

GUNNEDAH SOLAR FARM

ENVIRONMENTAL MANAGEMENT STRATEGY

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CONSTRUCTION LEADERS



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- Appendix A: Gunnedah Solar Farm Development Consent SSD 865
- Appendix B: GSF Community Engagement Plan



Abbreviations

GSC	Gunnedah Shire Council
APZ	Asset Protection Zone
BMP	Biodiversity Management Plan
CEMP	Construction Environmental Management Plan
CoA	Condition of Approval
DMP	Decommissioning Management Plan
DPIE	Department of Planning, Industry and Environment
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPC	Engineering, Procurement and Construction
ERP	Emergency Response Plan
ETL	Electricity Transmission Line
ESCP	Erosion and Sediment Control Plan
GSFPL	Gunnedah Solar Farm Pty Ltd
kV	Kilovolt
GSF	Gunnedah Solar Farm
MW	Megawatt
OEH	Office of Environment and Heritage
OEMP	Operations Environmental Management Plan
RAV	Restricted Access Vehicle
RAP	Registered Aboriginal Parties
PCL	PCL Constructors Pacific Rim Pty
RFS	Rural Fire Service
RMS	Roads and Maritime Services
SoC	Summary of Commitments
SWMP	Soil and Water Management Plan
TMP	Traffic Management Plan



Introduction

1.1 APPROVED PROJECT

The Gunnedah Solar Farm (GSF) was granted development consent (SSD 8658) on the 12th of March 2019. The approved consent allows for the development of a large-scale solar farm off of Orange Grove Road, approx. 10 km East of Gunnedah, to be constructed within the approved 'array area' as illustrated in the 'General Layout of Development' presented in Appendix 1 of the Development Consent. A copy of the 'General Layout of Development' is provided below (Figure 1).

1.2 STRATEGY FUNCTION

This Environmental Management Strategy(EMS) has been prepared to satisfy a Condition of Approval (CoA). Specifically, Schedule 4 CoA (1) requires:

Environmental Management Strategy

1. *Prior to the commencement of construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:*

- (a) provide the strategic framework for environmental management of the development;*
- (b) identify the statutory approvals that apply to the development;*
- (c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;*
- (d) describe the procedures that would be implemented to:*
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;*
 - receive, handle, respond to, and record complaints;*
 - resolve any disputes that may arise;*
 - respond to any non-compliance;*
 - respond to emergencies; and*
- (e) include:*
 - references to any plans approved under the conditions of this consent; and*
 - a clear plan depicting all the monitoring to be carried out in relation to the development.*

Following the Secretary's approval, the Applicant must implement the Environmental Management Strategy.

Pursuant to the definition in the Department of Planning, Industry and Environment's (DPIE) Development Consent, construction is defined as:

The construction of the development, including but not limited to the carrying out of any earthworks on site and the construction of solar panels and any ancillary infrastructure (but excludes any upgrades to the public road network required under this consent, installation of fencing, artefact survey, overhead line safety marking geotechnical drilling and/or surveying).

In addition, it should be noted that this Environmental Strategy has been drafted in line with the 'Terms of Consent' under Schedule 2 of the Development Consent which states:



TERMS OF CONSENT

2. *The Applicant must carry out the development:*
 - (a) *generally in accordance with the EIS; and*
 - (b) *in accordance with the conditions of this consent.*

Note: The general layout of the development is shown in Appendix 1.

3. *If there is any inconsistency between the above documents, the most recent document must prevail to the extent of the inconsistency. However, the conditions of this consent must prevail to the extent of any inconsistency.*
4. *The Applicant must comply with any requirement/s of the Secretary arising from the Department's assessment of:*
 - (a) *any strategies, plans or correspondence that are submitted in accordance with this consent;*
 - (b) *any reports, reviews or audits commissioned by the Department regarding compliance with this consent; and*
 - (c) *the implementation of any actions or measures contained in these documents.*

1.3 PROPONENT

The development proponent/applicant is Gunnedah Solar Farm Pty Ltd (GSFPL), which is a wholly owned company of Canadian Solar Inc.

1.4 EPC CONTRACTOR

PCL Constructors Pacific Rim Pty (PCL) is the proposed Engineering, Procurement and Construction Contractor which would have the responsibility to build the GSF. PCL is currently engaged in pre-construction planning.

