

Sapphire Solar Farm

Environmental Impact Statement



Volume 3 - Appendices

Appendix A

Secretary's Environmental Assessment Requirements, Controlled Action Decision and Revised Secretary's Environmental Assessment Requirements



Planning & Environment

Planning Services

Resource and Energy Assessments

Contact: Tim Stuckey

Phone: (02) 9274 6319

Email: Tim.stuckey@planning.nsw.gov.au

Ed Mounsey
Head of Development
CWP Solar Pty Ltd
PO Box 1708
Newcastle NSW 2300

Dear Mr Mounsey

Sapphire Solar (SSD 8643) Environmental Assessment Requirements

I have attached the Environmental Assessment Requirements for the preparation of an Environmental Impact Statement (EIS) for the Sapphire Solar project.

The requirements are based on the information you have provided to date, and have been prepared in consultation with the relevant government agencies. The agencies comments are attached for your information (see Attachment 2).

Please note that the Department may alter these requirements at any time, and that you must consult further with the Department if you do not lodge a development application and EIS for the project within the next two years.

If your proposal contains any actions that could have a significant impact on matters of National Environmental Significance, then it will also require approval under the Commonwealth's *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).

This approval is in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Department of the Environment in Canberra (6274 1111 or www.environment.gov.au).

Also, if it is your intention to include a subdivision as part of your application, you must include a formal request for a subdivision certificate (including the supporting information required) compliant with the requirements of section 157 of the *Environmental Planning and Assessment Regulation 2000*.

Please contact the Department at least two weeks before you plan to submit the development application and EIS for the project. This will enable the Department to:

- confirm the applicable fee (see Division 1AA, Part 15 of the *Environmental Planning and Assessment Regulation 2000*); and
- determine the required number of copies of the EIS.

It is important for you to recognise that the Department will review the EIS for the project before putting it on public exhibition. If it fails to adequately address these requirements, you will be required to submit an amended EIS.

Yours sincerely

23/8/17

Clay Preshaw

Director

Resource and Energy Assessments

as nominee of the Secretary

Environmental Assessment Requirements

State Significant Development

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

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| Application Number | SSD 8643 |
| Proposal | <p>Sapphire Solar Farm which includes:</p> <ul style="list-style-type: none">• the construction and operation of a photovoltaic generation facility with an estimated capacity of approximately 200 MW; and• development of associated infrastructure, including grid connection and battery storage. |
| Location | 30 km east of Inverell |
| Applicant | Sapphire Solar Farm Pty Ltd |
| Date of Issue | 23 August 2017 |
| General Requirements | <p>The Environmental Impact Statement (EIS) for the development must comply with the requirements in Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none">• a stand-alone executive summary;• a full description of the development, including:<ul style="list-style-type: none">– details of construction, operation and decommissioning;– a site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process);– a detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development;• a strategic justification of the development focusing on site selection and the suitability of the proposed site;• an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including:<ul style="list-style-type: none">– a description of the existing environment likely to be affected by the development;– an assessment of the likely impacts of all stages of the development (which is commensurate with the level of impact), taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice;– a description of the measures that would be implemented to avoid, mitigate and/or offset the impacts of the development (including draft management plans for specific issues as identified below); and– a description of the measures that would be implemented to monitor and report on the environmental performance of the development;• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and• the reasons why the development should be approved having regard to:<ul style="list-style-type: none">– relevant matters for consideration under the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development;– the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and– feasible alternatives to the development (and its key components), including the consequences of not carrying out the development. |

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| | <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by:</p> <ul style="list-style-type: none"> • a signed report from a suitably qualified person that includes an accurate estimate of the capital investment value of the development (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>), including details of all the assumptions and components from which the capital investment value calculation is derived; and • the consent in writing of the owner of the land (as required in clause 49(1)(b) of the <i>Environmental Planning and Assessment Regulation 2000</i>). |
| Specific Issues | <p>The EIS must address the following specific issues:</p> <ul style="list-style-type: none"> • Biodiversity – including an assessment of the likely biodiversity impacts of the development (including but not limited to the impacts on Box Gum Woodland and Derived Native Grassland and Ribbon Gum Mountain Gum Snow Gum Grassy Open Forest / Woodland Endangered Ecological Communities) having regard to the <i>NSW Biodiversity Offsets Policy for Major Projects</i>, and in accordance with the <i>Framework for Biodiversity Assessment</i>, unless otherwise agreed by the Department, and an assessment of the likely impacts to the aquatic ecology of waterways (including but not limited to Kings Plain Creek, Mary Anne Creek, Frazers Creek, Horse Gully and Apple Tree Gully); • Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including adequate consultation with the local Aboriginal community; • Land – including an assessment of the impact of the development on agricultural land and flood prone land, a soil survey to consider the potential for erosion to occur, and paying particular attention to the compatibility of the development with the existing land uses on the site and adjacent land (e.g. operating mines, extractive industries, mineral or petroleum resources, exploration activities, aerial spraying, dust generation, and risk of weed and pest infestation) during operation and after decommissioning, with reference to the zoning provisions applying to the land; • Visual – including an assessment of the likely visual impacts of the development (including any glare, reflectivity and night lighting) on surrounding residences, scenic or significant vistas, air traffic and road corridors in the public domain, including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners; • Noise – including an assessment of the construction noise impacts of the development in accordance with the <i>Interim Construction Noise Guideline</i> (ICNG) and operational noise impacts in accordance with the <i>NSW Industrial Noise Policy</i> (INP), and a draft noise management plan if the assessment shows construction noise is likely to exceed applicable criteria; • Transport – including an assessment of the site access route, site access point and likely transport impacts (including peak and average traffic generation) of the development on the capacity and condition of roads (including on any Crown land), a description of the measures that would be implemented to mitigate any impacts during construction, and a description of any proposed road upgrades developed in consultation with the relevant road authorities (if required); • Water –including: <ul style="list-style-type: none"> – an assessment of the likely impacts of the development (including flooding) on surface water (including Kings Plain Creek, Mary Anne Creek, Frazers Creek, Horse Gully and Apple Tree Gully and riparian land) and groundwater resources, wetlands, riparian land, groundwater dependent ecosystems, aquatic ecology, and acid sulfate soils), related |

