



Department of Planning, Housing and Infrastructure
Locked Bag 5022
PARRAMATTA NSW 2124

Attention: Mr James Bellamy

Dear Mr Bellamy

Re: Request for Input to Planning Secretary's Environmental Assessment Requirements – Environmental Impact Statement – Texas Solar Farm (SSD - 68928973)

Thank you for the notification in the planning portal on 5 April 2024 inviting input to the preparation of Secretary's Environmental Assessment Requirements (SEARs) for the Texas Solar Farm project from the Biodiversity, Conservation and Science Group (BCS) of the Department of Climate Change, Energy, the Environment and Water for the preparation of an Environmental Impact Statement (EIS). I appreciate the opportunity to provide advice.

We note the project will be assessed as State Significant Development in accordance with Part 4 Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The environmental assessment requirements (EARs) provided by BCS for the EIS are limited to biodiversity and flooding.

BCS anticipates the EIS will be sufficiently comprehensive to enable unambiguous determination of the extent of the direct and indirect impact(s) of the project, particularly on threatened species known to occur in the locality including:

- native milkwort (*Polygala linariifolia*)
- wild orange (*Capparis canescens*)
- koala (*Phascolarctos cinereus*).

The project area is likely to contain woodland threatened ecological communities (TECs). We expect the EIS will map the extents of these woodland TECs in accordance with the North East Branch Principles set out in our project-specific EARs.

We consider this information is necessary to assess an EIS for the project.

The full list of our standard EARs that may need to be addressed in the EIS are provided in **Attachment A**. Our project-specific EARs that must be addressed in the EIS are provided in **Attachment B**. In preparing the EIS, the proponent can refer to the relevant guidance material listed in **Attachment C**.

If you have any further questions about this issue, please contact Mr Don Owner, Senior Conservation Planning Officer North East, Biodiversity, Conservation and Science Group, on 6658 8239 or at don.owner@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'M Giese', with a stylized, cursive script.

MELISSA GIESE
A/Director North East
Biodiversity, Conservation and Science

15 April 2024

Enclosures:

Attachment A – DCCEEW BCS Standard EARs (SSD - 68928973)

Attachment B – DCCEEW BCS Project-specific EARs (SSD - 68928973)

Attachment C – EIS Guidance Material (SSD - 68928973).

Attachment A – DCCEEW Biodiversity, Conservation and Science Group Standard Environmental Assessment Requirements (EARs) (SSD - 68928973)

Biodiversity
1. The EIS must assess biodiversity impacts related to the project in accordance with Section 7.9 of the Biodiversity Conservation Act 2017 using the Biodiversity Assessment Method (BAM) and must document this assessment in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the <i>Biodiversity Conservation Act 2016</i> (s6.12), <i>Biodiversity Conservation Regulation 2017</i> (s6.8) and the BAM, unless the Biodiversity and Conservation Division and Planning and Assessment Group determine that the project is not likely to have any significant impacts on biodiversity values.
2. The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM.
3. The BDAR must include details of the measures proposed to address the offset obligation as follows: • The total number and classes of biodiversity credits required to be retired for the project; • The number and classes of like-for-like biodiversity credits proposed to be retired; • The number and classes of biodiversity credits proposed to be retired in accordance with the variation rules; • Any proposal to fund a biodiversity conservation action; • Any proposal to conduct ecological rehabilitation (if a mining project); • Any proposal to make a payment to the Biodiversity Conservation Fund. If seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits.
4. The BDAR must be submitted with all spatial data associated with the survey and assessment as per Appendix 11 of the BAM.
5. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the <i>Biodiversity Conservation Act 2016</i>.
Water and soils
6. The EIS must map the following features relevant to water and soils including: a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in s4.2 of the BAM). c. Wetlands as described in s4.2 of the BAM. d. Groundwater. e. Groundwater dependent ecosystems. f. Proposed intake and discharge locations.
7. The EIS must describe background conditions for any water resource likely to be affected by the project, including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.

c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government. e. Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions http://www.environment.nsw.gov.au/research-and-publications/publications-search/risk-based-framework-for-considering-waterway-health-outcomes-in-strategic-land-use-planning
8. The EIS must assess the impacts of the project on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the project protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality. c. Consistency with any relevant certified Coastal Management Program (or Coastal Zone Management Plan)
9. The EIS must assess the impact of the project on hydrology, including: a. Water balance including quantity, quality and source. b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas. c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems. d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches). e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water. f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options. g. Identification of proposed monitoring of hydrological attributes.
Flooding and coastal processes and associated hazards
10. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including: a. Flood prone land. b. Flood planning area, the area below the flood planning level. c. Hydraulic categorisation (floodways and flood storage areas). d. Flood hazard