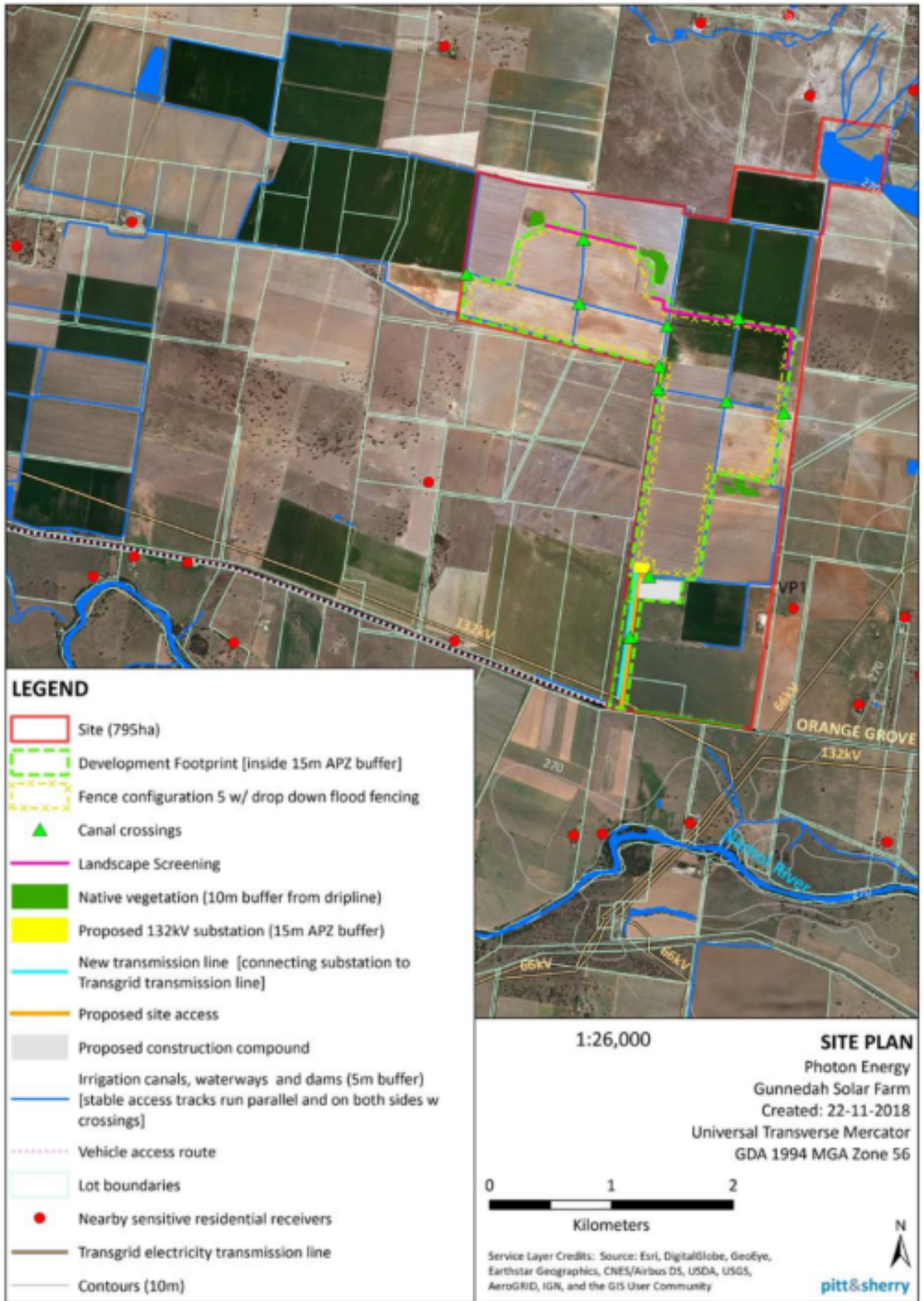


Figure 1: Approved General Layout of Development

Source: Appendix 1, General Layout of Development. Development Consent SSD 8658



1.5 STRUCTURE

The structure and scope of this EMS has been prepared to be consistent with the specification in the DPIE's consent to facilitate cross referencing for review.

- **Section 2** provides the strategic framework for environmental management of the development.
- **Section 3** identifies the statutory approvals that apply to the development.
- **Section 4** describes the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development.
- **Section 5** describes the procedures that would be implemented to keep the local community and relevant agencies informed about the operation and environmental performance of the development.
- **Section 6** describes the procedures that would be implemented to receive, handle, respond to and record complaints.
- **Section 7** describes the procedures that would be implemented to resolve any disputes that may arise.
- **Section 8** describes the procedures that would be implemented to respond to any non-compliance.
- **Section 9** describes the procedures that would be implemented to respond to emergencies.
- **Section 10** includes a list of those plans that require approval under the conditions of the Development Consent.
- **Section 11** provides a plan depicting all the monitoring to be carried out in relation to the development.



Strategic Framework

2.1 ENVIRONMENTAL STRATEGY

A strategy is a plan of action designed to achieve an overall aim.

GSFPL's aim is to design, construct, operate, upgrade and decommission the GSF in compliance with the Development Consent.

Schedule 2 CoA (2) states:

The Applicant must carry out the development:
(a) generally in accordance with the EIS; and
(b) in accordance with the conditions of this consent.

In the context above, the EIS includes Statements of Commitment (SoC made in the

- *Gunnedah Solar Farm Environmental Impact Statement (pitt & sherry, April 2018), and*

The environmental management objective is to therefore comply with the CoA and SoC.

2.2 PLAN OF ACTION

The plan of action is to identify all CoA and SoC that require an environmental deliverable and ensure that these are prepared at the appropriate stage of the development in accordance with the relevant legislation, policies and guidelines. Deliverables will be prepared in consultation with relevant stakeholders, requisite approvals will be secured, and then they will be diligently implemented.

The mechanism for achieving the plan of action is for a clear delineation of contractually enforced responsibilities between the Applicant (GSFPL) and the EPC Contractor (PCL) along with identifying key environmental hold-points that must be achieved before the GSF can be constructed, operated, upgraded or decommissioned.

Table 2.1 provides a summary of the key hold points. It provides a full and complete listing of all plans that must be prepared throughout the life of the development. It includes clarification of what third party consultation and/or approval is required in the preparation and sign-off of these plans, and is based on compliance with the CoA and SoC.

