



NGH



FIRE MANAGEMENT AND EMERGENCY RESPONSE PLAN

Gregadoo Solar Farm

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TABLE OF CONTENTS

1. Introduction.....	1
1.1. Purpose and scope.....	1
1.2. The project.....	1
1.3. Environmental Management Strategic Framework	2
1.4. Agency submissions.....	2
2. Planning	3
2.1. Legislative and other fire management requirements	3
2.1.1. Guidelines and standards	3
2.2. Objectives and targets.....	3
2.2.1. Objectives	3
2.2.2. Targets	4
2.3. Conditions of consent.....	4
3. Risks and controls	6
3.1. Existing environment.....	6
3.2. Identification of fire risks.....	10
3.2.1. Bushfire and structural fire risk	10
3.2.2. Fire risk controls, maintenance, and materials	10
3.2.3. Shut down procedure	10
3.2.4. Bushfire protection guidelines.....	10
3.2.5. Asset protection zones.....	11
3.2.6. Fuel hazard management	12
3.2.7. Decontamination procedure.....	12
3.2.8. Firefighting resources and preparedness	12
3.2.9. Equipment management.....	13
4. Implementation and operation	15
4.1. Structure and responsibility	15
4.1.1. Environmental Management Team.....	15
4.2. Training, awareness and competence	16
4.2.1. Environmental induction.....	16
4.2.2. Pre-start meetings.....	17
4.3. Emergency communication	17
4.4. Site access	17
5. Measurement and evaluation	18

5.1. System monitoring and maintenance	18
5.2. FMERP monitoring and reporting	20
5.3. Fire report for all fire incidents	20
5.4. Document amendment and distribution	21
6. References	22
Appendix A Site characteristics	A-I
Appendix B Bushfire Action Statement	B-I
B.1 Roles and responsibilities	B-I
Appendix C Evacuation Protocol	C-I
C.1 Designated assembly points	C-I
C.2 Transport plan	C-I
C.3 Offsite Assembly areas	C-II
Appendix D Emergency Response – Fire Emergency Procedure	D-I
Appendix E Emergency contacts	E-I
Appendix F Consultation	F-I

FIGURES

Figure 3-1 Bushfire prone land (Project site outlined in red) (NSW RFS 2019)	7
Figure 3-2 Site infrastructure plan	8
Figure 3-3 Site location	9
Figure 6-1 Emergency response diagram	C-III
Figure 6-2 Transport and assembly areas	C-IV
Figure 6-3 Fire Hydrant Locations (Source: NSW RFS)	C-V

TABLE

Table 2-1 Conditions of consent and statements of commitments	4
Table 3-1 Contamination sources and corrective actions	12
Table 4-1 FMERP roles and responsibilities	15
Table 5-1 Audit summary table	18
Table 5-2 Reporting requirements	20

ACRONYMS AND ABBREVIATIONS

APZ	Asset Protection Zone
BFMC	Bushfire Management Committee
BFDP	Bushfire danger period
BFRMP	Bushfire Risk Management Plan
CoC	Conditions of Consent
CEMP	Construction Environmental Management Plan
DPIE	(NSW) Department of Planning, Industry and Environment
ECO	Emergency Control Organisation
EMS	Environmental Management Strategy
EIS	Environmental Impact Statement
EPA	Environment Protection Authority (Previously DECCW and/or OEH)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cwth)
ERSED	Erosion and Sediment
EWMS	Environmental Work Methods Statement
ESCP	Erosion and Sediment Control Plan
FMERP	Fire Management and Emergency Response Plan
HSEQ	Health Safety and Environment and Quality
HSSE	Health, Safety, Security and Environment
LEMC	Local Emergency Management Committee
NCC	National Construction Code
NSW NPWS	NSW National Parks and Wildlife Services
NSW	New South Wales
MP	Management Plan
SoC	Statement of Commitment
The proponent	Gregadoo Solar Farm Pty Ltd
The Project	Gregadoo Solar Farm
TMP	Traffic Management Plan

1. INTRODUCTION

1.1. PURPOSE AND SCOPE

Gregadoo Solar Farm Pty Ltd (the proponent) received planning approval on 11 December 2018 for the construction and operation of a 47 megawatt (MW) alternating current (AC) photovoltaic (PV) solar farm, located around 13 km south-east of Wagga Wagga within the Wagga Wagga Local Government Area (LGA). The Gregadoo Solar Farm ('the Project') is a State Significant Development (SSD 8825) and represents an important contribution to renewable energy generation in New South Wales.

This Fire Management and Emergency Response Plan (FMERP) has been prepared as part of the overall Environmental Management Strategy (EMS). The purpose of the FMERP is to identify fire risks and controls of the development and all procedures that would be implemented if a fire occurs on site or in the vicinity of the site. The FMERP applies to the construction, operational and decommissioning phases of the Project.

In particular, this FMERP:

- Describes relevant fire risks, controls, and emergency procedures for the Project.
- Describes the fire and emergency related roles and responsibilities of all key personnel involved.
- States objectives and targets for issues that are important to the environmental performance of the Project.
- Outlines a monitoring regime to check the adequacy of controls as they are implemented.

This FMERP is a subplan of the EMS for the Project and is applicable to all staff and sub-contractors associated with the Project.

1.2. THE PROJECT

The scope of works under the contract includes all works necessary to design, construct, test, commission, energise, operate, decommission, and train staff in the operation of an approximately 47 MW solar farm.

The scope of works consists of but is not limited to:

- Around 122,000 solar panels up to approximately 2.8 metres (m) in maximum height, mounted on a single axis tracking system.
- Small operations and maintenance building with associated car parking.
- Upgrade of two existing farm access points from Boiling Down Road.
- Internal access tracks.
- 8 inverter units, standing about 3.5 m above ground surface.
- Electrical substation along Boiling Down Road.
- Underground electrical cable reticulation.
- Security fencing and CCTV.
- Native vegetation planting for visual screening.
- Filling in three farm dams.
- Laydown area and security fencing.
- Underground 33 kilovolt (kV) or 132 kV transmission cables connecting the onsite substation to the TransGrid substation.

During construction, the development site will be accessed from two access points, south of the development site along Boiling Down Road. Boiling Down Road and its intersection with Ashfords Road will be upgraded in accordance with Traffic Design Group Australia suggestions and Wagga Wagga City Council requirements identified in the Traffic Impact Assessment in the Project's Environmental Impact Statement (EIS).

The construction period of the solar farm will last approximately 12 months from the commencement of site establishment work. Construction hours will be limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1pm. Night works are not anticipated to occur.

The estimated capital investment value of the Project is \$60.93 million.

1.3. ENVIRONMENTAL MANAGEMENT STRATEGIC FRAMEWORK

The overall environmental management system for construction of the Project is described in the EMS. This FMERP is part of the environmental management framework for the Project. Used together, the EMS, FMERP, strategies and procedures form management guides that clearly identify required environmental management actions for reference by personnel and contractors.

1.4. AGENCY SUBMISSIONS

A submission was received from Fire and Rescue NSW during the exhibition period of the Gregadoo Solar Farm EIS between 26 April and 26 May 2018. The items raised in the submission have been included in the Statement of Commitments (SoC) (refer Table 2-1).

Key requirements requested by Fire and Rescue NSW during the submission period were:

1. That a comprehensive Emergency Response Plan (ERP) is developed for the site.
2. That the ERP specifically addresses foreseeable onsite and offsite fire events and other emergency incidents (e.g. fires involving solar panel arrays, bushfires in the immediate vicinity or potential HAZMAT incidents).
3. That the ERP detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and safe method of shutting down and isolating the photovoltaic system (either in its entirety or partially, as determined by risk assessment).
4. Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site should also be included in the ERP.
5. That two copies of the ERP be stored in a prominent 'Emergency Information Cabinet' which is in a position directly adjacent to the site's main entry point(s).

This FMERP was developed in consultation with the relevant local emergency management committee (LEMC), the Riverina Bushfire Management Committee (BFMC).

2. PLANNING

2.1. LEGISLATIVE AND OTHER FIRE MANAGEMENT REQUIREMENTS

Legislation relevant to fire management and emergency response includes:

- *Rural Fires Act 1997.*

2.1.1. Guidelines and standards

The main guidelines, specifications and policy documents relevant to this FMERP include:

- Planning for Bush Fire Protection (PBP) Guidelines (RFS, 2019).
- Development Planning: A guide to developing a Bush Fire Emergency Management and Evacuation Plan (NSW RFS 2014).
- Standards for Asset Protection Zones.
- AS1940-2004: *The storage and handling of flammable and combustible liquids.*
- AS4777-2015: *Grid Connection of Energy Systems via Inverters.*
- AS 3959 – 1999: *Construction of buildings in bushfire prone areas.*
- National Construction Code (NCC).
- ISSC 3 Guideline for Managing Vegetation Near Power Lines.

2.2. OBJECTIVES AND TARGETS

2.2.1. Objectives

The key objective of the FMERP is to identify the fire risks and controls associated with the Project and identify procedures that are to be implemented in case of a fire on site or in the vicinity of the site. Specific objectives include:

- Secure the health, safety and welfare of all personnel on site.
- Contain an emergency.
- Protect property, plant, equipment and the environment.
- Manage the recovery and resumption of normal operations.