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| | <p>infrastructure, adjacent licensed water users and basic landholder rights, and measures proposed to monitor, reduce and mitigate these impacts;</p> <ul style="list-style-type: none"> – details of water requirements and supply arrangements for construction and operation; and – a description of the erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with <i>Managing Urban Stormwater: Soils & Construction</i> (Landcom 2004); <ul style="list-style-type: none"> • Hazards and Risks – including: <ul style="list-style-type: none"> – a preliminary risk screening in accordance with <i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33</i> (DoP, 2011), and if the preliminary risk screening indicates the development is “potentially hazardous”, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with <i>Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis</i> (DoP, 2011) and <i>Multi-Level Risk Assessment</i> (DoP, 2011); and – an assessment of all potential hazards and risks including but not limited to bushfires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure; • Socio-Economic – including an assessment of the likely impacts on the local community and a consideration of the construction workforce accommodation; and • Cumulative Impacts – an assessment of the cumulative impacts with the Sapphire Wind Farm, White Rock Wind Farm, White Rock Solar Farm and Glenn Innes Wind Farm. |
| Consultation | <p>During the preparation of the EIS, you should consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups, affected landowners, exploration licence holders, quarry operators and mineral title holders.</p> <p>In particular, you must undertake detailed consultation with affected landowners surrounding the development and Inverell Shire Council.</p> <p>The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.</p> |
| Further consultation after 2 years | <p>If you do not lodge a development application and EIS for the development within 2 years of the issue date of these Environmental Assessment Requirements, you must consult further with the Secretary in relation to the preparation of the EIS.</p> |

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

| Biodiversity | |
|------------------------------|--|
| | Framework for Biodiversity Assessment (OEH) |
| | NSW Biodiversity Offsets Policy for Major Projects (OEH) |
| | Threatened Species Assessment Guidelines - Assessment of Significance (OEH) |
| | Biosecurity Act 2015 |
| | Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (DPI) |
| | Policy and Guidelines for Fish Habitat Conservation and Management (DPI) |
| Heritage | |
| | Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH) |
| | Code of Practice for Archaeological Investigations of Objects in NSW (OEH) |
| | Guide to investigating, assessing and reporting on aboriginal cultural heritage in NSW (OEH). |
| | NSW Heritage Manual (OEH) |
| | Heritage Council of NSW - Archaeological Assessments 1996 |
| | Heritage Council of NSW - Assessing significance for historical archaeological sites and relics 2009 |
| | Heritage Council of NSW - Criteria for the Assessment of Excavation Directors. Updated 2011 |
| Land | |
| | Primefact 1063: Infrastructure proposals on rural land (DPI) |
| | Establishing the social licence to operate large scale solar facilities in Australia: insights from social research for industry (ARENA) |
| | Local Land Services Act 2013 |
| | Australian Soil and Land Survey Handbook (CSIRO) |
| | Guidelines for Surveying Soil and Land Resources (CSIRO) |
| | The land and soil capability assessment scheme: second approximation (OEH) |
| Noise | |
| | NSW Industrial Noise Policy (EPA) |
| | Interim Construction Noise Guideline (EPA) |
| | NSW Road Noise Policy (EPA) |
| Transport | |
| | Guide to Traffic Generating Developments (RTA) |
| | Road Design Guide (RMS) & relevant Austroads Standards |
| | Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development |
| Water | |
| | Managing Urban Stormwater: Soils & Construction (Landcom) |
| | Floodplain Development Manual (OEH) |
| | Guidelines for Controlled Activities on Waterfront Land (DPI Water) |
| | Water Sharing Plans (DPI Water) |
| | Floodplain Management Plan (DPI Water) |
| | Guidelines for Watercourse Crossings on Waterfront Land (DPI Water) |
| Waste | |
| | Waste Classification Guidelines (EPA) |
| Electromagnetic Interference | |
| | ICNIRP Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields |
| Hazards and Risk | |
| | Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis |

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| Multi-Level Risk Assessment (DPE) |
| Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (ICNIRP) |
| Environmental Planning Instruments |
| State Environmental Planning Policy (State and Regional Development) 2011 |
| State Environmental Planning Policy (Infrastructure) 2007 |
| State Environmental Planning Policy (Rural Lands) 2008 |
| State Environmental Planning Policy No. 33 – Hazardous and Offensive Development |
| State Environmental Planning Policy No. 44 – Koala Habitat Protection |
| State Environmental Planning Policy No. 55 – Remediation of Land |
| Inverell Local Environmental Plan 2012 |

ATTACHMENT 2

Agency Comments



Our Ref: s7.2.7/10
Your Ref: SSD 8643
Contact: Chris Faley, Development Planner

3 August 2017

NSW Planning and Environment
Emailed: elle.donnelley@planning.nsw.gov.au

Dear Sir/Madam

**REQUEST FOR INPUT INTO SECRETARY'S ENVIRONMENTAL ASSESSMENT
REQUIREMENTS – SAPPHIRE SOLAR FARM**

Reference is made to the email on 27 July 2017 seeking input into the Secretary's Environmental Assessment Requirements (SEARs) for the proposed Sapphire Solar Farm.

Council is satisfied with the draft SEARs provided and welcomes the opportunity to consult directly with the applicant during the preparation of the Environmental Impact Statement.

If you require any further assistance please contact Council's Civil and Environmental Services on 67288200.

Yours faithfully



ANTHONY ALLISTON
MANAGER DEVELOPMENT SERVICES



Department of Primary Industries

OUT17/32173

Ms Elle Donnelley
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

elle.donnelley@planning.nsw.gov.au

Dear Ms Donnelley

Sapphire Solar Farm (SSD 8643) Request for Input into Secretary's Environment Assessment Requirements

I refer to your email of 27 July 2017 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant branches of DPI.

Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the Preliminary Environmental Assessment and draft SEARS and provides the following recommendations for matters to be addressed in the Environmental Impact Statement (EIS) for the proposal.

Water

DPI recommends the following amendments to the draft SEARs:

an assessment of the likely impacts of the development (including flooding) on surface water and groundwater resources (including any nearby watercourses and riparian land), dependent ecosystems, adjacent licensed water users and basic landholder rights and measures to reduce and mitigate these impacts, details of water supply arrangements, and a draft erosion and sediment control plan prepared in accordance with Managing Urban Stormwater: Soils & Construction (Landcom 2004);

Biodiversity

DPI recommends the EIS should specifically address impacts on the aquatic ecology of waterways such as Kings Plains Creek, Mary Anne Creek, Frazers Creek, Horse Gully and Apple Tree Gully and controls to be established for access tracks, cabling, transmission lines or road upgrades in Key Fish Habitats. The aquatic ecological environmental assessment should include the following information:

- A recent aerial photograph (preferably colour) of the locality (or reproduction of such a photograph);
- Area which may be affected either by the development or activity should be identified and shown on an appropriately scaled map (and aerial photographs);
- Waterways within the area of development are to be identified;
- The extent of aquatic habitat removal and riparian vegetation removal or modification which may result from the proposed development;

- Details of the location and design of proposed tracks or road upgrades crossing Key Fish Habitats; and
- Details of the methodology (e.g trenching, boring) for any underground cabling or transmission lines that pass through Key Fish Habitats.