**Table 2.1 – Environmental Hold Points**

Plan	Reference	Compliance Requirement
PRIOR TO CONSTRUCTION		
Environmental Management	CoA Schedule 3 (1)	<p>Environmental Management Strategy</p> <p>1. Prior to the commencement of construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <p>(a) provide the strategic framework for environmental management of the development;</p> <p>(b) identify the statutory approvals that apply to the development;</p> <p>(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;</p> <p>(d) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise; • respond to any non-compliance; • respond to emergencies; and <p>(e) include:</p> <ul style="list-style-type: none"> • references to any plans approved under the conditions of this consent; and • a clear plan depicting all the monitoring to be carried out in relation to the development. <p>Following the Secretary's approval, the Applicant must implement the Environmental Management Strategy.</p>
Road Upgrades	CoA Schedule 3 (4)	<p>Prior to the commencement of construction, the Applicant must:</p> <p>(a) upgrade Old Blue Vale Road a minimum of 100 m from its intersection with both Kelvin Road and Blue Vale Road to a standard that allows two-way heavy vehicle movements, in accordance with the Austroads Guide to Road Design (as amended by RMS supplements); and</p> <p>(b) remove loose gravel material at the Old Blue Vale Road and Kelvin Road intersection, to the satisfaction of the relevant road authority.</p>
Site Access	CoA Schedule 3 (6)	<p>Prior to the commencement of construction, the Applicant must upgrade the site access point off Orange Grove Road (shown in Appendix 1) with a Rural Property Access type treatment to cater for the largest vehicle accessing the site, including sealing the on-site access road a minimum of 30 m from its intersection with Orange Grove Road, in accordance with the Austroads Guide to Road Design (as amended by RMS supplements), to the satisfaction of Council.</p>

**Table 2.1 – Environmental Hold Points**

Plan	Reference	Compliance Requirement
Road Maintenance		<p>The Applicant must:</p> <p>(a) undertake a dilapidation survey of the condition of the heavy vehicle transport route along Blue Vale Road, Old Blue Vale Road, Kelvin Road and Orange Grove Road in accordance with any relevant Austroads standards or guidelines:</p> <ul style="list-style-type: none"> • prior to the commencement of construction, upgrading and/or decommissioning works;
Traffic Management Plan	CoA Schedule 3 (9)	Prior to the commencement of construction, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS and Council, and to the satisfaction of the Secretary.
Final Layout Plans	CoA Schedule 2 (5)	Plans must be submitted to the Department of Planning, Industry and Environment including details on the siting of solar panels and ancillary infrastructure.
Construction Certificate	CoA Schedule 2 (9)	Obtain Construction Certificate(s) for proposed building works, pursuant to Part 4A of the <i>Environmental Planning and Assessment Act 1979</i> .
Notification of Works	CoA Schedule 2 (8)	Notify the Department of Planning, Industry and Environment in writing of the date of commencement of construction.
Landscaping Plan	CoA Schedule 3 (11) SoC – Visual and Land Management Plan	<p>Prior to the commencement of construction, the applicant must prepare a detailed Landscaping Plan for the development in consultation with Council and to the satisfaction of the Secretary.</p> <p>Note: The Landscaping Plan will satisfy the SoC's Visual Buffer Landscaping Plan and Land Management Plan.</p>
Water Management Plan	CoA Schedule 3 (24)	Prior to the commencement of construction, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the of the Secretary.
Chance Finds Protocol	CoA Schedule 3 (21)	Prior to the commencement of construction, the Applicant must prepare a Chance Finds Protocol for the development in consultation with the Aboriginal stakeholders and to the satisfaction of OEH

**Table 2.1 – Environmental Hold Points**

Plan	Reference	Compliance Requirement
PRIOR TO CONSTRUCTION		
Construction Environmental Management Plan	SoC	<p>A project specific Construction Environmental Management Plan (CEMP) and all relevant sub-plans will be prepared by the Contractor prior to commencing Stage 1 construction. The sub-plans will include:</p> <ul style="list-style-type: none"> • Land Management Plan (LMP) including a weed management plan. • Soil and Water Management Plan (SWMP) including erosion and sediment (ERSED) control • Unexpected Finds protocol • Waste Management Plan (WMP) • Traffic Management Plan (TMP) • Emergency Contingency Plan.
DURING CONSTRUCTION		
Compliance Reporting	CoA Schedule 4 (6)	The Applicant must provide regular compliance reporting to the Department on the development in accordance with the Department's Compliance Reporting Post Approval Requirements (2018), or its latest version.
Independent Environmental Audit	CoA Schedule 4 (7)	<p>Within 6 months of the commencement of construction, or as directed by the Secretary, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:</p> <p>(a) be prepared in accordance with the relevant Independent Audit Post Approval Requirements (DPE 2018);</p> <p>(b) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</p> <p>(c) be carried out in consultation with the relevant agencies;</p> <p>(d) assess whether the development complies with the relevant requirements in this consent, and any strategy, plan or program required under this consent; and</p> <p>(e) recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under this consent.</p> <p>Within 3 months of commencing an Independent Environmental Audit, or unless otherwise agreed by the Secretary, a copy of the audit report must be submitted to the Secretary, and any other NSW agency that requests it, together with a response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations of the Independent Environmental Audit must be implemented to the satisfaction of the Secretary.</p>
PRIOR TO OPERATION		