11. The EIS must describe flood assessment and modelling undertaken in determining the project's design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP, flood levels and the probable maximum flood, or an equivalent extreme event.
12. The EIS must model the effect of the project (including fill) on the current flood behaviour for a range of design events as identified in 11 above including the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.
13. Modelling in the EIS must consider and document: a. Existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies. b. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood, or an equivalent extreme flood. c. Impacts of the project on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazard categories and hydraulic categories. d. Relevant provisions of the NSW Floodplain Development Manual 2005.
14. The EIS must assess the impacts of the project on flood behaviour, including: a. Whether there will be detrimental increases in the potential flood affection of other properties, assets, and infrastructure. b. Consistency with Council floodplain risk management plans. c. Consistency with any Rural Floodplain Management Plans. d. Compatibility with the flood hazard of the land. e. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land. f. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site. g. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses. h. Any impacts the project may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the NSW SES and Council. i. Whether the project incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the NSW SES and Council. j. Emergency management, evacuation and access, and contingency measures for the project considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the NSW SES. k. Any impacts the project may have on the social and economic costs to the community as consequence of flooding.

Attachment B - DCCEEW Biodiversity, Conservation and Science Group - Project-specific Environmental Assessment Requirements (SSD - 68928973)

Biodiversity

Principles for Mapping the Extent of Woodland Critically Endangered and Endangered Ecological Communities

Introduction

The NSW Threatened Species Scientific Committee's final determinations for woodland endangered ecological communities (EECs) must be considered when preparing vegetation maps for impact assessments. The determination for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland states it covers all occurrences of this ecological community independent of their condition and the determination for Ribbon Gum - Mountain Gum - Snow Gum Grassy Forest/Woodland describes the ecological community in several condition states. Hence, vegetation mapping must ensure that all condition states referenced in these determinations are mapped appropriately.

The Biodiversity and Conservation Division (BCD) North East Branch has prepared these guidelines to assist proponents and their consultant ecologists with identifying, describing, and mapping the extent of these EECs in accordance with those final determinations.

Underpinning Considerations from Hnatiuk et al. (2009) (see Tables 6 and 7 below)

1. Open Forest has crowns touching or slightly separated – up to 0.25 crown widths apart.
2. Woodland has crowns clearly separated – up to one crown width apart.
3. Open Woodland has crowns well separated – up to 20 crown widths apart.
4. Isolated trees - more than 20 crown widths apart.

Table 6: Visual estimation of crown cover class

Code	Criteria assessed in field	Described as	Crown separation ratio	Crown cover %	Foliage cover %
D	Crowns touching to overlapping	Closed or dense	<0	>80%	>70%
M	Crowns touching or slightly separated	Mid-dense	0–0.25	50–80%	30–70%
S	Crowns clearly separated	Sparse or open	0.25–1	20–50%	10–30%
V	Crowns well separated	Very sparse	1–20	0.25–20%	0.2–10%
I	Isolated plants; for trees about 100 metres apart, shrubs about 20 m apart	Isolated plants	>20	<0.25%	<0.20%
L	Isolated clumps of 2 to many plants about 200 metres apart	Isolated clumps	>20	<0.25%	<0.20%
E	Emergent	Emergents	>3	<5% of total crown cover	<3% of total foliage cover

Table 7: Converting crown separation ratio to crown cover

	Overlap													Touching													Crowns separate												
Crown separation ratio	-0.1	-0.05	-0.02	0	.05	0.1	0.15	0.2	0.25	0.3	0.4	0.5	0.6	0.75	1.0	1.25	1.5	2.0	3.0	4.0	8.0	10	15	20	30														
Percentage crown cover (%)	100	89	84	81	73	67	60	56	52	48	41	34	31	26	20	16	13	9	5	3	1	0.6	0.3	0.2	0.1														

Principles for Mapping the Extent of White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC)

- based on NSW Scientific Committee Final Determination
- can be a woodland, open woodland or derived native grassland
- open woodland tree crown separation is based on the definition of scattered trees in Appendix B of the Biodiversity Assessment Method 2020 (i.e. scattered trees are more than 50 metres apart)

1. Woodland Form (trees up to one average crown width apart)

- a. For areas with tree crowns up to one average crown width apart, map all the following as CEEC - the outer edges of tree crowns up to one average crown width apart (including those of regenerating canopy trees) plus a buffer with a width of one average crown width from the outer edges of those tree crowns, noting that there can be exotic or native understorey and/or groundcover, or bare earth, within each mapped polygon.
- b. For areas with tree crowns more than one average crown width apart, follow the open woodland form procedures in 2 below.