To achieve this objective, the proponent will:

- Ensure appropriate controls and procedures are implemented during operations to minimise fire risks.
- Ensure appropriate measures are implemented to address the mitigation measures detailed in the EIS, Response to Submissions (RTS) and Conditions of Consent (CoC).
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2.1 of this FMERP.

2.2.2. Targets

The following targets have been established for the management of fire risks and impacts during construction, operation and decommissioning of the Project:

- Ensure full compliance with the relevant legislative requirements.
- Ensure full compliance with relevant requirements of the EIS, RTS and CoC.

2.3. CONDITIONS OF CONSENT

CoCs and SoCs from the RTS are detailed below in Table 2-1. Schedule 3, Condition 26 of the CoC's identifies requirements for operating conditions, including those relating to fire risks.

- Schedule 3, Condition 27 of the CoCs requires preparation of a FMERP prior to the commencement of operations.

This FMERP meets these requirements.

Table 2-1 Conditions of consent and statements of commitments

Item	CoC/SoC	Where addressed
Conditions of Consent		
26	The Applicant must: a) minimise the fire risks of the development.	Design phase Construction phase
	b) ensure that the development: <ul style="list-style-type: none"> • Includes at least a 10 metre defendable space around the perimeter of the solar array area that permits unobstructed vehicle access; • manages the defendable space and solar array area as an Asset Protection Zone; • complies with the relevant asset protection requirements in the RFS's <i>Planning for Bushfire Protection 2006 (or equivalent) and Standards for Asset Protection Zones</i>; • is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65 mm Storz fitting located adjacent to the internal access road; 	Design phase
	c) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site; and	Section 4.1 Appendix B
	d) notify the relevant local emergency management committee following construction of the development, and prior to the commencement of operations.	Section 4.1
27	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 FMERP
Statement of Commitments		
BF1	A Fire Management Plan to be prepared in consultation with NSW RFS Riverina Fire Control Centre. The FMP shall include: <ul style="list-style-type: none"> • 24-hour emergency contact details including alternative telephone contact. 	Appendix B Appendix C

Fire Management and Emergency Response Plan
Gregadoo Solar Farm

Item	CoC/SoC	Where addressed
	<ul style="list-style-type: none"> • Site infrastructure plan. • Firefighting water supply plan. • Site access and internal road plan. • Construction of Asset Protection Zones (APZ) and their continued maintenance. • Location of hazards (physical, chemical and electrical) that will affect firefighting operations and procedures to manage identified hazards during firefighting operations. • Such additional matters as required by the NSW RFS District Office (FMP review and updates). 	
BF2	<p>A comprehensive ERP must be developed for the site. The ERP must include the following:</p> <ul style="list-style-type: none"> • Specific foreseeable on-site and off-site fire events and other emergency incidents. • Details of the appropriate risk control measures needed to be implemented in order to safely mitigate potential risk to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include level of protective clothing requires, minimum level of respiratory protection, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the photovoltaic system. • Other site specific risk control measures that may need to be implemented in a fire emergency. <p>Two copies of the ERP are to be stored in a prominent 'Emergency Information Cabinet' located directly adjacent the site's main entry points.</p> <p>Once constructed and prior to operation, the operator is to make contact with the Local Emergency Management Committee to register the site as hazardous.</p>	Appendix C Section 3.2 Section 3.2.8
BF3	<p>The entire solar array development footprint to be managed as an APZ as outlined within Section 4.1.3 and Appendix 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for Asset Protection Zones.</p>	Section 3.2.5
BF4	<p>A 20,000 litre water supply tank fitted with a 65 mm Storz fitting shall be located adjoining the internal property access road within the required APZ.</p>	Section 3.2.8
BF5	<p>To allow for emergency services personnel to undertake property protection activities, a 10 m defendable space (APZ) that permits a minimum 4 m wide, unobstructed vehicle access is to be provided around the perimeter of the solar array and associated infrastructure.</p>	Section 3.2.8

3. RISKS AND CONTROLS

3.1. EXISTING ENVIRONMENT

The Project site is within the area of operation of the Riverina BFMC. A Bushfire Risk Management Plan (BFRMP) has been established for the Riverina BFMC area (Riverina BFMC, 2018).

The annual Bush Fire Danger Period (BFDP) in the Riverina BFMC area generally commences on 1 November and concludes on 31 March. The typical / average climate in the Riverina BFMC area is temperate, with warm to hot dry summers and cool winters (Riverina BFMC, 2018). Prevailing weather conditions associated with the bushfire season in the Riverina BFMC area are north westerly winds accompanied by high daytime temperatures and low relative humidity with dry summer storms potentially producing lightning.

The Riverina BFMC area has on average 200 fires per year, of which two are considered major fires. The main sources of ignition in the Riverian BFMC area are lightning strikes (particularly from late spring and summer storms), agricultural machinery, escaped controlled permit burns and arson or careless acts by individuals (such as the use of cutting/welding equipment).

The Riverina BFMC area is located in the South West of New South Wales and includes the Local Government Areas (LGAs) of Coolamon, Junee, Lockhart and Wagga Wagga. The Riverina Zone Rural Fire Service team has over 60 Rural Fire brigades, covering an area of approximately 12,000 square kilometres. Fire and Rescue NSW brigades in the locality include Wagga Wagga, Junee, Lockhart and Coolamon. The Fire and Rescue NSW station is located at 36/38 The Esplanade in the centre of the Wagga Wagga townsite.

The Project site is currently used for grazing and agricultural purposes; therefore, understorey bushfire fuel loads vary from season to season. Existing bushfire hazards are present onsite, including several patches of open woodland, as well as planted rows of trees at several locations within the Project area. An existing transmission line runs along the northern boundary of the site 132 kV and connects project infrastructure to the existing substation situated on the corner of Boiling Down Road and Ashfords Road. There are 51 residences within one kilometre of the development site, including one associated property within the subject land. A group home for people with physical and mental disabilities, with approximately 20 residents and additional day visitors, is located on Olearia Place, approximately 700 m from the proposal boundary. The nearest non-associated sensitive receptor is a residential dwelling located on the opposite side of Redbank Road to the north-west of the subject land. This dwelling is surrounded by agricultural land use.

The Project site is identified as bushfire prone land (NSW RFS 2018) (Figure 3-1). The existing bushfire hazards within the development site are:

- Native derived and exotic grassland.
- Narrow strips of planted eucalypt woodland along the southern boundary and north-west boundary.
- Remnant patches of vegetation are located to the north east and south.
- Existing substation and upgrade infrastructure, and solar panel infrastructure.

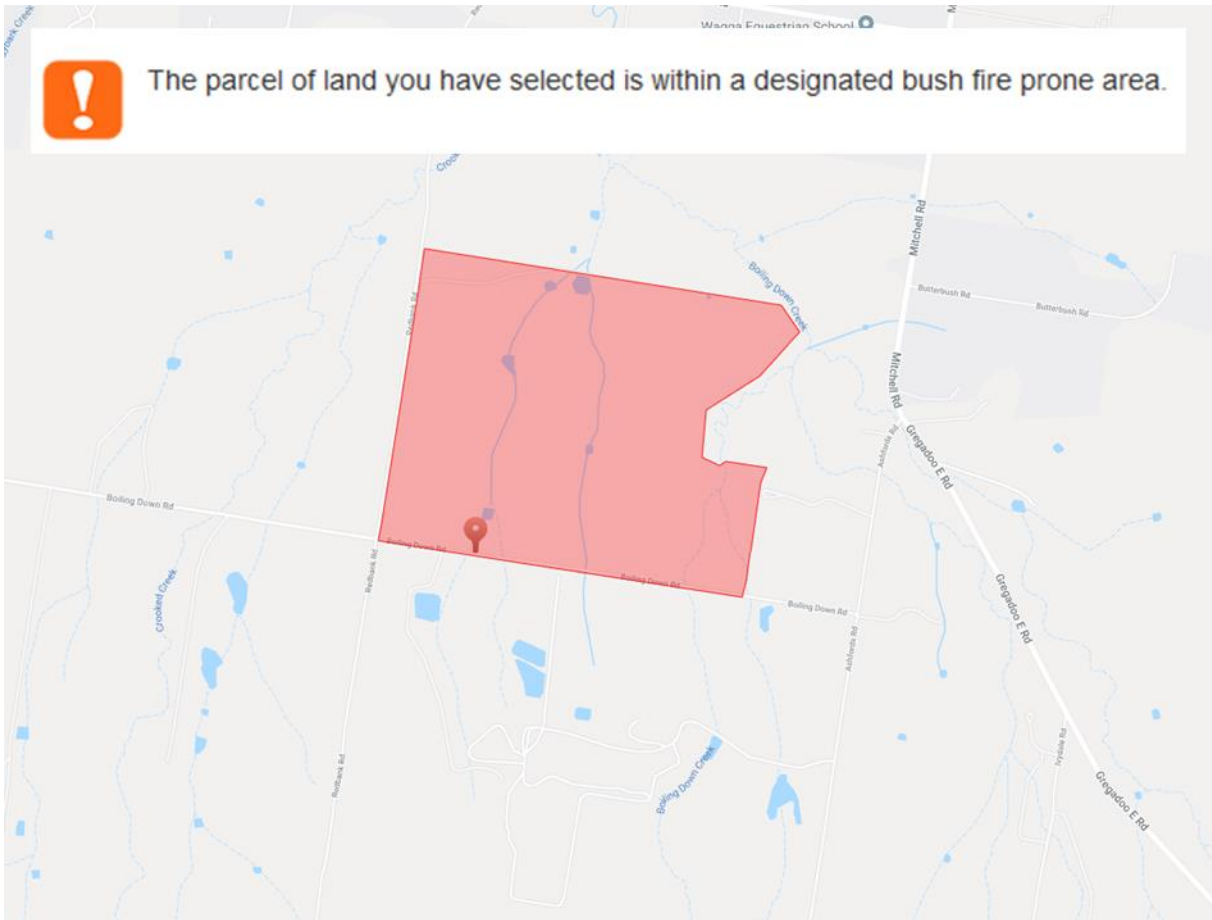


Figure 3-1 Bushfire prone land (Project site outlined in red) (NSW RFS 2019)

The Murrumbidgee River is located about 8 km to the north of the Project site. The nearest natural water course is Boiling Down Creek, which runs south-north through the Project site in the east. There are two drainage lines and two farm dams located within the northern portion of the Project site.