Land

DPI recommends the EIS should specifically address the following:

- Outline proposed management of ground cover to protect soil from erosion, including:
 - appropriate expertise to be sought
 - pasture composition to be maintained
 - alternatives to be used to protect the soil if pasture establishment is not successful
 - management of beneficial grazing to maintain ground cover.
- Outline the rehabilitation objectives and strategies including indicators to be used to guide the return of the land back to agricultural production. Any land with a cropping history or land with a capability for cropping needs to consider cables/pipes to be buried at a depth >500 mm to allow greater opportunity for agricultural activities to continue over the top, particularly for cables/pipes to remain once restoration is complete. Detailed location identification of any subsurface infrastructure that is to remain is required.
- Trenching through sodic soils during construction must include soil amendment with Gypsum at a minimum rate of 10t/ha. Actual rates to be determined following soil testing (Clay content, ECEC and EC).
- Identify placement of transmission lines and solar panels within the site in relation to Crown road reserves to allow for further assessment on the impact of access over the roads. The proponent will also be required to provide information in relation to formed access tracks to determine the impact of these on Crown roads within the proposal area. This information should be provided in shapefile format at the time of the EIS exhibition.

Yours sincerely



Mitchell Isaacs
Director, Planning Policy & Assessment Advice
 18 August 2017

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:

<https://goo.gl/o8TXWz>

Elle Donnelley
Senior Planner Resource Assessments
Planning Services Division
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

elle.donnelley@planning.nsw.gov.au

Dear Elle

**Sapphire Solar Farm Project
Request for Secretary's Environmental Assessment Requirements**

I refer to your email dated 27 July 2017 inviting the Division of Resources & Geoscience (the Division) to provide comments on the Sapphire Solar Farm Project (the Project) Secretary's Environmental Assessment Requirements (SEARs) submitted by Sapphire Solar Pty Ltd (the Proponent).

The Division has reviewed the adequacy of information supplied relation to the abovementioned Project and provides the following advice:

The Division acknowledges the Draft SEARS requirements within the Specific Issues – Land section for the Proponent to include in the Environmental Impact Statement (EIS) an assessment of the development's compatibility with existing land uses on the site and adjacent land and the requirement for consultation during the preparation of the EIS with exploration licence holders, quarry operators and mineral title holders.

Based on regional geology, as well as current and historical exploration, the area is highly prospective for alluvial sapphire deposits. Accordingly the Preliminary Environmental Assessment (PEA) acknowledges current mining and exploration titles over the project area however, must also include mining lease applications adjacent the Project site.

The Division specifically requires the proponent to:

1. **Identify** the current and applied for mining leases (ML) and exploration licences (EL). In this regard, 'Figure 8: Mining and Exploration Titles' of the PEA, should also illustrate adjacent mining lease applications (MLA) MLA 479 (Act 1992) and MLA 539 (Act 1992), applied for by Eastern Feeder Holdings Pty Ltd.

The Department's database indicates that the contact details for titles within the project boundary are:

ML 1687

Jesasu
PO Box 752
INVERELL NSW 2360

ML 1374 & EL 8536

Eastern Feeder Holdings
"Orbin Park"
Bannockburn Road
INVERELL NSW 2360

EL 8230

Bond Resources
PO BOX 465
ARMIDALE NSW
2350

2. **Make contact with the titleholders** to determine their level of interest. This should include a letter of notification of the Project to the title holder including a map indicating the solar farm Project area (including wind farm turbines and associated electricity transmission infrastructure) in relation to the mining lease and exploration title boundaries, and a letter of response from the title holder to the Proponent. It is noted that consultation with mineral stakeholders has commenced and is to be continued through to the EIS.
3. **Clarify the sequence of land use**, particularly within ML 1687 (Act 1992). Timeframes for mining activities, rehabilitation and solar farm construction works should be clearly described and demonstrated through evidenced consultation with the titleholder. Details of the Coordination Deed agreed between the parties should be forwarded to the Division in regard to resource utilisation, access and sterilisation of resources subject to a Mining Lease granted under the *Mining Act 1992*.
4. **Review and Update** the above for new mineral and energy titles that may be granted in the vicinity of the subject site during all decision making stages of the Project. This is to ensure that other stakeholders with interests in the subject area are made aware of the Project.

Titles searches can be carried out using the Division's Minview application or the Common Ground viewer (links provided below):

<http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/geoscience-information/services/online-services/minview>

<http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/common-ground>

Should you have any enquires regarding this matter please contact:

Adam Banister, Acting Senior Advisory Officer - Royalties & Advisory Services on (02) 4931 6439.

Yours sincerely



for Zane West
Manager Royalties & Advisory Services
14 August 2017



Our reference: : SF17/34805 DOC17/402635
Contact: : Jessica Creed, 02 6773 7000, armidale@epa.nsw.gov.au
Date : 14 August 2017

Ms Elle Donnelley
Senior Planner
Resource Assessment – Planning Services
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

BY EMAIL

Dear Ms Donnelley

SAPPHIRE SOLAR FARM – SSD 8643

I refer to your email dated 27 July 2017 to the Environment Protection Authority (EPA) requesting Secretary's Environmental Assessment Requirements (SEARs) for the Sapphire Solar Farm ('the Project').

The EPA understands that the project will be assessed by the Department of Planning and Environment under Part 4 of the *Environmental Planning and Assessment Act 1979* as a State Significant Development. The EPA has considered the details provided and notes the project is proposing to construct and operate a 200-megawatt photovoltaic solar farm and associated infrastructure including battery storage, approximately 30km east of Inverell NSW.

The EPA notes that the project is not deemed a scheduled activity in accordance with Schedule 1 of the *Protection of the Environment Operations Act 1997*. Therefore, the proponent will not be required to apply for an Environment Protection Licence for the Project.

The EPA has reviewed the proposed SEARs provided with your email and notes it lists noise, water and land impacts as specific issues to address in the Environmental Impact Statement (EIS). The EPA also recommends the follow issues be addressed in the EIS:

- **Waste management** – The EIS should incorporate options and strategies for waste minimisation, reuse and recycling. Waste management should be a high priority given the issues that other similar developments in the region have experienced in managing the large volume of waste that is generated during construction. Examples of wastes that have caused issues include large quantities of packing materials such as wooden pallets, metals and plastics.
- **Dust** – Impacts from dust generated during the construction phase should be identified and appropriate mitigation measures should be defined and implemented.
- **Storage of chemicals and fuels** – The EIS should ensure that adequate control measures are implemented to ensure the risk of spills to the environment are minimised. Further information is available at: <http://www.environment.nsw.gov.au/water/bundingspill.htm>

If you have any further enquiries about this matter, please contact Jessica Creed in our Armidale Office by telephoning 02 6773 7000 or email at armidale@epa.nsw.gov.au

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Robert O'Hern'.