**Table 2.1 – Environmental Hold Points**

Plan	Reference	Compliance Requirement
Road Maintenance		<p>The Applicant must:</p> <p>(b) undertake a dilapidation survey of the condition of the heavy vehicle transport route along Blue Vale Road, Old Blue Vale Road, Kelvin Road and Orange Grove Road in accordance with any relevant Austroads standards or guidelines:</p> <ul style="list-style-type: none"> • within 1 month of the completion of construction, upgrading and/or decommissioning works; <p>(c) rehabilitate or make good any damage to the road that could endanger road safety prior to the commencement of upgrading and/or decommissioning works; and</p> <p>(d) rehabilitate and/or make good any development-related damage to these roads:</p> <ul style="list-style-type: none"> • identified during the carrying out of construction, upgrading and/or decommissioning works (if this damage could endanger road safety) as soon as possible after the damage is identified, but within 7 days at the latest; and • identified during any dilapidation survey carried out following the completion of construction, upgrading and/or decommissioning works within 2 months of the completion of the survey, unless the relevant road authority agrees otherwise, <p>to the satisfaction of the relevant road authority.</p> <p>If the construction, upgrading and/or decommissioning of the development is to be staged, the obligations in this condition apply to each stage of the construction, upgrading and/or decommissioning.</p> <p>If there is a dispute about the scope of any remedial works or the implementation of these works, then either party may refer the matter to the Secretary for resolution.</p>
Work as Executed Plans	CoA Schedule 2 (7)	Prior to the commencement of operation, or following the upgrades of any solar panels or ancillary infrastructure, the Applicant must submit work as executed plans to the development to the Department.
Notification of Works	CoA Schedule 2 (8)	Notify the Department of Planning, Industry and Environment in writing of the date of commencement of operations.
Occupation Certificate	CoA Schedule 2 (9)	Obtain Occupation Certificate(s) for use of the building works, pursuant to Part 4A of the <i>Environmental Planning and Assessment Act 1979</i> .
Emergency Response Plan	CoA Schedule 3 (27)	Preparation of an Emergency Response Plan in consultation with the Rural Fire Service and Fire & Rescue NSW.

**Table 2.1 – Environmental Hold Points**

Plan	Reference	Compliance Requirement
Operations Environmental Management Plan	SoC	Preparation of an Operations Environmental Management Plan, inclusive of a A Land Management Plan including weed management, An operational Waste Management Plan, An Emergency Response Plan, And A complaint handling procedure.
Decommissioning Management Plan	CoA Schedule 3 (32)	<p>Within 3 years of commencement of operations, the Applicant must prepare a Decommissioning & Rehabilitation Plan for the development which shall be reviewed 2 years prior to the cessation of operations, to the satisfaction of the Secretary. This plan must:</p> <ol style="list-style-type: none"> a) include detailed completion criteria for evaluating compliance with the rehabilitation objectives in Table 2 in the Development Consent; b) describe the measures that would be implemented to: <ul style="list-style-type: none"> • decommission the development and rehabilitate the site in accordance with the rehabilitation objectives in Table 2 and the associated completion criteria; • minimise the waste generated by the decommissioning of the development in accordance with the obligations in condition 30 above; and c) include a program to monitor and report on the implementation of these measures against the detailed completion criteria. <p>The Applicant must decommission and rehabilitate the site in accordance with the approved Decommissioning & Rehabilitation Plan.</p>
FUTURE UPGRADING OF SOLAR PANELS AND ANCILLARY INFRASTRUCTURE		
Revised Layout Plans	CoA Schedule 2 (6)	Plans must be submitted to the Department of Planning, Industry and Environment incorporating the proposed upgrades.
Notification of Works	CoA Schedule 2 (8)	Notify the Department of Planning, Industry and Environment in writing of the date of commencement of upgrading.
DECOMMISSIONING		
Notification of Works	CoA Schedule 2 (8)	Notify the Department of Planning, Industry and Environment in writing of the date of commencement of decommissioning.



Statutory Approvals

Statutory approvals include licences, permits, consents and/or authorisations that are required, pursuant to legislative obligations, prior to undertaking specific activities.

Approvals relevant to the GSF are listed below.

Table 3.1 – Statutory Approvals

Approval	Act	Comment
Part 4 Development Consent	<i>EP&A Act 1979</i>	Development Consent was granted under Part 4 of the EP&A Act (Independent Planning Commission) Reference No. SSD 8658 subject to a number of conditions of approval. A copy of the Development Consent is attached at Appendix A for Reference. The project must also comply with the Statement of Commitments set out in the EIS prepared for the GSF Development Consent Application.
Section 4.38	<i>EP&A Act 1979</i>	Section 4.38 of the EP&A Act allows the consent authority to grant development consent to a SSD which may be partly prohibited by an environmental planning instrument. Accordingly, development consent may be granted, inclusive of this subdivision.
s.138 Permit	<i>Roads Act 1993</i>	A permit is required for the creation of the new Access to the site from Orange Grove Road.
Class 1 Permit	<i>Schedule 1 Road Transport Act 2013</i>	A permit will need to be obtained by the Transport Contractor for the Over-Dimensional Vehicles required to access the site for delivering components of the substation.
s.68 Approval	<i>Local Government Act 1993</i>	Prior to installation of a septic tank to service the office building a s.68 approval is required to carry out a sewerage work. Portable chemical toilets are proposed for the construction workforce. No s.68 approval is required in this circumstance.
Construction and Occupation Certificates	<i>Environmental Planning and Assessment Act 1979</i>	For proposed building works.
s.99 Exemption	<i>Rural Fires Act 1997</i>	If proposed, prior to conducting any Hot Works in a Total Fire Ban an exemption must be obtained from the Commissioner of the NSW Rural Fire Service (RFS).
s.45 Notice of Proposal	<i>Electricity Supply Act 1995</i>	Work carried out by a network operator and comprising the erection, installation, extension or alteration of electricity works on any land is exempt from the requirement for an approval under the Local Government Act 1993, except in relation to buildings, however, no such work (other than routine repairs or maintenance work) may be carried out unless: notice of the proposal to carry out the work has been given to the local council, and the local council has been given a reasonable opportunity (being not less than 40 days from the date on which the notice was given) to make submissions to the network operator in relation to the proposal, and the network operator has given due consideration to any submissions so made.