The Site Infrastructure Plan is provided in Figure 3-2. The site location is provided in Figure 3-3.

Fire Management and Emergency Response Plan
Gregadoo Solar Farm

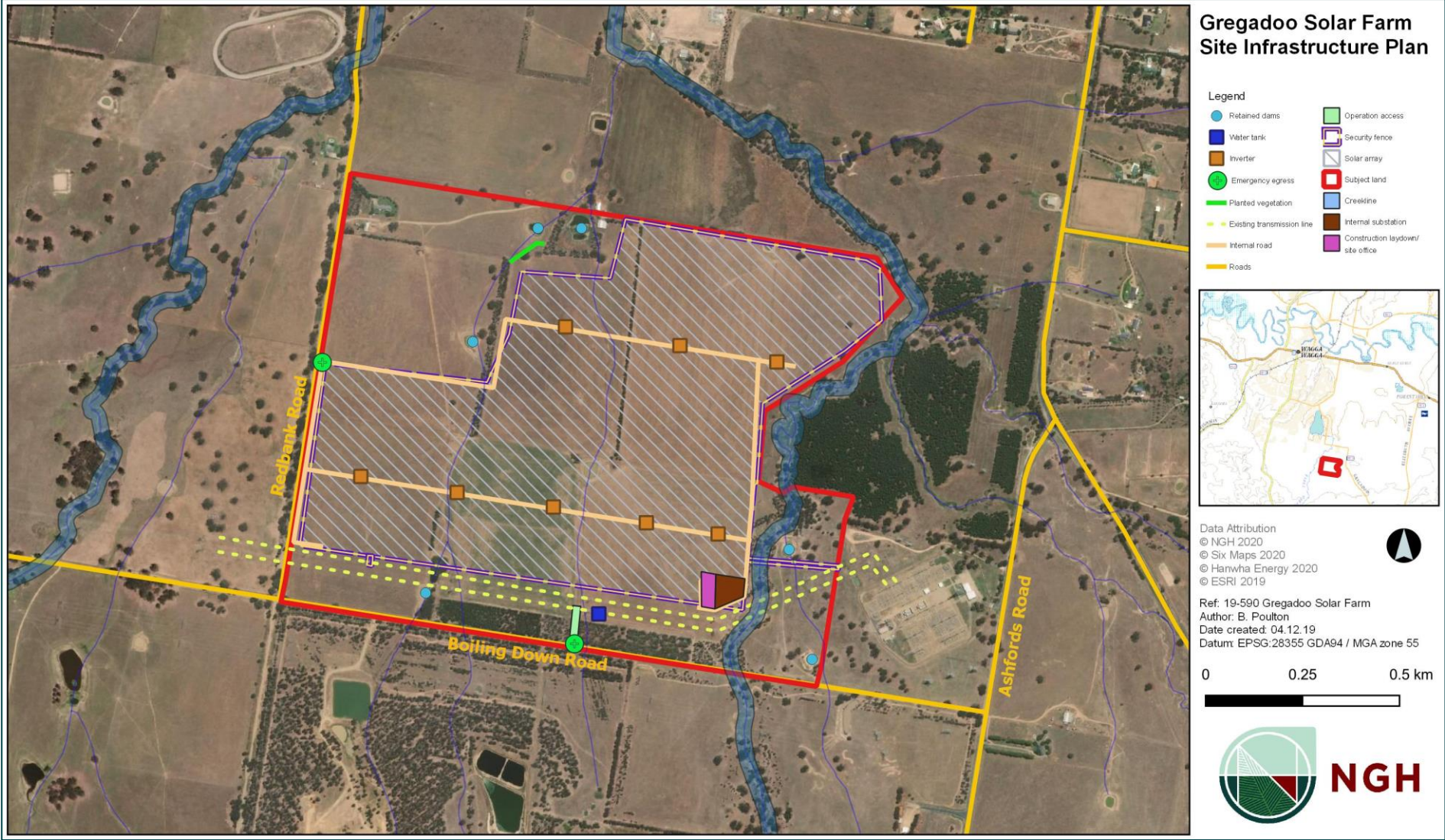


Figure 3-2 Site infrastructure plan



Figure 3-3 Site location

3.2. IDENTIFICATION OF FIRE RISKS

Potential risks of fire at the site include:

- Bushfire and structural fire risk.
- Maintenance (i.e. hot works) and use of combustible materials.

3.2.1. Bushfire and structural fire risk

Potential bushfire (including grass fire) hazards relate to the risk of the Project's infrastructure causing a bushfire and the risk of any bushfires affecting the solar farm. This could include:

- Hot works activities such as welding, soldering, grinding and use of a blow torch.
- Sparks and contact ignition from vehicles in long combustible vegetation.
- Smoking and careless disposal of cigarettes.
- Use of petrol-powered tools.
- Operating plant fitted with power hydraulics on land containing combustible material.
- Electrical faults during testing and commissioning.
- Storage of chemicals and hazardous materials.

3.2.2. Fire risk controls, maintenance, and materials

There is low fire risk during construction and decommissioning from the use of materials. The buildings on site will be constructed of low combustibility or non-combustible materials suitable for buildings of class 5 to 8 and 10 in accordance with the NCC. All electrical components will be designed and managed to minimise potential for ignition. The solar array, which will occupy most of the site, will be largely constructed of glass, silicon, steel and aluminium and will have very low flammability. The site office and staff amenity building will be incorporated into the solar farm substation area located in the south eastern corner of the development site.

A Sign in/Sign out register will be kept on site. This container will be clearly sign posted to notify emergency response personnel and provide accountability of onsite personnel during the event of an emergency.

3.2.3. Shut down procedure

The vast majority of power during construction would be provided by separate generators with the exception of the site office, thus a shutdown procedure is not required. Electricity generating infrastructure would not be tested using network electricity until commissioning at the commencement of the operation.

There is low fire risk during operation, as the buildings will be constructed of low-combustibility or non-combustible materials in accordance with the BCA. In the event of a fire, the AC circuit breaker in the substation would be closed remotely by operational staff. TransGrid would also be able to shut off the supply from outside the site if required. DC voltage within the panel array and inverters would not be able to be remotely isolated; as such, the voltage would be isolated in the field by a suitably qualified electrician or high voltage operator. Personnel would coordinate with FRNSW and RFS to manage fire emergencies.

3.2.4. Bushfire protection guidelines

In accordance with the PBP guidelines, an acceptable level of protection from bushfires is achieved through a combination of strategies which:

- Minimise the impact of radiant heat and direct flame contact by separating the development from the bush fire hazard.

- Reduce the rate of heat output (intensity) of a bush fire close to a development through control of fuel levels.
- Minimise the vulnerability of buildings to ignition from radiation and ember attack.
- Enable relatively safe access for the public and facilitate fire-fighting operations.
- Provide adequate water supplies for bush fire suppression operations.
- Facilitate the maintenance of APZs, fire trails, access for firefighting and on-site equipment for fire suppression.

The PBP guidelines provide six key bushfire protection measures for developments:

1. The provision of clear separation of buildings and bush fire hazards, in the form of fuel reduced APZ (comprising inner and outer protection areas and defendable space).
2. Appropriate access standards for residents, fire fighters, emergency service workers and those involved in evacuation.
3. Construction standards and design.
4. Adequate water supply and pressure.
5. Suitable landscaping, to limit fire spreading to a building.
6. Emergency management arrangements for fire protection and/or evacuation.

3.2.5. Asset protection zones

Appendix 2 of the PBP guidelines provides minimum APZ requirements for large-scale solar farm developments designated as bushfire prone. These APZ prescriptions will be applied to the solar farm infrastructure to provide defendable space and to manage heat intensities at the infrastructure interface.

The PBP guidelines indicate a minimum APZ width of 10 m for grassy woodlands (total fuel load 15 tonnes/hectare) and semi-arid woodlands (total fuel load 18 tonnes/hectare) on flat ground. This setback is based on the need to conform to Level 3 construction (AS 3959 – 1999) for a building of Class 1 or 2 under the National Construction Code (NCC).