ROBERT O'HERN
Head Regional Operations Unit
Environment Protection Authority



File No: SF17/36228
Ref No: DOC17/292666

Elle Donnelley
Senior Planner, Resource Assessments, Planning Services
Planning and Environment
GPO Box 39
Sydney NSW 2001

Email: elle.Donnelley@planning.nsw.gov.au

Dear Ms Donnelley

Secretary's Environmental Assessment Requirements (SEARs) for the Sapphire Solar Farm (SSD 8643)

I refer to your correspondence received on 27 July 2017 requesting advice from the Heritage Council of NSW regarding the adequacy of the draft Secretary's Environmental Assessment Requirements (SEARs) for the proposed Sapphire Solar Farm (SSD 8643).

The draft SEARs have been reviewed. No State Heritage listed heritage items are present within the proposed project area. Nevertheless, archaeological relics, as defined under the *Heritage Act 1977*, may be present.

Therefore, the following Requirement is recommended under **Specific Issues – Heritage:**

- **In areas identified as having potential archaeological significance, undertake comprehensive archaeological assessment in accordance with Heritage Council of NSW guidelines. This includes a methodology and research design to assess the impact of the works on the potential archaeological resource to guide physical archaeological test excavations and include the results of these excavations.**

The following requirement is recommended under **Consultation:**

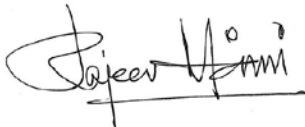
- **Consultation with the local Aboriginal Community should follow the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents. Consultation with the Local Aboriginal Land Council should begin at the planning stage of any assessment of the impacts of the proposal on Aboriginal heritage values.**

It is also recommended that the following list of documents be added under **Environmental Planning Instruments, Policies, Guidelines & Plans – Heritage**:

- **Heritage Council of NSW - Archaeological Assessments 1996.**
- **Heritage Council of NSW - Assessing significance for historical archaeological sites and relics 2009.**
- **Heritage Council of NSW - Criteria for the Assessment of Excavation Directors. Updated 2011.**

If you have any questions regarding this matter, please contact Ed Beebe, Senior Heritage Assessment Officer, at the Heritage Division, Office of Environment and Heritage on (02) 9585 6045 or ed.beebe@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Rajeev Maini', with a horizontal line underneath.

Rajeev Maini
Manager, Conservation
Heritage Division
Office of Environment & Heritage
As Delegate of the Heritage Council of NSW
14 August 2017



Office of
Environment
& Heritage

Our Ref: DOC17/393665

Your Ref: SSD 8643

Ms Elle Donnelley
Senior Planner
Department of Planning and Environment
PO Box 39
Sydney NSW 2001

Dear Ms Donnelley

**Re: Request for OEH Environmental Assessment Requirements – Sapphire Solar Farm,
Inverell Shire local government area (SSD 8643)**

Thank you for your e-mail of 27 July 2017 inviting input from the Office of Environment and Heritage (OEH) for the preparation of Secretary's Environmental Assessment Requirements (SEARs) for the Sapphire Solar Farm proposal. I appreciate the opportunity to provide advice.

The OEH notes that the proposal will be assessed as State Significant Development in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Environmental Impact Statement (EIS) SEARs provided by OEH are limited to Aboriginal cultural heritage, biodiversity, OEH estate, historic heritage, acid sulphate soils, flooding, stormwater and coastal erosion.

The proponent should ensure that the EIS will be sufficiently comprehensive to enable unambiguous determination of the extent of the direct and indirect impact(s) of the proposal. The EIS should include an appropriate assessment of potential biodiversity impacts, particularly direct and indirect impacts on threatened species, populations and ecological communities. Furthermore, the EIS should include an Aboriginal cultural heritage assessment that identifies and appropriately manages both tangible and intangible values. The OEH considers this information necessary to assess an EIS for the proposal.

The full list of OEH's standard and project specific requirements that may need to be addressed in the EIS are provided in **Attachment A** and **Attachment B** respectively. In preparing the EIS, the proponent should refer to the relevant guidance material listed in **Attachment C** and **Attachment D**.

If you have any further questions about this issue, Mr Don Owner, Regional Operations Officer, Regional Operations, OEH, can be contacted on 6659 8233 or at don.owner@environment.nsw.gov.au.

Yours sincerely

Dimitri Young 10 August 2017

DIMITRI YOUNG
Senior Team Leader Planning, North East Region
Regional Operations

Contact officer: DON OWNER
6659 8233

Enclosures:

Attachment A – OEH Standard Environmental Assessment Requirements (SSD 8643)
Attachment B – OEH Project-specific Environmental Assessment Requirements (SSD 8643)
Attachment C – Guidance material (SSD 8643)
Attachment D – OEH North East Branch Guidance Material – Crown Density Parameters for Woodland Endangered
Ecological Communities (SSD 8643)

Attachment A – OEH Standard Environmental Assessment Requirements (SSD 8643)

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| <p>Biodiversity</p> <p>1. Biodiversity impacts related to the proposed project are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the <i>Threatened Species Conservation Act 1995</i>.</p> |
| <p>Aboriginal cultural heritage</p> <p>2. The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the project and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.</p> <p>3. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.</p> <p>4. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.</p> |
| <p>Historic heritage</p> <p>5. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to <i>State and local heritage</i> including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:</p> <ul style="list-style-type: none"> a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations. |

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 Appendix 2 of the [Framework for Biodiversity Assessment](#)).
 - c. Groundwater.
 - d. Groundwater dependent ecosystems.
 - e. 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.
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.
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 erosion |
|--|
| <p>10. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:</p> <ul style="list-style-type: none"> a. Flood prone land b. Flood planning area, the area below the flood planning level. c. Hydraulic categorisation (floodways and flood storage areas). |
| <p>11. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.</p> |
| <p>12. The EIS must model the effect of the proposed project (including fill) on the flood behaviour under the following scenarios:</p> <ul style="list-style-type: none"> a. Current flood behaviour for a range of design events as identified in 8) above. The 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change. |
| <p>13. Modelling in the EIS must consider and document:</p> <ul style="list-style-type: none"> a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood. b. Impacts of the development 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, hazards and hydraulic categories. c. Relevant provisions of the NSW Floodplain Development Manual 2005. |
| <p>14. The EIS must assess the impacts on the proposed project on flood behaviour, including:</p> <ul style="list-style-type: none"> 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. Compatibility with the flood hazard of the land. d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land. e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site. f. 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. g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council. h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council. i. Emergency management, evacuation and access, and contingency measures for the development 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 SES. j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding. |

Attachment B – OEH Project-specific Environmental Assessment Requirements (SSD 8643)

Aboriginal cultural heritage

- A. The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.
- B. The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the [development/project] to formulate appropriate measures to manage unforeseen impacts.