Table 3.1 – Statutory Approvals

Approval	Act	Comment
ch.3 Environmental Protection License	<i>Protection of the Environment Operations Act 1997</i>	Will be sought for all relevant activities specified under Schedule 1 of the Act including but not limited to Electricity Generation.
Construction Certificates	<i>Building Code of Australia.</i>	All new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the Building Code of Australia.
Oversize/Overmass Permit	Heavy Vehicle National Law, Heavy Vehicle (Mass, Dimension and Loading) National Regulation	Access Permit will be required for the OD vehiclesconsult



Environmental Management

4.1 REQUIREMENT

This section of the EMS describes the roles and responsibilities for all relevant parties involved in the construction of the GSF, including relevant environmental due diligence induction provisions for ensuring that all employees, contractors and sub-contractors are aware of their environmental and compliance obligations.

4.2 DEVELOPMENT APPLICANT

Gunnedah Solar Farm Pty Ltd (GSFPL) is the development applicant and as such has ultimate responsibility and accountability to ensure that the GSF is designed, constructed, operated, upgraded and decommissioned in accordance with the Development Consent.

GSFPL's Project Director has full authority to ensure these obligations are met.

4.3 PCL CONSTRUCTORS PACIFIC RIM

PCL Constructors Pacific Rim (PCL) is the Engineering, Procurement and Construction Contractor with the responsibility to build the GSF for Canadian Solar. PCL's contractual obligations do not extend to the operation, upgrading or decommissioning of the GSF. The contractual requirements do, however, extend to the design and construction of the GSF in compliance with Canadian Solar's Development Consent.

Responsibilities and reporting lines for environmental matters are described in Table 5

Table 5- Roles and Responsibilities

Role	Responsibilities	Reports to
Project Manager	<p>PCL's Project Manager has full authority to ensure these contractual obligations, inclusive of environmental compliance requirements, are met. This responsibility extends to all employees and/or sub-contractors engaged by PCL to build the GSF.</p> <p>In addition, they will:</p> <ul style="list-style-type: none"> Review and approve of this EMS. Ensure works comply with all relevant regulatory and project requirements. Ensure this EMS and CEMP are fully implemented, and environmental protection is not secondary to other construction requirements. Liaise with Canadian Solar and regulatory authorities. Exercise a duty of care to the environment, cultural heritage matters and biosecurity matters. 	PCL Management, Canadian Solar and regulatory authorities



Role	Responsibilities	Reports to
	<ul style="list-style-type: none"> • Participate in pre-start meetings and tool-box talks as required. • Ensure that all personnel understand, accept and fully carry out their obligations for environmental protection and that they are adequately trained, instructed and resourced to fulfil their obligations. • Seek relevant approvals for any required works or changes to site conditions outside the limits of the applicable project approvals/permits/plans. • Assist with environmental compliance audits and incident investigations as required. • Direct that works be stopped immediately where there is an actual or potential risk of environmental harm. • Ensure Community Consultation is undertaken in accordance with the Stakeholder Engagement commitment in the EMS, CEMP and any other community engagement plans prepared for the project. 	
Construction Manager	<p>PCL's Construction Manager is responsible for ensuring that:</p> <ul style="list-style-type: none"> • All requisite environmental performance reporting is provided to Canadian Solar. • Undertaking monthly internal compliance audits on the implementation and effectiveness of the EMS and CEMP and associated sub-plans. • Co-operating as required with third party stakeholders. • Plan and organize works to reduce the risk of adverse environmental impacts. • Ensure works comply with all relevant regulatory and project requirements. • Ensure the EMS and CEMP are fully implemented, and environmental protection is not secondary to other construction requirements. • Exercise a duty of care to the environment, cultural heritage matters and biosecurity matters. • Ensure that tool-box talks are held weekly. • Participate in pre-start meetings and tool-box talks. • Notify the Project Manager of any required works or changes to site conditions outside the limits of the applicable project approvals/permits/plans to seek the necessary approvals. • Assist with environmental compliance audits and incident investigations as required. • Direct that works be stopped immediately where there is an actual or potential risk of environmental harm. 	Project Manager
Site Safety and Environmental Officer	<p>PCL's Site Safety & Environmental Officer (SSSEO) is responsible for ensuring that:</p>	Project Manager



Role	Responsibilities	Reports to
	<ul style="list-style-type: none"> • The CEMP is communicated to all PCL personnel and subcontractors working at the site. • Specialist consultants are engaged to perform specific functions as required with respect to Aboriginal heritage, biodiversity and groundcover rehabilitation. • The procedures and requirements of this CEMP is implemented to ensure environmental impacts are managed appropriately. • Monitoring and conducting frequent inspections to constantly check and evaluate the effectiveness of the EMS and CEMP. • Reporting all incidents, complaints and other work related environmental issues. • Overall person responsible for managing the environmental aspects of the project. • Coordinate environmental monitoring, EMS/CEMP reviews and compliance audits as required by the EMS/CEMP. • Ensure works comply with all relevant regulatory and project requirements. • Ensure the EMS/CEMP is fully implemented, and environmental protection is not secondary to other construction requirements. • Manage all environmental documentation and records. • Assist with daily pre-start meetings and weekly tool-box talks. • Implement PCL's SHEQ programs. • Prepare and deliver site induction training and maintain induction training records. • Ensure all personnel have completed a site induction prior to starting work. • Exercise a duty of care to the environment, cultural heritage matters and biosecurity matters. • Ensure the EMS/CEMP are available to all personnel. • Carry out environmental inspections and initiate actions to ensure compliance with the EMS/CEMP. <p>Participate in environmental compliance audits.</p> <p>Report on environmental performance at the site.</p> <p>Undertake incident investigations.</p> <p>Stop works where there is an actual or potential risk of environmental harm and notify the Project Manager and Construction Manager.</p>	
Senior Project Engineers & Supervisors	Plan and organize works to reduce the risk of adverse environmental impacts.	Construction Manager



Role	Responsibilities	Reports to
	<p>Ensure works comply with all relevant regulatory and project requirements.</p> <p>Ensure the EMS/CEMP are fully implemented, and environmental protection is not secondary to other construction requirements.</p> <p>Coordinate the implementation of the EMS/CEMP with the GSF SSEO.</p> <p>Coordinate action in emergency situations and allocate required resources.</p> <p>Exercise a duty of care to the environment, cultural heritage matters and biosecurity matters.</p> <p>Deliver weekly tool-box talks.</p> <p>Ensure all personnel have completed a site induction prior to starting work.</p> <p>Stop works where there is an actual or potential risk of environmental harm and notify the Construction Manager and SSEO.</p>	
Site Engineers	<p>Plan and organize works to reduce the risk of adverse environmental impacts.</p> <p>Ensure works comply with all relevant regulatory and project requirements.</p> <p>Ensure the EMS/CEMP are fully implemented, and environmental protection is not secondary to other construction requirements.</p> <p>Deliver daily pre-start meetings to their team.</p> <p>Ensure all personnel in their charge have completed a site induction and participate in the development of JSEAs and site meetings, tool-box talks and SHEQ programs.</p> <p>Instruct all personnel, sub-contractors and visitors within their area of responsibility in accordance with the requirements of the EMS/CEMP.</p> <p>Undertake environmental risk assessments where required.</p> <p>Exercise a duty of care to the environment, cultural heritage matters and biosecurity matters.</p> <p>Promote the reporting of all environmental incidents and near-misses.</p> <p>Assist with environmental compliance audits and incident investigations as required.</p> <p>Ensure that all personnel in their charge understand, accept and fully carry out their obligations for environmental protection and that they are adequately trained, instructed and resourced to fulfil their obligations.</p> <p>Stop works where there is an actual or potential risk of environmental harm and notify the Construction Manager and the SSEO.</p>	Senior Project Engineers



Role	Responsibilities	Reports to
Other personnel (includes PCL staff, sub-contractors and visitors)	<ul style="list-style-type: none"> • Regard environmental issues as a central theme in their actions. • Understanding and complying at all times with the requirements of this EMS and the CEMP; and • Reporting all incidents, complaints and other work related environmental issues to the SSEO Actively participate in the development of JSEAs and site meetings, tool-box talks and SHEQ programs. • Undertake works with a duty of care to the environment, cultural heritage matters and biosecurity matters. • Report to their relevant supervisor any defects in plant or equipment. • Keep work areas in a tidy state. • Undertake works as instructed by their relevant supervisor and in accordance with the EMS/CEMP. • Assist with environmental compliance audits and incident investigations as required. • Stop works where there is an actual or potential risk of environmental harm and notify the Construction Manager and Site Environmental Officer. 	Construction manager and Site Engineer

4.4 SPECIALIST CONSULTANTS

Specific actions triggered in specific circumstances, such as detailed in the *Chance Finds Protocol* and the *Landscaping Plan* will require the engagement of specialists to provide the appropriate advice and checks to ensure all actions required are completed in a competent manner. These specialists will include experts such as (but not limited to) an:

- archaeologist;
- Landscape Architect
- ecologist; and
- agronomist.

4.5 FUTURE RESPONSIBILITIES

GSFPL will ensure ongoing compliance with the Development Consent and will assume relevant responsibilities and accountability to operate, upgrade or decommission the GSF.

All future management plans for the project including operation and decommissioning management plans will be developed in compliance with the Development Consent and the latest version of this EMS.



Stakeholder Engagement

5.1 ACCESS TO INFORMATION

GSFPL will keep the local community and relevant agencies informed about the operation and environmental performance of the development by providing up to date information on the GSF on a dedicated website (<https://gunnedahsolar.com.au/>) and through the implementation the Community Engagement Plan attached at Appendix B.

5.2 WEBSITE

The GSF website will make the following information publicly available as relevant to the stage of the development:

- Environmental Impact Statement;
- Final layout plans for the development;
- Current statutory approvals for the development;
- Proposed staging plans for the construction, operation or decommissioning (if relevant);
- How complaints about the development can be made;
- A complaints register; and
- Any other matter required by the Secretary.



Complaints Management

6.1 SCOPE

This section describes the procedures that would be implemented to receive, handle, respond to and record complaints during construction and operation of the GSF.

6.2 MEANS OF MAKING A COMPLAINT

Prior to the commencement of the roads upgrades GSFPL will ensure that the following contact details are available for the community to make a complaint:

- a 24 hour telephone number;
- a postal address to which written complaints may be sent; and
- an email address to which electronic complaints may be transmitted.

These details will be:

- provided on the on the GSF website.

6.3 HOW ANY COMPLAINT WILL BE HANDLED

6.3.1 CONSTRUCTION

Any complaint received will be immediately logged in a [Complaints Register](#) and passed on to PCL's Site Environmental Officer (SEO).

As soon as is practicable the SEO will investigate the cause of the complaint and identify actions required to avoid a recurrence. Regardless of circumstance, this initial response will be completed within 24 hours of receiving the complaint.

If so requested when the complaint was received, the SEO will also make contact with the complainant to discuss the issue, the cause and advise them of the actions taken to avoid a recurrence.

This investigation and contact will be fully documented on a [Complaint Record](#).