Condition 26 (b) of Schedule 3 states that:

The Applicant must:

(b) Ensure that the development:

- *Includes at least a 10 m defendable space around the perimeter of the solar array area that permits unobstructed vehicle access.*
- *Manages the defendable space and solar array areas as an APZ.*
- *Complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2006 (or equivalent) and Standards for APZ.*
- *Is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65 mm Storz fitting located adjacent to the internal access road.*

An APZ of minimum width of 10 m will be provided around the solar farm buildings and substation and around the outside perimeter of the solar array (Figure 3-1). The 10 m APZ setback requirement will also be applied to any woody vegetation plantings undertaken around the perimeter of the solar farm. All of the APZs would be managed as an inner protection area.

The APZ surrounding the substation will include gravel surfacing to minimise the risk of fire escaping from the facilities and the risk of external fire affecting the facilities.

3.2.6. Fuel hazard management

According to the PBP guidelines, the APZ should provide a tree canopy cover of less than 15% located greater than 2 m from any part of the roofline of a dwelling. Trees should have lower limbs removed up to a height of 2 m above the ground. The understory should be managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season.

There will be no trees or shrubs within the APZ established for the solar farm, or within the solar array area. Grassland fuel hazard is a function of grass height and cover, with variation according to curing and species fuel characteristics. Grass fuel would be monitored and managed using stock grazing or mowing to maintain safe fuel levels. Grass height within the APZ will be maintained at or below 5 cm throughout the November-March fire season. Grass height outside the APZ, including beneath the solar array, will be maintained at or below 15 cm throughout the fire season.

The overhead powerlines at the site will be managed by maintaining appropriate vegetation clearances to minimise potential ignition risks, in accordance with the ISSC 3 *Guideline for Managing Vegetation Near Power Lines*.

3.2.7. Decontamination procedure

Solar panels and other infrastructure at the site do not contain heavy metals or polluting chemicals. Solar panels are constructed primarily using glass, graphite and copper mounted on steel frames.

Sources of chemical contamination at the site and decontamination actions are detailed in Table 3-1.

Table 3-1 Contamination sources and corrective actions

Chemical	Source	Cause	Consequence	Decontamination
Petrol and diesel	Vehicles, machinery, generators	Mechanical failure Human error during transfer	Fire (if ignited) Injury/fatality Soil/surface water/groundwater contamination	Defendable boundary for firefighting will be established. Use appropriate PPE. Spill clean-up using absorbent material. Excavation of contaminated soil and disposal at a licensed waste disposal facility.

In the event of contamination, the affected area would be cordoned off with yellow tape printed with the message “Caution Chemical Hazard.” Incidents would be reported to the NSW RFS District Office and immediately. Decontamination would be implemented as soon as practicable.

3.2.8. Firefighting resources and preparedness

Fire danger warning signs will be located at the entrance to the site compounds.

Condition 26 (b) of Schedule 3 states that:

The Applicant must:

(b) Ensure that the development:

- *Is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65 mm Storz fitting located adjacent to the internal access road.*

A 20,000 L steel or concrete water storage tank will be installed adjoining the main internal access road for firefighting and other non-potable water uses.

Rainwater tanks installed beside site buildings for staff amenities would also include a 65 mm Storz fitting. They will be made of non-combustible materials (steel or concrete) and will have appropriate firefighting fittings.

Once the solar farm is operational, suitable fire extinguishers and personal protective equipment (PPE) will be maintained at site buildings. This will include protective clothing and respiratory protection for each full time employee (3). Fuel presents the only source of potential decontamination onsite. Spill kits will be located at the site office. Additional equipment on site will include a 1000 L water cart with appropriate firefighting fittings retained on site on a precautionary basis, particularly during any blasting and welding operations. The water cart will be tested monthly throughout the BFD. Two spill kits will be stored at the site office and fire extinguishers will be located at each inverter module and the site office. Equipment lists will be detailed in Work Method Statements.

Safe and efficient access (suitable for firefighting appliances) would be established and maintained over the solar farm site. The APZ around the perimeter of the site will be suitable for Category 1 Firefighting Vehicles; these require a trafficable surface with a width of 4 metres with any curves having a minimum inner turning radius of 6 metres. The perimeter track will comply with the requirements for fire trails in section 4.1.3 of the PBP guidelines and the NSW RFS Fire Trail Standards (2019), including:

- A minimum carriageway width of 4 m with an additional 1m wide strip on each side of the trail clear of bushes and long grass.
- Capacity for passing using reversing bays and/or passing bays every 200 m suitable for fire tankers.
- Connection to the property access road and/or to the through road system at frequent intervals of 200 m or less.

Documentation of all firefighting resources will be maintained at the site, including an inspection and maintenance schedule.

Following commissioning of the solar farm, the NSW RFS and Fire and Rescue NSW local representatives will be invited to an information and orientation day covering access, infrastructure, firefighting resources on-site, fire control strategies and risks/hazards at the site. The preparedness of local NSW RFS and Fire and Rescue NSW brigades will be enhanced through site orientation and information events. Ongoing engagement with NSW RFS and Fire and Rescue NSW will be undertaken periodically to account for site and/or staff changes.

The NSW RFS and Fire and Rescue will be provided with a contact point for the solar farm, each time this FMERP is reviewed and updated. As a minimum, this will be at the commencement of construction, on commissioning the operational solar farm and just prior to decommissioning. Figure 6-1 identifies the location of emergency equipment on site during the construction and operations period. The emergency equipment will be put in place prior to the commencement of construction and will remain on site for use through the operational and decommissioning phases.

Figure 6-2 identifies the location of assembly areas in the case of emergency evacuation during construction or operations, and Figure 6-3 identifies fire hydrant locations.

3.2.9. Equipment management

Machinery capable of causing an ignition would not be used during bushfire danger weather, including total fire ban days.

A hot works permit system will be applied to ensure that adequate safety measures are in place. Fire extinguishers would be present during all hot works. Where possible hot works would be carried out in specific safe areas (such as the site compound).

Fire Management and Emergency Response Plan
Gregadoo Solar Farm

As identified in Appendix B, the Chief Warden and the Area Warden are responsible for shutting down the plant and/or equipment as necessary and if it is deemed safe to do so.

4. IMPLEMENTATION AND OPERATION

4.1. STRUCTURE AND RESPONSIBILITY

4.1.1. Environmental Management Team

The roles relevant to this FMERP and their responsibilities are detailed in Table 4-1. Specific roles and responsibilities during an emergency event are detailed in Appendix B.1.

Table 4-1 FMERP roles and responsibilities

Role	Responsibility
Site Manager	<ul style="list-style-type: none"> • Ensure that the ERP is developed, review and approved. • Ensure that the hazard identification and risk management activities include emergency situations. • Ensure that the emergency control organisation is established and maintains the requirements associated with this FMERP.
Health, Safety, Environment and Quality Officer (HSEQ)	<ul style="list-style-type: none"> • Emergency Planning Committee member. • Review procedures and organise test evacuations. • Report emergencies as per Incident Management Procedure • Ensure that emergency equipment inspections are completed as per requirements. • Coordinate Emergency Team meetings. • Ensure the Site Emergency Procedure is up to date and communicated adequately to all site personnel. • Plan and facilitate emergency evacuation trials. • Plan and arrange training for Emergency Wardens as required. • Liaise with Chief Emergency Warden and assist as required. • Provide advice to the LEMC as required. • Monitor changes in the work environment which may require the ERP to be updated.
Chief Warden	<ul style="list-style-type: none"> • The Chief Wardens' primary responsibility is to respond and co-ordinate the Emergency Control Organisation (ECO) in managing any emergency event until Emergency Services arrive.
Head Count Warden	<ul style="list-style-type: none"> • Ensure copies of sign on sheets are placed in the assembly point boxes each day after pre-start. • During an emergency evacuation collect the visitors register and sign on sheets and conduct a head count at the muster point. • Report head count status to the Chief Warden. "All persons accounted for" or "persons unaccounted for" giving details of missing persons.
ECO	<ul style="list-style-type: none"> • Undertake training and familiarisation required to fulfil allocated role in the event of an emergency. • Fulfil specified duties in the event of an emergency, or an emergency drill.
Emergency Committee	<ul style="list-style-type: none"> • Develop and maintain ERP and procedures. • Allocate ECO roles. • Arrange training and drills in accordance with ERP requirements. • Meet to discuss ERP and requirements as regularly as is deemed necessary, particularly in light of changes to site, activities or key personnel.

Role	Responsibility
	<ul style="list-style-type: none"> • Ensure all records associated with emergency activities are made available and kept in the specified records management system. • Monitor changes in the work environment which may require the ERP to be updated.
Health, Safety, Security and Environment (HSSE) Professional	<ul style="list-style-type: none"> • Ensure the ERP is in compliance with this procedure and also <i>AS3745 Planning for Emergencies in Facilities</i>. • Ensure that hazard identification and risk assessment activities include emergency situations. • Provide advice to the LEMC as required. • Monitor changes in the work environment which may require the ERP to be updated.
Emergency Services	<ul style="list-style-type: none"> • The role of Emergency Services is to provide the supporting resources to assist in the management of the emergency.
All Staff and Contractors	<ul style="list-style-type: none"> • Perform all duties in a manner which will ensure their own and others safety. • Comply with the responsibilities assigned under relevant legislation. • Comply with all site safety rules and procedures. • Remain alert at all times to potential fire hazards. • Participate in the identification and elimination of hazards. • Immediately report any dangerous occurrence, injury, hazard or defective equipment. • Maintain knowledge of how to implement safe work practices using the hazard identification, risk assessment and risk control techniques. • Maintain knowledge of emergency response procedures, including evacuation protocols and bushfire action statements. • Actively participating in safety meetings and programs, including training. • Actively participating in rehabilitation programs.