Biodiversity

- A. The EIS must identify and map woodland endangered ecological communities listed under the *NSW Threatened Species Conservation Act 1995*, in accordance with the *OEH North East Branch Guidance Material – Crown Density Parameters for Mapping the Extent of Woodland Endangered Ecological Communities* at **Attachment D**.

Attachment C – Guidance material (SSD 8643)

| Title | Web address |
|---|---|
| <u>Relevant Legislation</u> | |
| <i>Coastal Protection Act 1979</i> | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N |
| <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>Threatened Species Conservation Act 1995</i> | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+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> | |
| NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013) | http://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf |
| Framework for Biodiversity Assessment (OEH, 2013) | http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf |
| Fisheries NSW policies and guidelines | http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation |
| List of national parks | http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx |
| Revocation, recategorisation and road adjustment policy (OEH, 2012) | http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm |
| Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010) | http://www.environment.nsw.gov.au/resources/parks/policyRevocations.pdf |
| OEH North East Branch Guidance Material – Crown Density Parameters for Mapping the Extent of Woodland Endangered Ecological Communities | Attachment D |
| <u>Heritage</u> | |
| The Burra Charter (The Australia ICOMOS charter for places of cultural significance) | http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf |

| Title | Web address |
|--|--|
| Statements of Heritage Impact 2002 (HO & DUAP) | http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf |
| NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N') | http://www.environment.nsw.gov.au/Heritage/publications/index.htm#M-O |
| Aboriginal Cultural Heritage | |
| Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010) | http://www.environment.nsw.gov.au/resources/cultureheritage/comconsultation/09781ACHconsultreq.pdf |
| Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) | http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf |
| Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011) | http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf |
| Aboriginal Site Recording Form | http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf |
| Aboriginal Site Impact Recording Form | http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf |
| Aboriginal Heritage Information Management System (AHIMS) Registrar | http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm |
| Care Agreement Application form | http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf |
| Water and Soils | |
| Acid sulphate soils | |
| Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas' | www.nratlas.nsw.gov.au/ |
| Acid Sulfate Soils Manual (Stone et al. 1998) | <p>Manual available for purchase from: http://www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DPI's Guidelines Register at: Chapter 1 Acid Sulfate Soils Planning Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulfate Soils Assessment Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf</p> |
| Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004) | http://www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above. |
| Flooding and Coastal Erosion | |
| Reforms to coastal erosion management | http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm |
| Floodplain development manual | http://www.environment.nsw.gov.au/floodplains/manual.htm |
| Guidelines for Preparing Coastal Zone Management Plans | Guidelines for Preparing Coastal Zone Management Plans http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf |
| NSW Climate Impact Profile | NSW Climate Impact Profile |
| Climate Change Impacts and Risk Management | Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation |

| Title | Web address |
|--|--|
| Water | |
| 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/australian-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 |

Attachment D – OEH North East Branch Guidance Material – Crown Density Parameters for Mapping the Extent of Woodland Endangered Ecological Communities (SSD 8643)

Underpinning Considerations from Hnatiuk, Thackway and Walker (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 1 crown width apart
3. Open Woodland has crowns well separated – up to 20 crown widths apart
4. Isolated trees are about 100m or more 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 | -.01 | -.05 | -.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 | | | |

Other Considerations

- The distances below are based on a canopy separation ratio with a conservative mean canopy width of 5m. This canopy width could be varied with site specific data.
- Native grassland comprises greater than 50% native species cover

Decision Logic for Box Gum Woodland EEC based on NSW Scientific Committee Final Determination (N.B. This EEC can be a woodland, open woodland or derived native grassland)

1. Tree canopies up to 50m apart with exotic or native grassland or bare earth between them – map all as EEC (N.B. this could be up to 100m apart given the EEC can be an open woodland but 50m was chosen to be pragmatic given this state can have just exotics or even bare earth in between trees).
2. Tree canopies between 50m and 100m apart – map trees and any areas of native grassland as EEC but exclude areas of bare earth and exotic grassland areas.
3. Tree canopies more than 100m apart with patches of native and exotic grassland between them – map the areas of native grassland in between as EEC but exclude areas of bare earth and exotic grassland areas.

Decision Logic for Ribbon Gum Mountain Gum Snow Gum Grassy Open Forest/Woodland EEC based on NSW Scientific Committee Final Determination (N.B. This EEC can be an open forest, woodland or derived native grassland)

1. Tree canopies up to 5m apart with exotic or native grassland or bare earth between them – map all as EEC.
2. Tree canopies between 5m and 100m apart – map trees and any areas of native grassland as EEC but exclude areas of bare earth and exotic grassland areas.
3. Tree canopies more than 100m apart with patches of native and exotic grassland between them – map the areas of native grassland in between as EEC but exclude areas of bare earth and exotic grassland areas.



File No: NTH17/00097
Your Ref: SSD_8643

The Manager
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Elle Donnelley – Senior Planner

Dear Sir / Madam,

Secretary's Environmental Assessment Requirements (SSD 8643) Sapphire Solar Farm, Inverell LGA

I refer to your email of 27 July 2017 requesting input to the Secretary's Environmental Assessment Requirements (EARs) for the abovementioned state significant development.

Roles and Responsibilities

The key interests for Roads and Maritime Services are the safety and efficiency of the road network, traffic management, the integrity of infrastructure and the integration of land use and transport.

Gwydir Highway is a classified (state) road. In accordance with Section 7 of the *Roads Act 1993* (the Act) Inverell Shire Council is the Roads Authority for this road and all other public roads in the subject area. Roads and Maritime is the Roads Authority for freeways and has responsibilities for freeways and classified roads in accordance with the Act. Any proposed works on a classified (State) road will require the consent of Roads and Maritime. Consent is provided under the terms of a Works Authorisation Deed (WAD).

Roads and Maritime Response

Roads and Maritime requests that the Environmental Assessment be supported by a Traffic Impact Assessment (TIA) prepared by a suitably qualified person in accordance with the Austroads Guide to Traffic Management Part 12, the complementary Roads and Maritime Supplement and RTA Guide to Traffic Generating Developments. The TIA is to address the following;

- The total impact of existing and proposed development on the road network with consideration for a 10 year horizon.
- The volume and distribution of traffic generated by the proposed development.
- Intersection sight distances at key intersections along the nominated access route to the site.
- Existing and proposed site access standards.
- Details of proposed improvements to affected intersections, in particular assessments of impacts on safety and efficiency of junctions with the classified road network.
- Details of servicing and parking arrangements.