2. Open Woodland Form (trees more than one average crown width apart and up to 50 metres apart)

- a. For areas with tree crowns more than one average crown width apart and up to 50 metres apart, map all the following as CEEC - the outer edges of tree crowns more than one average crown width apart and up to 50 metres apart (including those of regenerating canopy trees) plus a buffer with a width of 50 metres from the outer edges of those tree crowns, noting that there can be exotic or native understorey and/or groundcover, or bare earth, within each mapped polygon.
- b. For areas with tree crowns more than 50 metres apart, map all the following as CEEC - the outer edges of each tree crown more than 50 metres apart, including those of regenerating canopy trees.

3. Treeless Form

- a. For areas beyond the buffers in 1a and 2a above, or beyond the tree crowns in 2b above, or areas with no canopy trees or regenerating canopy trees, map all the following as CEEC - areas of understorey and/or groundcover containing native species.

Principles for Mapping the Extent of Ribbon Gum - Mountain Gum - Snow Gum Grassy Forest/Woodland Endangered Ecological Community (EEC)

- based on NSW Scientific Committee Final Determination
- can be an open forest, woodland or derived native grassland
- woodland tree average crown separation is used to define scattered trees (i.e. scattered trees are more than one average crown width apart)

1. Open Forest Form (trees up to 0.25 average crown widths apart)

- a. For areas with tree crowns up to 0.25 average crown widths apart, map all the following as EEC - the outer edges of tree crowns up to 0.25 average crown widths apart (including those of regenerating canopy trees) plus a buffer with a width of 0.25 average crown widths to the outer edges of those tree crowns, noting there can be exotic or native understorey and/or groundcover, or bare earth, within each mapped polygon.
- b. For areas with tree crowns more than 0.25 average crown widths apart, follow the woodland form procedures in 2 below.

2. Woodland Form (trees more than 0.25 average crown widths apart and up to one average crown width apart)

- a. For areas with tree crowns more than 0.25 average crown widths apart and up to one average crown width apart, map all of the following as EEC - the outer edges of tree crowns more than 0.25 average crown widths apart and up to one average crown width apart (including those of regenerating canopy trees) plus a buffer with a width of one average crown width to the outer edges of those tree crowns, noting there can be exotic or native understorey and/or groundcover, or bare earth, within each mapped polygon.
- b. For areas with tree crowns more than one average crown width apart, map all the following as EEC - the outer edges of each tree crown more than one average crown width apart, including those of regenerating canopy trees.

3. Treeless Form

- a. For areas beyond the buffers in 1a and 2a above, or beyond the tree crowns in 2b above, or areas with no canopy trees or regenerating canopy trees, map all the following as EEC – areas of understorey and/or groundcover containing native species.

Attachment C – EIS Guidance Material (SSD - 68928973)

Title	Web address
<u>Relevant Legislation</u>	
<i>Biodiversity Conservation Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/63/full
<i>Coastal Management Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/20/full
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
<u>Biodiversity</u>	
Biodiversity Assessment Method (DPIE, 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-assessment-method-2020
Biodiversity Development Assessment Report	https://www.legislation.nsw.gov.au/#/view/act/2016/63/part6/div3/sec6.12
Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH, 2017)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/guidance-decision-makers-determine-serious-irreversible-impact-190511.pdf
Accreditation Scheme for Application of the Biodiversity Assessment Method Order 2017	https://www.legislation.nsw.gov.au/regulations/2017-471.pdf
Biodiversity conservation actions	https://www.environment.nsw.gov.au/research-and-publications/publications-search/ancillary-rules-biodiversity-conservation-actions
Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules	https://www.environment.nsw.gov.au/research-and-publications/publications-search/ancillary-rules-reasonable-steps-to-seek-like-for-like-biodiversity-credits
Threatened Species Website	www.environment.nsw.gov.au/threatenedspecies/
NSW BioNet (Atlas of NSW Wildlife)	www.bionet.nsw.gov.au/
NSW guide to surveying threatened plants (OEH 2016)	www.environment.nsw.gov.au/resources/threatenedspecies/160129-threatened-plants-survey-guide.pdf