4.2. TRAINING, AWARENESS AND COMPETENCE

All site personnel including sub-contractors will be instructed of the correct response to an occurrence, or emergency evacuation in accordance with the various procedures outlined in the appendices to this FMERP, in particular:

- Emergency contacts.
- Emergency Response Diagram.
- Emergency Evacuation Protocol.
- Bushfire Action Statement.
- Emergency Services Contact Instruction.

The HSEQ will ensure that the Project personnel are trained to respond appropriately to fire emergencies.

An evacuation drill will be undertaken annually prior to the bushfire season to ensure understanding of roles and procedures.

4.2.1. Environmental induction

All employees, contractors and staff working on site will undergo induction training covering all procedures and protocols included in this FMERP. The site induction provides an introduction to fire risks and preventative controls as well as emergency procedures. Further details regarding staff induction and training are outlined in the EMS.

4.2.2. Pre-start meetings

Staff and contractors will attend pre-commencement meetings at the beginning of significant maintenance work, which will include, but not be limited to:

- Daily fire risk rating and predicted weather, including heat index, maximum predicted temperature and wind speeds.
- Recent fire events on or in the vicinity of the site.
- Specific fire risks relevant to the day's activities.

4.3. EMERGENCY COMMUNICATION

Radio and/or mobile telephone communications will be the main means of communications in the event of an emergency. A detailed communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs) will be established and implemented.

During an emergency, personnel are alerted by the call "Emergency, Emergency, Emergency."

The Chief Warden responds. The Chief Warden shall be in control of radio communications during an emergency. In the event of an emergency, persons not involved in the emergency shall maintain radio silence so as to allow radio communications between the Chief Warden and other services/ personnel involved in the emergency to flow uninterrupted.

A Sign in/Sign out register will be kept on site. This will be clearly sign posted to notify emergency response personnel and provide accountability of onsite personnel during the event of an emergency.

4.4. SITE ACCESS

Security measures for the site will ensure local Emergency Services are able to access the site at all times. Local emergency services, including the LEMC, will be consulted to establish the best method of ensuring access.

5. MEASUREMENT AND EVALUATION

5.1. SYSTEM MONITORING AND MAINTENANCE

Table 5-1 Audit summary table

No.	Audit	Requirement	Timing	Responsibility	Recipient
1	Internal audit	<p>Verify that the Project is compliant with conditions and that environmental control measures are effective.</p> <p>Audits will be planned, carried out and reported to provide assessment of the Project.</p>	<p>Monthly internal compliance audits will be conducted during the construction of the Project. Internal audits will verify that the Project is compliant with conditions and that environmental control measures are effective.</p> <p>More frequent auditing may occur if environmental checks indicate major deficiencies with environmental management of the site. Audits will be planned, carried out and reported to provide assessment of the Project.</p>	HSEQ Manager, Site Manager	Hanwha Energy
2	External audit (Condition 7 of Schedule 4, CoC)	<p>Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. The audit must:</p> <ul style="list-style-type: none"> be prepared in accordance with the relevant Independent Audit Post Approval requirements (DPE 2018). be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary. 	Within 6 months of the commencement of construction, or as directed by the Secretary.	Hanwha Energy	Hanwha Energy

No.	Audit	Requirement	Timing	Responsibility	Recipient
		<ul style="list-style-type: none"> • be carried out in consultation with the relevant agencies. • assess whether the development complies with the relevant requirements in this consent, and any strategy, plan or program required under this consent. • recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under this consent. <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.</p>			

5.2. FMERP MONITORING AND REPORTING

Monitoring will be undertaken to ensure the fire management program is achieving the required outcomes. This allows for an adaptive management approach and will enable the identification of issues and any remedial actions or adjustments to the FMERP. Reporting requirements are listed in Table 5-2.

Table 5-2 Reporting requirements

Reporting/ monitoring requirement	Timing
Prepare fire reports for ecological burns, accidental ignitions and bushfire incidents (See Section 5.3).	Immediately post-fire/incident.
Obtain copies of external agency fire reports for burns or incidents on the offset area (if managed by the NSW RFS or NSW National Parks and Wildlife Services (NPWS)).	Immediately post-fire/incident.
Review of fire reports to identify improvements needed and/or rehabilitation action – i.e. implementation of an adaptive management approach.	Immediately post-fire/incident Annually for reporting purposes.
Checklist to ensure all fire mitigation and prepared /response measures and procedures are in place.	Annually – pre- and post- fire season.
Fire regime analysis and report on success / failure of fire management activities/ actions.	Annually.
Vegetation condition and threatened species monitoring.	Biannually.
Archiving of all fire reports, reviews, fire management actions and monitoring results.	As required.

5.3. FIRE REPORT FOR ALL FIRE INCIDENTS

A fire report should be completed for all fires that occur on or in the vicinity of the site, including all small fires and ignitions, prescribed ecological burn fires and wildfires.

If the incident is managed by the NSW RFS or NPWS, the fire reports from that agency will be obtained, reviewed and kept on record for monitoring and reporting purposes for the Project.

A fire reporting should include details of the following:

- Fire name, ID and location.
- The person / agency responsible for the fire.
- The command and control arrangements / incident team.
- A fire map, including a hand sketch or geographical information systems (GIS) map of the fire perimeter, at 1:25,000 or greater (e.g. 1:10,000) scale over a topographic base map. Fire mapping should include known or suspected ignition point/s, fire perimeter, fire paths, asset damage, islands of unburnt areas, fire control lines, and other information specific to the fire.
- Fire behaviour at different times and locations.
- Fire management/control measures and strategies. This may include a list of equipment, personnel, vehicles utilised and their role (including agencies/equipment/personnel).
- Any unintended fire impacts to ecological values or other assets.

- Follow up action and additional reporting requirements, such as near-miss or injury, extent of the damage, post-fire assessment requirements.

The annual monitoring for the Project will include a summary of all ecological burns and fire incidents. The fire reports and outcome will also be used to inform an adaptive management approach (e.g. improvements in fire mitigation procedures and/or response procedures) and incorporated as part of the document amendment procedure (refer section 5.4).

5.4. DOCUMENT AMENDMENT AND DISTRIBUTION

This FMERP will be reviewed:

- Annually.
- When there is a change of method and/or technology that may require this document to be reviewed and updated.
- Following an emergency drill, response, or significant event to which the FMERP is relevant.
- As a result of a non-conformance identified in an audit.
- If there is a significant change in methodology or technology.
- In accordance with any requirements or requests made by the NSW RFS District Office.

All revisions will be identified in the revision status table as indicated in the document control table.

In accordance with Schedule 3 Condition 27:

Two copies of the [FMERP] must be kept on site in a prominent position adjacent to the site entry point at all times.

As per the condition, and as per the SoC established in response to the submission made by Fire and Rescue NSW, two copies of this FMERP will be stored in a prominent 'Emergency Information Cabinet' located in a position directly adjacent to the site's main entry point(s).

6. REFERENCES

NSW Rural Fire Service (RFS). (2014). *Development Planning: a guide to developing a Bush Fire Emergency Management and Evacuation Plan*.

https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0003/29271/DPP1079-Emergency-management-and-evacuation-plan-FORM.pdf

NSW RFS. (2019). *Planning for Bush Fire Protection: a guide for councils, planners, fire authorities and developers*.

NSW RFS (2019) *Fire Trail Standards*. https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0009/69552/Fire-Trail-Standards-V1.1.pdf

Riverina Bushfire Management Council (BFMC), (2018). *A Bushfire Risk Management Plan (BFRMP)*. https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0006/2400/Riverina-BFRMP.pdf

APPENDIX A SITE CHARACTERISTICS

Facility	
Facility type	Solar Farm.
Location	Wagga Wagga NSW.
Size of facility	96 ha of solar infrastructure, including site office and amenity building.
Condition of buildings on site	Well maintained.
Is the facility located in a bushfire prone area	Yes – the Project area is defined as bushfire prone land. See Figure 3-1.
How it may be affected by a bushfire	<ul style="list-style-type: none"> Destruction of infrastructure. Harm to staff and visitors. Grazing stock on site.
Are the buildings constructed against bushfire attack?	In accordance with PBP Guidelines, the office and amenity building will be designed and constructed commensurate with the level of bushfire risk, in accordance with the NCC
Is an APZ in place	Yes, in accordance with Appendix 2 of the PBP guidelines prescribing minimum APZ requirements.
Staff	
Number of staff on site	Up to 150 during peak construction, 3 during operations.
Number of staff with support needs	Assume at least one.
Location of staff on site	Across the site but concentrated at the office and amenity building.
Number of potential temporary occupants	Approximately 5.
Access and assembly	
Site access information	The site will be accessed off Boiling Down Road.
Emergency assembly point	Carpark near site office and substation.

The site layout is presented in Figure 3-2.