- Impact on public transport (public and school bus routes) and consideration for alternative transport modes such as walking and cycling.
- Impacts of road traffic noise and dust generated along the primary access route/s.
- Consideration of potential glare/reflectivity generated from on-site infrastructure towards public roads.
- Details of a Transport Management Plan (TMP) to identify and manage impacts of construction and operational traffic on the safety and efficiency of the affected road network. The TMP may include temporary measures such as Traffic Control Plans to address construction related traffic at specific locations. The TMP should include a Driver Code of Conduct, which may include, but not be limited to the following;
 - A map of the primary access routes highlighting critical locations.
 - Safety initiatives for transport through residential areas and/or school zones.
 - Consideration for coordination of construction traffic with seasonal agricultural haulage.
 - An induction process for vehicle operators & regular toolbox meetings.
 - A complaint resolution and disciplinary procedure.
 - Any community consultation measures for the peak construction period.

Where road safety concerns are identified at a specific location along the identified access route/s, Roads and Maritime suggests that the TIA may be supported by a targeted Road Safety Audit undertaken by suitably qualified persons.

The current Austroads Guidelines, Australian Standards and Roads and Maritime Supplements are to be adopted for any proposed works on the classified road network.

The Developer would be required to enter into a 'Works Authorisation Deed' (WAD) with Roads and Maritime for any works deemed necessary by the Consent Authority on the classified road network. The developer would be responsible for all costs associated with the works and administration for the WAD. Further information on undertaking private developments adjacent to classified roads can be accessed at: <http://www.rms.nsw.gov.au/projects/planning-principles/index.html>

Roads and Maritime highlights the Consent Authority is responsible for considering the environmental impacts of any road works which are ancillary to the development. This includes any works which form part of the proposal and/or any works deemed necessary to include as requirements in the conditions of development consent.

If you have any further enquiries regarding the above comments please contact Matt Adams, Acting Manager Land Use Assessment on (02) 6640 1362 or via email at: development.northern@rms.nsw.gov.au

Yours faithfully



10 August 2017

for Liz Smith
Network & Safety Manager, Northern Region



**Notification of
REFERRAL DECISION AND DESIGNATED PROPONENT – controlled action**

Sapphire Solar Farm Project, 28 km east of Inverell, NSW (EPBC 2017/8121)

This decision is made under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

| | |
|------------------------|--|
| proposed action | To build and operate a utility-scale photovoltaic solar farm with battery storage, 28 km east of Inverell, NSW [See EPBC Act referral 2017/8121] |
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| | |
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| decision on proposed action | The proposed action is a controlled action. The project will require assessment and approval under the EPBC Act before it can proceed. |
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| relevant controlling provisions | <ul style="list-style-type: none">Listed threatened species and communities (sections 18 & 18A) |
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| designated proponent | Sapphire Solar Farm Pty Ltd ACN: 620 649 069 |
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| assessment approach | The project will be assessed under the assessment bilateral agreement with NSW. |
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Decision-maker

| | |
|--------------------------|---|
| Name and position | Kim Farrant Assistant Secretary Assessments (ACT, NSW) and Waste Branch |
|--------------------------|---|

Signature

| | |
|-------------------------|----------------|
| date of decision | 5 January 2018 |
|-------------------------|----------------|



Ed Mounsey
Head of Development
CWP Solar Pty Ltd
PO Box 1708
Newcastle NSW 2300

Dear Mr Mounsey

**Sapphire Solar Farm (SSD 8643) (EPBC: 2017/8121)
Revised Environmental Assessment Requirements**

I have attached the revised environmental assessment requirements for the preparation of an Environmental Impact Statement (EIS) for the Sapphire Solar Farm.

Since the time of issuing the original requirements, dated 23 August 2017, the project has been determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999*.

Consequently, the Department has included revised requirements relating to the assessment of matters of national environmental significance (MNES) in accordance with the Bilateral Agreement between the Commonwealth and NSW Governments (see Attachment 2).

Please note that the Department will review the EIS before putting it on public exhibition. If it fails to adequately address these requirements, you will be required to submit an amended EIS.

Yours sincerely

10/1/18

Clay Preshaw
Director
Resource and Energy Assessments
as nominee of the Secretary

Environmental Assessment Requirements

State Significant Development

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

| | |
|-----------------------------|--|
| Application Number | SSD 8643 |
| Proposal | <p>Sapphire Solar Farm which includes:</p> <ul style="list-style-type: none">• the construction and operation of a photovoltaic generation facility with an estimated capacity of approximately 180 MW; and• development of associated infrastructure, including grid connection and battery storage. |
| Location | 30 km east of Inverell |
| Applicant | Sapphire Solar Farm Pty Ltd |
| Date of Issue | 10 January 2018 |
| General Requirements | <p>The Environmental Impact Statement (EIS) for the development must comply with the requirements in Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none">• a stand-alone executive summary;• a full description of the development, including:<ul style="list-style-type: none">– details of construction, operation and decommissioning;– a site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process);– a detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development;• a strategic justification of the development focusing on site selection and the suitability of the proposed site;• an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including:<ul style="list-style-type: none">– a description of the existing environment likely to be affected by the development;– an assessment of the likely impacts of all stages of the development (which is commensurate with the level of impact), taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice;– a description of the measures that would be implemented to avoid, mitigate and/or offset the impacts of the development (including draft management plans for specific issues as identified below); and– a description of the measures that would be implemented to monitor and report on the environmental performance of the development;• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and• the reasons why the development should be approved having regard to:<ul style="list-style-type: none">– relevant matters for consideration under the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development;– the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and– feasible alternatives to the development (and its key components), including the consequences of not carrying out the development. |