6.3.2 OPERATION

Any complaint received will be immediately logged in a [Complaints Register](#).

As soon as is practicable the GSF Operations Manager will investigate the cause of the complaint and identify actions required to avoid a recurrence. Regardless of circumstance, this initial response will be completed within 24 hours of receiving the complaint.

If so requested when the complaint was received, the Operations Manager will also make contact with the complainant to discuss the cause and advise them of the actions taken to avoid a recurrence.

This investigation and contact will be fully documented on a [Complaint Record](#).



6.4 RECORDING COMPLAINTS

Any and every complaint will be documented through maintaining an up to date *Complaints Register* (cross referenced against a *Complaint Record*).

6.4.1 COMPLAINTS REGISTER

The *Complaints Register* will record:

- a complaint reference number;
- the date and time the complaint was received;
- whether the complainant wanted to be contacted; and
- the nature of the complaint.

For the life of the development the *Complaints Register* will be updated on a weekly basis and listed on the GSF website.

As the *Complaints Register* will be a publicly available document, it is not proposed to include details of who the complainant is on this register.

6.4.2 COMPLAINTS RECORD

The *Complaints Record* will record:

- the date and time of the complaint;
- the means by which the complaint was made (telephone, mail or email);
- any personal details of the complainant that were provided, or if no details were provided a note to that effect;
- the nature of the complaint;
- any actions taken in relation to the complaint, including timeframes for implementing the action;
- if no action was undertaken in relation to the complaint, the reasons why no action was taken; and
- if the complainant wanted to be contacted, whether the action taken was considered acceptable to the complainant.

A copy of every Complaints Record will be filed and held on-site and, on request, be provided to:

- the Department of Planning, Industry and Environment; or
- Environment Protection Authority;
- Gunnedah Shire Council; or
- the complainant.

As the *Complaints Record* will contain information on who made the complaint, it is not proposed to make this information publicly available on the GSF website.



Dispute Resolution

7.1 COMMITMENT

In the event that the procedure for investigating and responding to a complaint, including the implementation of measures for avoiding a recurrence cannot be resolved to the satisfaction of a third party, and a dispute does arise, GSFPL propose the following.

- Advise both DPIE and GSC that there is a dispute.
- Provide both DPIE and GSC with copies of the relevant complaint history, including relevant documentation in the form of **Complaints Record(s)**.
- Engage a specialist with expertise relevant to the issue at hand to investigate the dispute and provide recommendations for resolution.
- Advise the third party in dispute, DPIE and GSC, in writing, as to when the dispute investigation will be completed.
- Provide the third party, DPIE and GSC a copy of the dispute investigation report, inclusive of GSFPL's intentions with regards to the implementation of the recommendations for resolution.



Non-Compliance

8.1 COMMITMENT

A failure to comply with a Condition of Approval (CoA), Statement of Commitment (SoC) or statutory approval will constitute a non-compliance.

In the event of a non-compliance GSFPL will undertake the following five steps, consistent with the guidance advice for *ISO 14001 – Environmental management systems*.

Table 8.1 – Non-compliance Response

Step	Action
React	GSFPL will react to the non-compliance and, as applicable, <ol style="list-style-type: none"> 1. Take action to control and correct it. 2. Deal with the consequences, including mitigating adverse environmental impacts.
Evaluate	GSFPL will evaluate the need for action to eliminate the cause of the non-compliance in order that it does not recur or occur elsewhere by: <ol style="list-style-type: none"> 1. Reviewing the non-compliances. 2. Determining the cause of the non-compliances. 3. Determining if similar non-compliances exist, or could potentially occur.
Act	GSFPL will implement any action required.
Review	GSFPL will review the effectiveness of any corrective action taken.
Change	GSFPL will make changes to the environmental management plans, if necessary.

8.2 REPORTING OF ENVIRONMENTAL INCIDENTS CAUSING MATERIAL HARM

Reporting of environmental incidents will meet the requirements of Condition 3, Schedule 4. It will also follow obligations to report on material harm to the environment as defined in the NSW POEO Act 1997, in line with the Act's definition of 'material harm to the environment'.

In the case of an incident that consists 'material harm to the environment', immediately, and as soon as corrective actions have commenced and the immediate issue is under control, the site management team, or employee/person engaged in the activity, will notify the Secretary and any other relevant agencies of the incident.

Within 7 days of the date of the incident, the Applicant will provide the Secretary and any relevant agencies with a detailed report on the incident.

Examples of an environmental incident that results in 'material harm to the environment' could be:

- An uncontained spill into a water course resulting in actual harm to the health or safety of human beings or to the ecosystem(s) that is not trivial; or
- A breach of CHMP protocol, resulting in damage to an objective of aboriginal heritage value.



8.3 CORRECTIVE ACTION

Any non-compliance or environmental incident will trigger a Corrective Action appropriate to the significance of the effect of the non-compliance.

GSFPL will retain documented information as evidence of:

- The nature of the non-compliance and any subsequent actions taken; and
- The results of the Corrective Action.



Emergency Response

9.1 REQUIREMENT

This section of the environmental management strategy describes how and when procedures will be in place to respond to emergencies through the development of two management plans, to be prepared in consultation with relevant stakeholders.