APPENDIX B BUSHFIRE ACTION STATEMENT

Stage	Trigger	Action
Preparation	Prior to bushfire season	Ensure all personnel are trained in emergency procedures and roles and responsibilities.
	At start of bushfire season	Ensure all fire control measures are in place. Ensure buildings are prepared to limit impact of a bushfire.
Response	Bushfire approaches	Alert emergency services. Initiate evacuation procedure (Refer Appendix C).
	Fire front impacts site	Remain at refuge.
Recovery	After fire front has passed	Check with emergency services that it is safe to return to site before doing so. Complete post-fire report (Refer Sections 5.2 and 0).

B.1 ROLES AND RESPONSIBILITIES

Position	Area of responsibility	Name and Mobile phone number
Chief Warden	<p>The Chief Wardens' primary responsibility is to respond and co-ordinate the Emergency Control Organisation (ECO) as a whole in managing any emergency event until Emergency Services arrive.</p> <p>Initial actions of the Chief Warden</p> <ul style="list-style-type: none"> • Proceed to scene/ area. • Evaluate the extent of the emergency. • Activate any alarms as required and request Emergency Services. • If safe to do so respond to any fire or spill and attempt to prevent escalation of incident. • Coordinate area wardens to initiate evacuation and area sweeps. • Shut down plant/ equipment as necessary and if safe to do so. <p>Ongoing actions of the Chief Warden</p> <ul style="list-style-type: none"> • Continue to coordinate and manage emergency until Emergency Services arrive on site. • Ensure the flow of up-to-date information is maintained at regular intervals with Area Warden. • Liaise with emergency services. 	

Position	Area of responsibility	Name and Mobile phone number
	<p>Concluding actions of the Chief Warden</p> <ul style="list-style-type: none"> • Prior to standing down ensure all ongoing and outstanding matters and obligations are completed. • Facilitate post incident review or investigation process. • Complete the log of events for the Project/Operations Manager and the Local Emergency Management Committee (LEMC) to review the effectiveness of the emergency. 	
<p>Area Warden</p>	<p>Initial actions of the Area Warden</p> <ul style="list-style-type: none"> • Proceed to scene/ area. • Evaluate the extent of the Emergency. • If safe to do so respond to any fire or spill and attempt to prevent escalation of incident. • Shut down plant/ equipment as necessary and if safe to do so. • Activate any alarms if required. • Evacuate personnel and casualties (where required). • Provide for first aid/medical assistance and / or coordinate first aiders within team. • Notify and provide a situation report to the Chief Warden providing a description of the incident and providing details of: <ul style="list-style-type: none"> ○ Threats, injuries, fatalities. ○ Environmental threat and damage. ○ Equipment threat and damage. ○ Actions taken. ○ Any further support required at site. • Assist the Chief Warden in appropriate plan of action to contain the immediate situation. <p>Ongoing actions of the Area Warden</p> <ul style="list-style-type: none"> • Continue to review and respond to emergency until the Chief Warden arrives on site to manage the emergency. • Ensure the flow of up-to-date information is maintained at regular intervals to the Chief Warden. • Assist emergency services at the scene. • Account for all personnel within their area (including contractors and visitors) at muster point. • Control access to the emergency site and implement restrictions on normal operations as appropriate until the Chief Warden arrives on site to manage the emergency. <p>Concluding actions of the Area Warden</p> <ul style="list-style-type: none"> • Prior to standing down ensure all ongoing and outstanding matters and obligations are completed. 	
<p>Emergency Log Keeper</p>	<p>Ongoing actions of the Emergency Log Keeper</p> <ul style="list-style-type: none"> • Keep a timeline record of events / communications during an emergency event. Continually review the incident log for accuracy and if recording by electronic means, ensure that the data being entered is saved or backed up. 	

Position	Area of responsibility	Name and Mobile phone number
	<ul style="list-style-type: none"> • As requested, copy or print off log sheets for interested parties and mark the log sheet as an uncontrolled copy. • As this recording role is critical – The log keeper must not get involved in any activities other than on this checklist. • Clarify any confusion of events/actions as soon as apparent. <p>Stand Down Actions of the Emergency Log Keeper</p> <ul style="list-style-type: none"> • Under the direction of the Chief Warden, help coordinate post incident review or investigation process. • Complete the log of events for the Chief Warden. • On advice from the Chief Warden, complete all necessary log keeping and administration requirements. • Participate in the debrief. • Ensure all information received is filed correctly. 	
Head Count Warden	<ul style="list-style-type: none"> • Ensure copies of sign on sheets are placed in the assembly point boxes each day after pre-start. • During an emergency evacuation collect the visitors register and sign on sheets and conduct a head count at the muster point. • Report head count status to the Chief Warden. “All persons accounted for” or “persons unaccounted for” giving details of missing persons. 	
Emergency Control Organisation	<ul style="list-style-type: none"> • Undertake training and familiarisation required to fulfil allocated role in the event of an emergency. • Fulfil specified duties in the event of an emergency, or an emergency drill. 	
First Aid Personnel	<p>Initial actions of First Aid Personnel</p> <p>Under the direction of the Chief Warden or Area Warden:</p> <ul style="list-style-type: none"> • Proceed to scene with relevant Area Warden. • Evaluate the extent of any injuries. • Administer first aid (<i>first aid personnel only, and only where safe to do so</i>); or • Assess if injured personnel can be evacuated safely. <p>Ongoing actions of First Aid Personnel</p> <ul style="list-style-type: none"> • Evacuate and attend any injuries at muster points. • Notify Emergency Services of any remaining personnel, and location, within building. • Provide details to Emergency Services of suspected injuries. • Assist Emergency Services onsite where required with ongoing treatment of injuries. 	
Emergency Services	<ul style="list-style-type: none"> • The role of the Emergency Services is to provide the supporting resources to assist in the management of the emergency. 	Triple Zero (000)

Note – individual personnel will take on multiple emergency roles. This will be determined as the roles are assigned in the operational phase.

APPENDIX C EVACUATION PROTOCOL

In case of a fire emergency on site, the primary plan of action is evacuation. Details and protocol are described below.

C.1 DESIGNATED ASSEMBLY POINTS

In the event of a bushfire, personnel on site are to proceed to one of the designated assembly points on site (Figure 6-1). These are located in the carpark by the Operations and Maintenance building along the southern boundary of the site.

Once all staff have assembled at the designated assembly points, transport to the off-site assembly area will commence. This involves exiting the Project via vehicle as there are no safe, shaded locations on site.

C.2 TRANSPORT PLAN

Private vehicles will be used to transport personnel to the assembly area. All personnel will evacuate site via the main site access point and be transported to the assembly area (Figure 6-2).

The primary and alternate assembly areas and access routes are described in section 5.

C.3 OFFSITE ASSEMBLY AREAS

Assembly area	Primary assembly area	Alternate assembly area
Location	Apex Park, Lake Street, Lake Albert NSW 2650	Wagga City Aero Club Elizabeth Avenue Forest Hill NSW 2650
Is the assembly area in an area away from effects of a bushfire	Yes	Yes
Are amenities available	Yes	Yes
Can the assembly area accommodate the number of occupants?	Yes	Yes
Are there any personnel with support needs requiring a facility to support them?	Potentially	Potentially
Transportation to assembly area	Primary assembly area	Alternate assembly area
Route from site to assembly area	Travel west along Boiling Down Road, north up Redbank Road, west on Gregadoo Road, north on Main Street and west onto Lake Street.	Travel east along Boiling Down Road, north up Mitchell Road and east on Inglewood Road.
Distance/time from site to assembly area	5 km, 7 minute drive	10.7 km, 8 minute drive
Is the route to the assembly area through or near bushfire risk areas?	The route is through land mapped as bushfire prone. Should the route be compromised, the Riverina Local Emergency Management Committee is placed to organised detours for access into the Lake Albert town centre, as well as other emergency management procedures for the area.	
Is transport provided on site for all personnel?	Private vehicles will be used.	
Are there any personnel with support needs requiring specific transport?	Potentially. Any personnel with specific transport needs will utilise the same transport (i.e. a specialised vehicle) to depart the site.	