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| | <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by:</p> <ul style="list-style-type: none"> • a signed report from a suitably qualified person that includes an accurate estimate of the capital investment value of the development (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>), including details of all the assumptions and components from which the capital investment value calculation is derived; and • the consent in writing of the owner of the land (as required in clause 49(1)(b) of the <i>Environmental Planning and Assessment Regulation 2000</i>). |
| Specific Issues | <p>The EIS must address the following specific issues:</p> <ul style="list-style-type: none"> • Biodiversity – including an assessment of the likely biodiversity impacts of the development (including but not limited to the impacts on Box Gum Woodland and Derived Native Grassland and Ribbon Gum Mountain Gum Snow Gum Grassy Open Forest / Woodland Endangered Ecological Communities) having regard to the <i>NSW Biodiversity Offsets Policy for Major Projects</i>, and in accordance with the <i>Framework for Biodiversity Assessment</i>, unless otherwise agreed by the Department, and an assessment of the likely impacts to the aquatic ecology of waterways (including but not limited to Kings Plain Creek, Mary Anne Creek, Frazers Creek, Horse Gully and Apple Tree Gully); • Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including adequate consultation with the local Aboriginal community; • Land – including an assessment of the impact of the development on agricultural land and flood prone land, a soil survey to consider the potential for erosion to occur, and paying particular attention to the compatibility of the development with the existing land uses on the site and adjacent land (e.g. operating mines, extractive industries, mineral or petroleum resources, exploration activities, aerial spraying, dust generation, and risk of weed and pest infestation) during operation and after decommissioning, with reference to the zoning provisions applying to the land; • Visual – including an assessment of the likely visual impacts of the development (including any glare, reflectivity and night lighting) on surrounding residences, scenic or significant vistas, air traffic and road corridors in the public domain, including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners; • Noise – including an assessment of the construction noise impacts of the development in accordance with the <i>Interim Construction Noise Guideline</i> (ICNG) and operational noise impacts in accordance with the <i>NSW Industrial Noise Policy</i> (INP), and a draft noise management plan if the assessment shows construction noise is likely to exceed applicable criteria; • Transport – including an assessment of the site access route, site access point and likely transport impacts (including peak and average traffic generation) of the development on the capacity and condition of roads (including on any Crown land), a description of the measures that would be implemented to mitigate any impacts during construction, and a description of any proposed road upgrades developed in consultation with the relevant road authorities (if required); • Water –including: <ul style="list-style-type: none"> – an assessment of the likely impacts of the development (including flooding) on surface water (including Kings Plain Creek, Mary Anne Creek, Frazers Creek, Horse Gully and Apple Tree Gully and riparian land) and groundwater resources, wetlands, riparian land, groundwater dependent ecosystems, aquatic ecology, and acid sulfate soils), related |

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|---|--|
| | <p>infrastructure, adjacent licensed water users and basic landholder rights, and measures proposed to monitor, reduce and mitigate these impacts;</p> <ul style="list-style-type: none"> – details of water requirements and supply arrangements for construction and operation; and – a description of the erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with <i>Managing Urban Stormwater: Soils & Construction</i> (Landcom 2004); <ul style="list-style-type: none"> • Hazards and Risks – including: <ul style="list-style-type: none"> – a preliminary risk screening in accordance with <i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33</i> (DoP, 2011), and if the preliminary risk screening indicates the development is “potentially hazardous”, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with <i>Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis</i> (DoP, 2011) and <i>Multi-Level Risk Assessment</i> (DoP, 2011); and – an assessment of all potential hazards and risks including but not limited to bushfires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure; • Socio-Economic – including an assessment of the likely impacts on the local community and a consideration of the construction workforce accommodation; and • Cumulative Impacts – an assessment of the cumulative impacts with the Sapphire Wind Farm, White Rock Wind Farm, White Rock Solar Farm and Glenn Innes Wind Farm. |
| Consultation | <p>During the preparation of the EIS, you should consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups, affected landowners, exploration licence holders, quarry operators and mineral title holders.</p> <p>In particular, you must undertake detailed consultation with affected landowners surrounding the development and Inverell Shire Council.</p> <p>The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.</p> |
| Further consultation after 2 years | <p>If you do not lodge a development application and EIS for the development within 2 years of the issue date of these Environmental Assessment Requirements, you must consult further with the Secretary in relation to the preparation of the EIS.</p> |

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

| Biodiversity | |
|------------------------------|--|
| | Framework for Biodiversity Assessment (OEH) |
| | NSW Biodiversity Offsets Policy for Major Projects (OEH) |
| | Threatened Species Assessment Guidelines - Assessment of Significance (OEH) |
| | Biosecurity Act 2015 |
| | Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (DPI) |
| | Policy and Guidelines for Fish Habitat Conservation and Management (DPI) |
| Heritage | |
| | Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH) |
| | Code of Practice for Archaeological Investigations of Objects in NSW (OEH) |
| | Guide to investigating, assessing and reporting on aboriginal cultural heritage in NSW (OEH). |
| | NSW Heritage Manual (OEH) |
| | Heritage Council of NSW - Archaeological Assessments 1996 |
| | Heritage Council of NSW - Assessing significance for historical archaeological sites and relics 2009 |
| | Heritage Council of NSW - Criteria for the Assessment of Excavation Directors. Updated 2011 |
| Land | |
| | Primefact 1063: Infrastructure proposals on rural land (DPI) |
| | Establishing the social licence to operate large scale solar facilities in Australia: insights from social research for industry (ARENA) |
| | Local Land Services Act 2013 |
| | Australian Soil and Land Survey Handbook (CSIRO) |
| | Guidelines for Surveying Soil and Land Resources (CSIRO) |
| | The land and soil capability assessment scheme: second approximation (OEH) |
| Noise | |
| | NSW Industrial Noise Policy (EPA) |
| | Interim Construction Noise Guideline (EPA) |
| | NSW Road Noise Policy (EPA) |
| Transport | |
| | Guide to Traffic Generating Developments (RTA) |
| | Road Design Guide (RMS) & relevant Austroads Standards |
| | Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development |
| Water | |
| | Managing Urban Stormwater: Soils & Construction (Landcom) |
| | Floodplain Development Manual (OEH) |
| | Guidelines for Controlled Activities on Waterfront Land (DPI Water) |
| | Water Sharing Plans (DPI Water) |
| | Floodplain Management Plan (DPI Water) |
| | Guidelines for Watercourse Crossings on Waterfront Land (DPI Water) |
| Waste | |
| | Waste Classification Guidelines (EPA) |
| Electromagnetic Interference | |
| | ICNIRP Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields |
| Hazards and Risk | |
| | Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis |

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| Multi-Level Risk Assessment (DPE) |
| Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (ICNIRP) |
| Environmental Planning Instruments |
| State Environmental Planning Policy (State and Regional Development) 2011 |
| State Environmental Planning Policy (Infrastructure) 2007 |
| State Environmental Planning Policy (Rural Lands) 2008 |
| State Environmental Planning Policy No. 33 – Hazardous and Offensive Development |
| State Environmental Planning Policy No. 44 – Koala Habitat Protection |
| State Environmental Planning Policy No. 55 – Remediation of Land |
| Inverell Local Environmental Plan 2012 |

ATTACHMENT 2
Requirements of the Commonwealth Department of the Environment and Energy

**Assessment Requirements relevant to the
*Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)***

**Sapphire Solar Farm
(SSD 8643) (EPBC: 2017/8121)**

1. On 5 January 2018, it was determined that the Sapphire Solar Farm would impact upon the following matter of national environmental significance (MNES) protected under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*:
 - threatened species and communities.