Title	Web address
Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/surveying-threatened-plants-and-their-habitats-survey-guide-for-the-biodiversity-assessment-method
Threatened biodiversity survey and assessment - Guidelines for developments and activities (2004 working draft)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/threatened-biodiversity-survey-and-assessment
Field survey methods for environmental consultants and surveyors when assessing proposed developments or other activities on sites containing threatened species (OEH undated)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/field-survey-method-guidelines.pdf
NSW Survey Guide for Threatened Frogs (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/nsw-survey-guide-for-threatened-frogs
Koala (<i>Phascolarctos cinereus</i>) Biodiversity Assessment Method Survey Guide (DPE 2022)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/koala-phascolarctos-cinereus-biodiversity-assessment-method-survey-guide-220249.pdf
'Species credit' threatened bats and their habitats (OEH 2018)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/species-credit-threatened-bats-survey-guide-180466.pdf
BioNet Vegetation Classification - NSW Plant Community Type (PCT) database	www.environment.nsw.gov.au/research/Vegetationinformationssystem.htm
Threatened Reptiles Biodiversity Assessment Method survey guide (DPE 2022)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/threatened-reptiles-biodiversity-assessment-method-survey-guide-20220563.pdf
SEED Data Portal (access to online spatial data)	http://data.environment.nsw.gov.au/
Department of Primary Industry Policy and guidelines for fish habitat conservation and management (update 2013)	https://www.dpi.nsw.gov.au/fishing/habitat/publications/pubs/fish-habitat-conservation
NPWS Estate	
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, recategorisation and road adjustment policy (OEH, 2012)	https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-policies/revocation-recategorisation-and-road-adjustment

Title	Web address
Developments adjacent to National Parks and Wildlife Service lands Guidelines for consent and planning authorities (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/developments-adjacent-to-national-parks-and-wildlife-service-lands
<u>Acid sulfate soils</u>	
Acid Sulfate Soils Planning Maps	http://data.nsw.gov.au/data/
Acid Sulfate Soils Manual (Stone et al. 1998)	http://www.environment.nsw.gov.au/resources/epa/Acid-Sulfate-Manual-1998.pdf
National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT. (Sullivan, L, Ward, N, Toppler, N and Lancaster, G. 2018a).	https://www.waterquality.gov.au/sites/default/files/documents/dewatering-acid-sulfate-soils.pdf
National Acid Sulfate Soils guidance: National acid sulfate soils sampling and identification methods manual, Department of Agriculture and Water Resources, Canberra ACT. (Sullivan, L, Ward, N, Toppler, N and Lancaster, G. 2018b).	https://www.scu.edu.au/media/scueduau/eal/documents/National-acid-sulfate-soils-sampling-and-indentification-methods-manual.pdf
National Acid Sulfate soils Guidance: Overview and management of monosulfidic black ooze (MBO) accumulations in waterways and wetlands, Department of Agriculture and Water Resources, Canberra ACT. (Sullivan, LA, Ward, NJ, Bush, RT, Toppler, NR, Choppala, G. 2018c)	https://www.scu.edu.au/media/scueduau/eal/documents/Overview-and-management-of-monosulfidic-black-ooze-MBO-accumulations-in-waterways-and-wetlands.pdf
National Acid sulfate soils guidance: Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management, Department of Agriculture and Water Resources, Canberra, ACT (Simpson, SL, Mosley, L, Batley, GE and Shand P. 2018).	https://www.waterquality.gov.au/sites/default/files/documents/dredging-sediments-spoil.pdf
National Acid Sulfate Soils Guidance: Guidance for the dewatering of acid sulfate soils in shallow groundwater environments, Department of Agriculture and Water Resources, Canberra, ACT. (Shand, P, Appleyard, S, Simpson, SL, Degens, B, Mosley, LM 2018)	https://www.waterquality.gov.au/sites/default/files/documents/dewatering-acid-sulfate-soils.pdf
<u>Flooding, Stormwater and Coastal Processes and Associated Hazards</u>	
Reforms to coastal erosion management	http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm

Title	Web address
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	http://climatechange.environment.nsw.gov.au/
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
<u>Water</u>	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australia-n-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf