlikely to improve in biodiversity value. As such, retirement of the 3 biodiversity credits from the biodiversity register

established under Part 7A of the TSC Act is preferred. No onsite offsets or enhancement of existing vegetation is proposed.

When the NSW biodiversity offsets policy for major projects was developed, it was recognised that it should be supported by an offsets fund. The fund would allow proponents to meet their offset requirement through a payment into the fund, if they choose. The fund would then buy the required offsets instead of the proponent. This increases certainty for proponents and allows a more strategic approach to finding and buying offsets. Payment into the fund would be considered a 'supplementary measure' under Section 11.2 of the FBA.

This fund has now been established under the NSW Biodiversity Offsets Scheme as detailed by the NSW *Biodiversity Conservation Act 2016* (BC Act), as the Biodiversity Conservation Trust Fund (BCTF). If credits are not able to be retired through purchasing them from the biodiversity register (or equivalent under the new legislation), then the preferred approach would be to make a payment into the BCTF. The amount to be paid into the BCTF would be calculated using the NSW OEH Offsets Payment Calculator with a conversion factor applied on the FBA credit requirement (to convert to the equivalent credit number under the new scheme to be determined in consultation with OEH).

Note: No Rehabilitation on land identified for rehabilitation or supplementary measures as defined in the NSW Biodiversity Offsets Policy for Major Projects are proposed as part of this BOS.

C.4 CONCLUSION

The proposed layout has been redesigned to avoid all impacts to zones generating offsets, where possible. The has resulted in small residual areas that are mostly due to cable routes where impacts to native dominated areas cannot be avoided. In summary:

- No CEEC would now be impacted (a reduction of approximately 2 ha).
- 8.48 ha less native vegetation in moderate to good and 1.35 ha in low condition would now be impacted.
- A credit requirement of 3 biodiversity credits is generated by the proposal.

Retirement of the 3 biodiversity credits from the biodiversity register established under Part 7A of the TSC Act is preferred. No onsite offsets or enhancement of existing vegetation is proposed.

C.5 BIOBANKING CREDIT CALCULATOR CREDIT REPORT FOR THE REVISED LAYOUT

Biodiversity credit report



This report identifies the number and type of biodiversity credits required for a major project.

Date of report: 8/03/2018

Time: 5:03:41PM

Calculator version: v4.0

Major Project details

Proposal ID: 144/2017/4350MP
Proposal name: Wellington Solar Farm
Proposal address: Goolma Road Wellington NSW 2820

Proponent name: First Solar (Australia) Pty Ltd
Proponent address: Level 3 16 Spring Street Sydney NSW 2000
Proponent phone: 02 9002 7710

Assessor name: Dave Maynard
Assessor address: PO Box 470 Bega NSW 2550
Assessor phone: (02) 64928311
Assessor accreditation: 144

Summary of ecosystem credits required

Plant Community type	Area (ha)	Credits created
Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	0.27	0.00
White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	134.13	3.00
Total	134.40	3

Credit profiles

1. Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, (CW112)

Number of ecosystem credits created

0

IBRA sub-region

Upper Slopes - Central West

Offset options - Plant Community types	Offset options - IBRA sub-regions
<p>Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, (CW112)</p> <p>Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion, (CW138)</p> <p>White Box grassy woodland of the Nandewar Bioregion and Brigalow Belt South Bioregion, (CW215)</p> <p>White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion, (CW216)</p> <p>Red Box - White Box +/- Red Stringybark hill woodland in the NSW South Western Slopes Bioregion, (CW280)</p>	<p>Upper Slopes - Central West and any IBRA subregion that adjoins the IBRA subregion in which the development occurs</p>

2. White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion, (CW216)

Number of ecosystem credits created

0

IBRA sub-region

Upper Slopes - Central West

Offset options - Plant Community types	Offset options - IBRA sub-regions
<p>White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion, (CW216)</p> <p>Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, (CW112)</p> <p>Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion, (CW138)</p> <p>White Box grassy woodland of the Nandewar Bioregion and Brigalow Belt South Bioregion, (CW215)</p> <p>Red Box - White Box +/- Red Stringybark hill woodland in the NSW South Western Slopes Bioregion, (CW280)</p>	<p>Upper Slopes - Central West and any IBRA subregion that adjoins the IBRA subregion in which the development occurs</p>

3. White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion, (CW216)

Number of ecosystem credits created

3

IBRA sub-region

Upper Slopes - Central West

Offset options - Plant Community types	Offset options - IBRA sub-regions
<p>White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion, (CW216)</p> <p>Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, (CW112)</p> <p>Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion, (CW138)</p> <p>White Box grassy woodland of the Nandewar Bioregion and Brigalow Belt South Bioregion, (CW215)</p> <p>Red Box - White Box +/- Red Stringybark hill woodland in the NSW South Western Slopes Bioregion, (CW280)</p>	<p>Upper Slopes - Central West and any IBRA subregion that adjoins the IBRA subregion in which the development occurs</p>

Summary of species credits required

BioBanking Credit Calculator

Ecosystem credits

Proposal ID : 144/2017/4350MP
 Proposal name : Wellington Solar Farm
 Assessor name : Dave Maynard
 Assessor accreditation number : 144
 Tool version : v4.0
 Report created : 08/03/2018 17:01

Assessment circle name	Landsc ape score	Vegetation zone name	Vegetation type name	Condition	Red Management flag zone name status	Management zone area	Current site value	Future site value	Loss in site value	Credit required for bio diversity	Credit required for TS	TS with highest credit requirement	Average species loss	Species TG Value	Final credit requirement for management zone
Circle 1	12.80	CW112_Low	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Low	No	1	0.27	14.00	0.00	14.00	4	0	0.00	0.00	0
Circle 1	12.80	CW216_Low	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Low	No	3	1.98	8.67	0.00	8.67	19	0	0.00	0.00	0
Circle 1	12.80	CW216_Moderate/Good	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good	Yes	4	0.06	36.67	0.00	36.67	2	2 Speckled Warbler	33.33	2.60	2
Circle 1	12.80	CW216_Moderate/Good_Derived grassland	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good_Derived grassland	No	5	0.03	26.00	0.00	26.00	1	1 Speckled Warbler	38.89	2.60	1
Circle 1	12.80	CW216_Moderate/Good_Poor	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Moderate/Good_Poor	No	6	132.06	10.67	0.00	10.67	0	1,479 Masked Owl	33.33	3.00	0

BioBanking Credit Calculator

Species credits

Proposal ID :
Proposal name :
Assessor name :
Assessor accreditation number :
Tool version : v4.0
Report created : 08/03/2018 17:01

Scientific name	Common name	Species TG value	Identified population?	Can Id. popn. be offset?	Area / Negligible number of loss	Red flag status	Number of credits
No							