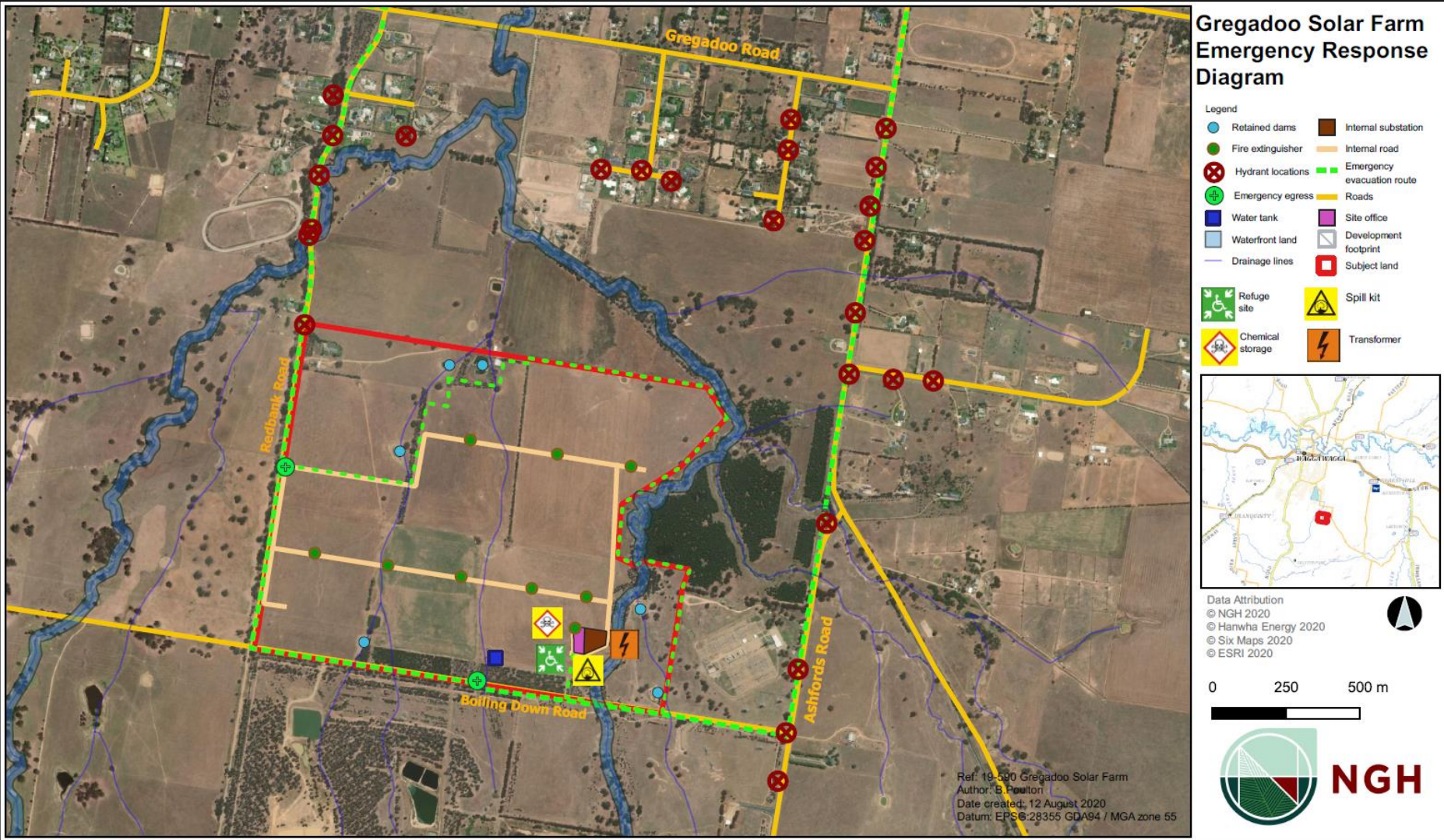


Figure 6-1 Emergency response diagram

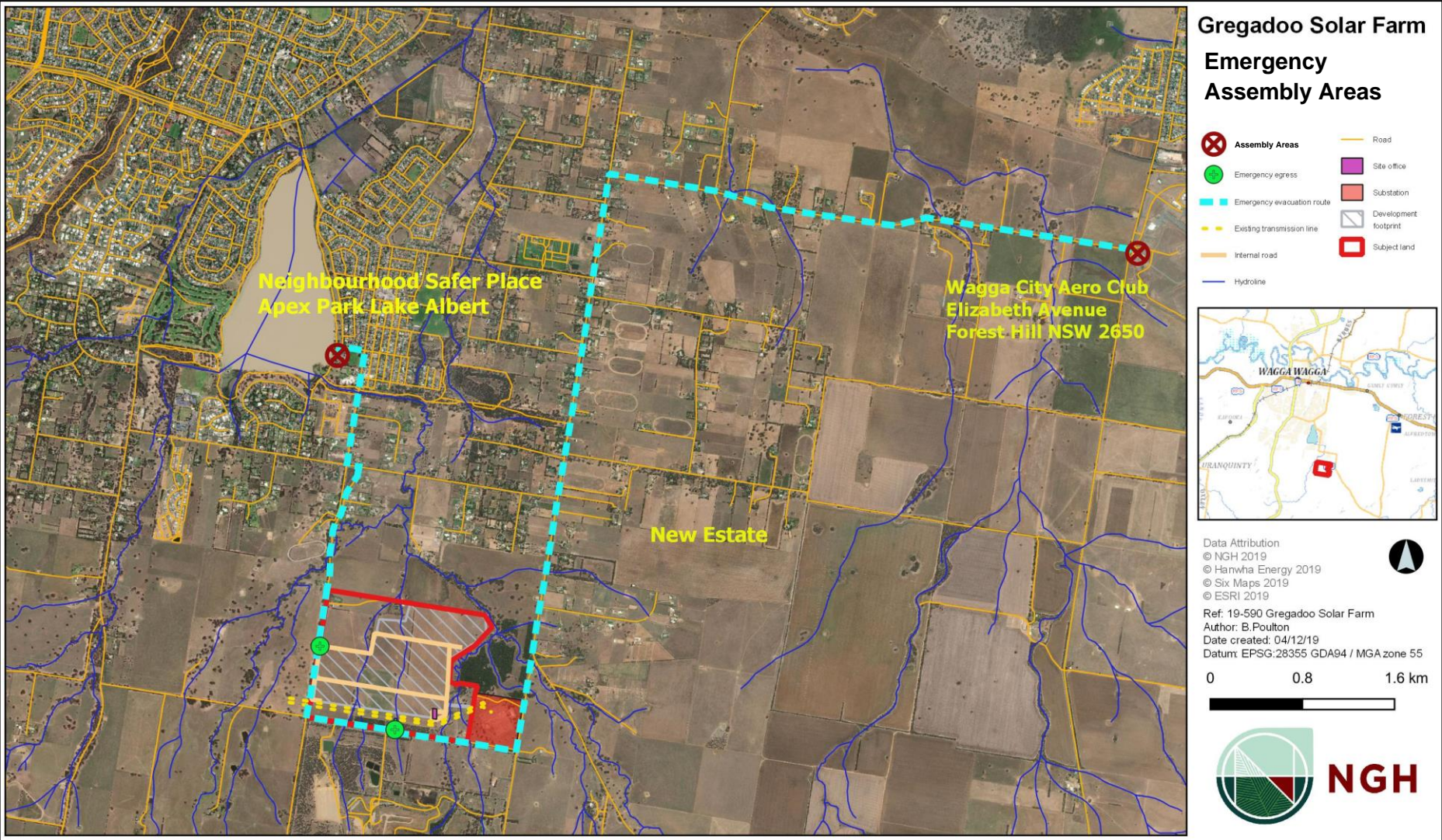


Figure 6-2 Transport and assembly areas

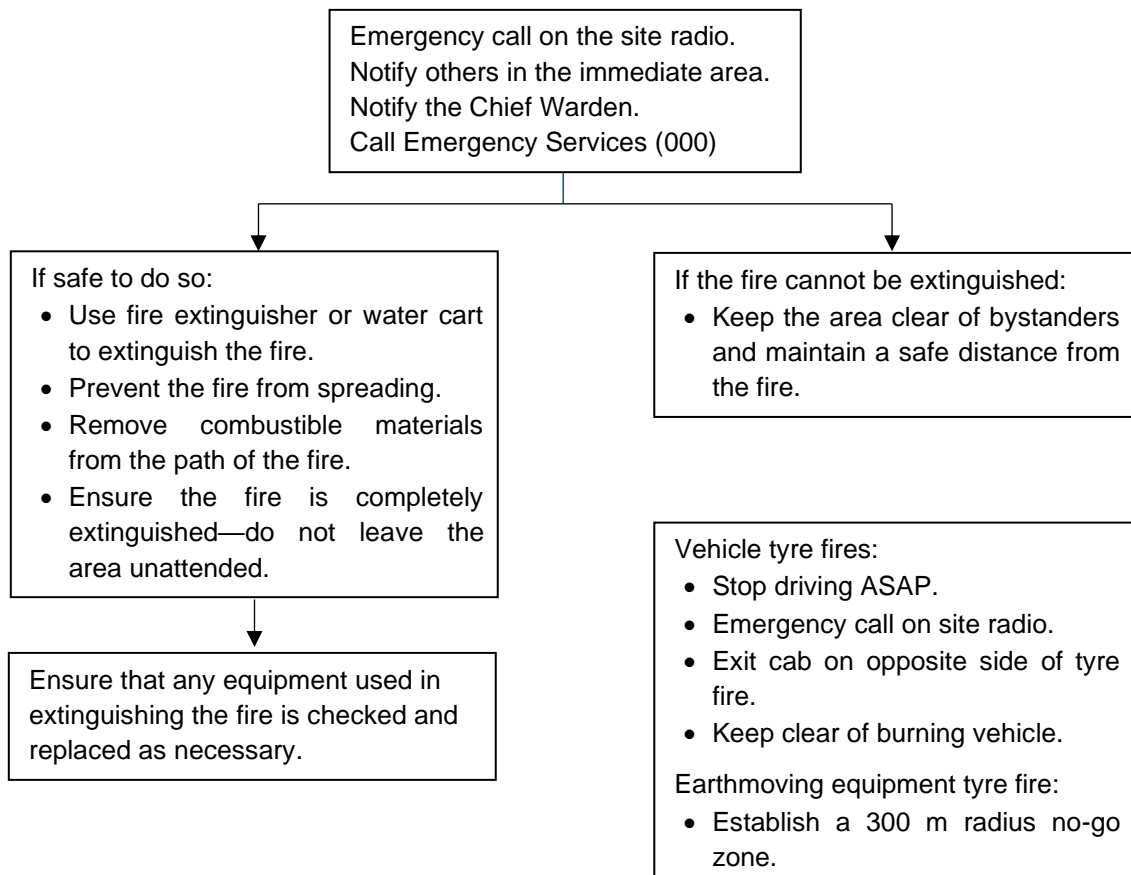
Fire Management and Emergency Response Plan
Gregadoo Solar Farm