The project will be assessed in accordance with the manner specified in Schedule 1 of the NSW Assessment Bilateral Agreement 2015 (the Agreement). These requirements are a supplement to the Secretary's Environmental Assessment Requirements issued on 10 January 2018 and should be addressed in conjunction with those requirements

2. Assessment documentation prepared for the purposes of approval under the EPBC Act must, in addition to providing sufficient information for a decision in accordance with the Agreement, address the matters outlined in Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)*. Proponents are advised to check that requirements in Schedule 4 of the EPBC Regulations have been appropriately addressed.
http://www.austlii.edu.au/au/legis/cth/consol_reg/epabcr2000697/.
3. The requirements are intended such that there is sufficient information in the assessment report relevant to MNES such that the Commonwealth decision-maker may make a determination on whether or not to approve the action. The proponent must undertake an assessment of all the protected matters that may be impacted by the development under the controlling provision identified in paragraph 1. A list of protected matters that are considered likely to be significantly impacted is provided at Attachment A to these Guidelines. Note that this may not be a complete list and it is the responsibility of the proponent to ensure any protected matters under this controlling provision, likely to be significantly impacted, are assessed for the Commonwealth decision-maker's consideration.

General Requirements

Project Description

4. The title of the action, background to the development and current status.
5. The precise location and description of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on matters of national environmental significance (MNES).
6. How the action relates to any other actions that have been, or are being taken, in the region affected by the action.
7. How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts on MNES.

Impacts

8. The Environmental Assessment (EA) must include an assessment of the relevant impacts¹ of the action on threatened species and communities; including
- a description and detailed assessment of the nature and extent of the likely direct, indirect and consequential impacts, including short term and long term relevant impacts;
 - a statement whether any relevant impacts are likely to be known, unpredictable or irreversible; analysis of the significance of the relevant impacts;
 - any technical data and other information used or needed to make a detailed assessment of the relevant impacts; and
 - a comparative description of the impacts of alternatives, if any, on the threatened species and communities.

Avoidance, mitigation and offsetting

9. For each of the relevant matters protected that are likely to be significantly impacted by the development, the EA must provide information on proposed avoidance and mitigation measures to deal with the relevant impacts of the action, including:
- a description and an assessment of the expected or predicted effectiveness of the mitigation measures;
 - any statutory policy basis for the mitigation measures;
 - the cost of the mitigation measures;
 - a description of the outcomes that the avoidance and mitigation measures will achieve;
 - an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action;
 - the name of any agency responsible for endorsing or approving a mitigation measure or monitoring program; and
 - a description of the offsets proposed to address the residual adverse significant impacts and how these offsets will be established.
10. Where a significant residual adverse impact to a threatened species or community is considered likely, the EA must provide information on the proposed offset strategy, including discussion of the conservation benefit associated with the proposed offset strategy. Paragraphs 13 & 14 provide further requirements in relation to offsets.

Key Issue – Biodiversity

11. The EA must address the following issues in relation to Biodiversity including separate:
- identification of each EPBC Act listed threatened species and community likely to be impacted by the development. Provide evidence why other EPBC Act listed threatened species and communities likely to be located in the project area or in the vicinity will not be impacted.

¹ Relevant impacts are those impacts likely to significantly impact any matter protected under the EPBC Act

12. For each of the relevant EPBC Act listed threatened species and communities likely to be impacted by the development the EA must provide a separate:

- description of the habitat and habits (including identification and mapping of suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advice, conservation advice and recovery plans, threat abatement plans and wildlife conservation plans;
- details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Australian Government guidelines and policy statements; and
- description of the impacts of the action having regard to the full national extent of the species or community's range.

[Note: the relevant guidelines and policy statements for each species and community are available from the Department of the Environment Species Profiles and Threats Database. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>]

13. For each of the relevant EPBC Act listed threatened species and communities likely to be significantly impacted by the development the EA must provide a separate:

- identification of significant residual adverse impacts likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account;
- details of how the current published NSW Framework for Biodiversity Assessment (FBA) has been applied in accordance with the objects of the EPBC Act to offset significant residual adverse impacts; and
- details of the offset package to compensate for significant residual impacts including details of the credit profiles required to offset the development in accordance with the FBA and/or mapping and descriptions of the extent and condition of the relevant habitat and/or threatened communities occurring on proposed offset sites.

[Note: For the purposes of approval under the EPBC Act, it is a requirement that offsets directly contribute to the ongoing viability of the specific protected matter impacted by a proposed action i.e. 'like for like'. In applying the FBA, residual impacts on EPBC Act listed threatened ecological communities must be offset with Plant Community Type(s) (PCT) that are ascribed to the specific EPBC listed ecological community. PCTs from a different vegetation class will not generally be acceptable as offsets for EPBC listed communities.]

14. Any significant residual impacts not addressed by the FBA may need to be addressed in accordance with the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy. <http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy>. [Note if the EPBC Act Environmental Offset Policy is used to calculate proposed offsets for a threatened species or community you may wish to seek further advice from the Department of Planning and Environment.]

15. For each threatened species and community likely to be significantly impacted by the development, the EA must provide reference to, and consideration of, relevant approved conservation advice or recovery plan for the species or community.

[Note: the relevant guidelines and policy statements for each species and community are available from the Department of the Environment Species Profiles and Threats Database. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>]

Environmental Record of person proposing to take the action

16. Information in relation to the environmental record of a person proposing to take action must include details as prescribed in Schedule 4 Clause 6 of the EPBC Regulations 2000.

Information Sources

17. For information given in the EA, the EA must state the source of the information, how recent the information is, how the reliability of the information was tested; and what uncertainties (if any) are in the information.

REFERENCES

1. *Environment Protect and Biodiversity Conservation Act 1999* - section 51-55, section 96A(3)(a)(b), 101A(3)(a)(b), section 136, section 527E
2. NSW Assessment Bilateral Agreement (2015) - Item 18.1, Item 18.5, Schedule 1
3. *Matters of National Environmental Significance - Significant impact guidelines 1.1* (2013) EPBC Act
4. *Environment Protect and Biodiversity Conservation Act 1999* Environmental Offsets Policy October 2012

Attachment A

The Department of the Environment's Environment Reporting Tool (ERT) identifies that 22 listed threatened species and 3 listed ecological communities may occur within 2 km of the proposed action. Based on the information in the referral documentation, the location of the action, species records and likely habitat present in the area, there are likely to be significant impacts to:

- White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

In addition, there is some risk that there may be significant impacts on the following matters and levels of impact should be further investigated:

- Regent Honeyeater (*Anthochaera phrygia*) which is listed as critically endangered under the EPBC Act;
- Swift Parrott (*Lathamus discolor*) which is listed as critically endangered under the EPBC Act;
- Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko (*Uvidicolus sphyrurus*) which is listed as vulnerable under the EPBC Act;
- Austral Toadflax (*Thesium austral*) which is listed as vulnerable under the EPBC Act; and
- Bluegrass (*Oichanthium setosum*) which is listed as vulnerable under the EPBC Act.