9.2 FIRE MANAGEMENT PLAN & EMERGENCY RESPONSE PLAN

Construction

GSFPL has proposed the development of a Develop an Emergency Response Plan (ERP) in consultation with the NSW RFS District Fire Control Centre prior to construction. The ERP should include:

- *Foreseeable on-site and off-site fire events*
- *Clearly states work health safety risks and procedures to be followed by fire-fighters, including:*
 - Personal protective clothing*
 - Minimum level of respiratory protection (e.g. rubber fire fighter's boots and gloves, a self-contained breathing apparatus)*
 - Minimum evacuation zone distances*
 - A safe method of shutting down and isolating the PV system*
 - Training for fighting fires within solar farms*
 - Any other risk control measures required to be followed by fire-fighters*
- *Evacuation triggers and protocols.*

Two copies of this Emergency Response Plan will be stored in a prominent Emergency Information Cabinet located in a position directly adjacent to the site's main entry points.

GSFPL has also made a SoC that once constructed and prior to operation, the operator of GSF will make contact with the relevant local emergency management committee (LEMC).

Operation

A CoA requires the preparation a Fire Management Plan & Emergency Response Plan prior to the commencement of operations, and for this plan to be prepared in consultation with the Rural Fire Service and Fire and Rescue NSW.

CoA Schedule 3 (29) requires:

Prior to the commencement of operations, the Applicant must prepare a Fire Management and Emergency Response Plan for the development in consultation with the RFS and Fire & Rescue NSW. This plan must identify the fire risks and controls of the development, and the procedures that would be implemented if there is a fire on site or in the vicinity of the site. Two copies of the plan must be kept on site in a prominent position adjacent to the site entry point at all times.

This Plan will be prepared and forwarded to DPIE for approval prior to the commencement of operations



Environmental Plans

Provided below is a summary of all environmental plans that require submission to and/or approval from a third party stakeholder.

Table 10.1 – Environmental Plans

Plan	Parties to be consulted	Submitted to/Approved by	Status
PRIOR TO CONSTRUCTION			
Traffic Management Plan	Roads and Maritime Service Gunnedah Shire Council.	To the satisfaction of the Department of Planning, Industry and Environment.	To be approved
Final Layout Plans	-	Submitted to the Department of Planning, Industry and Environment.	To be Submitted
Landscaping Plan	Roads and Maritime Service Office of Environment and Heritage Gunnedah Shire Council	To the satisfaction of the Department of Planning, Industry and Environment.	To be Approved
Water Management Plan	DPIE, Department of Primary Industries – Water.	To the satisfaction of the Department of Planning, Industry and Environment.	To be Approved
Chance Finds Protocol	Registered Aboriginal Parties DPIE	To the satisfaction of the Department of Planning, Industry and Environment.	Approved
Construction Environmental Management Plan	DPIE, Department of Primary Industries – Water.	Submitted to the Department of Planning, Industry and Environment.	To be submitted for reference
PRIOR TO OPERATION			
Work as Executed Plans	-	Submitted to the Department of Planning, Industry and Environment.	To be submitted upon completion of works
Emergency Response Plan	Rural Fire Service Fire & Rescue NSW.	-	To be approved



Table 10.1 – Environmental Plans

Plan	Parties to be consulted	Submitted to/Approved by	Status
Operations Environmental Management Plan	-	Submitted to the Department of Planning, Industry and Environment.	To be submitted prior to commencement of operation
DURING OPERATION			
Decommissioning Management Plan	Rural Fire Service Fire & Rescue NSW.	Submitted to the Department of Planning, Industry and Environment.	To be submitted for approval within 3 years of operation
FUTURE UPGRADING OF SOLAR PANELS AND ANCILLARY INFRASTRUCTURE			
Revised Layout Plans	-As appropriate	Submitted to the Department of Planning, Industry and Environment.	To be submitted if developed.



Monitoring Plan

11.1 PERFORMANCE MONITORING

The intent with respect to monitoring compliance against the Development Consent will include both a high level management review of the effectiveness of this Environmental Management Strategy, complemented with very specific monitoring of on-ground procedures and work practices that will be detailed in the various environmental plans required as a precursor to construction, operations, upgrading and decommissioning of the GSF.

11.2 MANAGEMENT REVIEW

PCL will conduct two types of management reviews. An overview of these is provided below.

11.2.1 ROUTINE REVIEW

On at least one occasion during construction, operations, upgrading and decommissioning PCL will conduct a routine management review. The focus of the review will be on the effectiveness of this Environmental Management Strategy in achieving compliance with the Development Consent.

11.2.2 TRIGGERED REVIEW

Separate to the routine review, PCL will conduct a management review in the event of the following three circumstances:

1. There is an **environmental incident** with circumstances that have caused or threatened to cause material harm to the environment; or breached or exceeded the limits or performance measures/criteria in the Development Consent.
2. In the event that the procedure for investigating and responding to a complaint, including the implementation of measures for avoiding a recurrence cannot be resolved to the satisfaction of a third party, and a **dispute has arisen**.
3. Any **modifications to the existing Development Consent**

11.3 PLAN COMPLIANCE

The suite of plans to be prepared at various stages of the development (refer **Section 2.2**) will each contain procedures, responsibilities and performance measures for managing environmental impacts, whether it be during construction, operations, upgrading or decommissioning.

The three overarching plans, being the Construction Environmental Management Plan, Operations Environmental Management Plan and Decommissioning Management Plan will each provide a collated summary of the requisite monitoring required in that plan.



References

International Organization for Standardization (2015) *ISO 14001:2015(E) Environmental management systems – Requirements with guidance for use*

Department of Infrastructure Planning and Natural Resources (2004) *Guideline for the Preparation of Environmental Management Plans*

Gunnedah Solar Farm Environmental Impact Statement (KMH Environmental, April 2018),



CONSTRUCTION LEADERS

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Appendix A:

Gunnedah Solar Farm Development Consent SSD 8658



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Appendix B: GSF Community Engagement Plan