Figure 6-3 Fire Hydrant Locations (Source: NSW RFS)

APPENDIX D EMERGENCY RESPONSE – FIRE EMERGENCY PROCEDURE

In case of fire on site, follow the steps below:



APPENDIX E EMERGENCY CONTACTS

Organisation	Office/contact	Phone number
NSW Rural Fire Service	Wagga Wagga Fire Control Centre	Business Hrs: 02 6971 4500 After Hrs: 02 6971 4591
NSW Rural Fire Service	Bushfire information line	1800 679 737 1800 NSW RFS www.rfs.nsw.gov.au
Fire and Rescue NSW	Wagga Wagga Fire Station	(02) 6921 4375
Emergency services	Ambulance	000
Riverina Local Emergency Management Committee	Local Emergency Management Officer	(02) 6922 2612 0429 819 745
NSW State Emergency Services	Inquiry contact	132 737 www.ses.nsw.gov.au
Wagga Wagga police station	Local police	(02) 6922 2599

APPENDIX F CONSULTATION

Agency Comment	Response
NSW Rural Fire Service on Final V1.0 (June 2020)	
Riverina BFRMP 2008 has been replaced by the Riverina BFRMP 2018.	References changed in Section 3.1 and reference list.
Change 'bushfire season' to 'annual Bushfire Danger Period (BFDP).'	Reference changed in Section 3.1.
BFDP commences 1 November (not 1 October)	Reference changed in Section 3.1 and Section 3.2.6.
Change 'Riverina Rural Fire Service' to 'Riverina Zone Rural Fire Service.'	Reference changed in Section 3.1.
Fire Rescue NSW locality includes Wagga Wagga, Junee, Lockhart and Coolamon.	Reference changed in Section 3.1.
NSW Rural Fire Service station address incorrect.	Reference changed in Section 3.1.
Update nearby residences to include group home for people with physical and mental disabilities.	Reference in Section 3.1 updated.
Grasslands is considered medium bushfire risk vegetation and holds a higher risk rating than remnant vegetation.	Reference in Section 3.1 updated.
Change 'RFS Connectivity' changed to '65 mm storz fitting.'	Reference in Section 3.2.8 updated.
The 1000 L water cart should be tested monthly during the BFDP.	Reference in Section 3.2.8 updated.
Expand 'suitable firefighting appliances' to include Category 1 Firefighting Vehicles; these require a trafficable surface with a width of 4 metres with any curves having a minimum inner turning radius of 6 metres. Ref Document NSW RFS Fire Trail Standards March 2019.	Reference in Section 3.2.8 updated.
Add emergency services 000 to Appendix C.	Appendix C updated.
Consider using the NSP at Apex Park Lake Albert [as the primary refuge site] as it is a registered Neighbourhood Safer Place with the NSW RFS.	Appendix C updated. Figure 6-1 and Figure 6-2 updated.

Agency Comment	Response
Figure 6-1: There is reticulated water (fire hydrants) situated on Ashfords Road. Can these be included in your mapping and the key?	Figure 6-1 updated.
Change 'Wagga Wagga RFS' to 'Wagga Wagga Fire Control Centre.'	Appendix E updated.
Include Fire Rescue NSW 000 in emergency contacts	Appendix E updated.
Provide locations of nearby fire hydrants on maps	Figure 6-3 added.
Replace "Refuge site" with "assembly area" in Appendix C.	Appendix C updated.
FRNSW on Final V1.1 (6 August 2020)	
Section 2.1.1, Guidelines and Standards references AS1940-2004 the storage and handling of flammable and combustible liquids. Are flammable or combustible liquids stored on site? The location of these needs to be noted on the detailed site map, appropriate placarding displayed, and a manifest maintained and made available to emergency crews as per <i>NSW Work Health and Safety Regulation 2017</i> .	It is likely that a small amount of flammable material will be held on site. Figure 6-1 has been updated to include the location of hazardous chemicals.
Section 2.1.1. Building Code of Australia (BCA) has been superseded by the National Construction Code.	Section 2.1.1 has been updated.
Table 2.1 Conditions of Consent and statement of commitments, specifically item BF2 states <i>A comprehensive ERP must be developed for the site. The ERP must include the following: Details of the appropriate risk control measures needed to be implemented in order to safely mitigate potential risk to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include level of protective clothing requires, minimum level of respiratory protection, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the photovoltaic system.</i> This has not been included in the plan. This is critical information for the health and safety of responding emergency service workers and should be included in the plan.	Section 3.2.8 identifies that site buildings will contain protective clothing, respiratory protection, and decontamination facilities in line with best practice. Section 3.2.3 identifies a system shut down procedure. Appendix C identifies the evacuation protocol, including evacuation sites.

Agency Comment	Response
Section 3.1 <i>Existing environment</i> states <i>NSW Rural Fire Service stations are located at 36/38 The Esplanade in the centre of the Wagga Wagga townsite and on Michell Road in Lake Albert.</i> This is incorrect, Fire and Rescue NSW Wagga Wagga Fire station is located at 36/38 The Esplanade, Wagga Wagga, NSW Rural Fire Service Lake Albert Brigade is located on Mitchell Road in Lake Albert.	Section 3.1 updated.
Section 3.2.6 states: <i>The preparedness of local RFS and Fire and Rescue brigades will be enhanced through site orientation and information events.</i> Is there a plan for ongoing engagement with the local fire services following the initial orientation? This may be required periodically to ensure staff changeover is accounted for.	Section 3.2.8 updated.
Appendix B, Table B-1 <i>Roles and Responsibilities</i> notes 5 roles within the Emergency Control Organisation (ECO) being Chief Warden, Area Warden, Emergency Log Keeper, Head Count Warden and First Aid personnel, however Appendix A Site Characteristics notes number of staff on site during operations is 3. If personnel are to take on multiple roles within the ECO this should be noted.	Personnel will take on multiple roles within the ECO. Appendix B has been updated to note this.
Figure 6.1 <i>Emergency Response Diagram</i> is complex and hard to read. I would suggest 2 diagrams, one to show site location and unaffected residences (including aerial imagery) and a second detailed site plan using standard symbology (refer to the FRNSW Fire Safety Guideline : Emergency Service Information Package and Tactical Fire Plans). The detailed site plan should also include Fire water location, assembly areas, restricted access zones, electrical shut off points etc which have not been included in the Emergency Response Diagram.	Figure 6-1 has been split into two figures. Figure 3-3 identifies the site location, including emergency evacuation routes. Figure 6-1 is an update emergency response diagram identifying requested components, where relevant.
Appendix D <i>Emergency Response – Fire Emergency Procedure</i> indicates calling emergency services “if the fire cannot be extinguished.” I would suggest that emergency services should be called before attempting to extinguish. Waiting to respond emergency services may lead to a significant delay and result in the initial fire developing into a larger	Appendix D has been updated accordingly.

Agency Comment	Response
incident before emergency services can arrive on scene. There is no cost or penalty for emergency services to respond to a fire that has been extinguished before their arrival.	
Appendix E Emergency Contacts only lists the NSW Rural Fire Service and NSW Ambulance (000). Consideration should be given to including Fire and Rescue NSW, NSW State Emergency Service (NSWSES), NSW Police etc.	Appendix E has been updated to include these contacts
DPIE on Final V1.1 (6 August 2020)	
Figure 6-1 Emergency response diagram - details infrastructure relating to fire incidents – this plan looks to cover most things that would be in a site infrastructure plan. Please incorporate site infrastructure in the name of this diagram or provide a specific site infrastructure plan.	Figure 3-2 has been updated and renamed the site infrastructure plan. Figure 6-1 relates to emergency response preparedness, rather than general infrastructure.
<p>Section 4.5 addresses document amendment and distribution. It states that where there is a change in method and/or technology that may require a review/update of this document. It doesn't however specifically identify any requirements to update by the NSW RFS District Office.</p> <p>Section 4.5 to include the requirements to update the document/processes as required by the NSW RFS District Office.</p>	<p>Former Section 4.5 has been moved, and is now Section 5.4.</p> <p>RFS did not provide any requirements for these requirements. Section 5.4 has been amended to state that the FMERP will be updated in accordance with RFS requests, as well as with any significant changes in methodology or technology..</p>
Section 3.2.2 Shut down procedure - must be written prior to operational phase – update review section of this document to identify a review and update of the plan prior to operation.	Section 3.2.2 has been updated committing Hanwha to update the FMERP prior to operation in accordance with section 5.3.
<p>To allow for emergency services personnel to undertake property protection activities, a 10 m defensible space (APZ) that permits a minimum 4 m wide, unobstructed vehicle access is to be provided around the perimeter of the solar array and associated infrastructure.</p> <p>Amend the reference to the correct section in Table 2-1 for this Statement of Commitment (currently states Section 3.2.5)</p>	Table 2-1 has been amended referencing Section 3.2.8 instead of Section 3.2.5.
This management plan looks like the final plan for the site for operation. Are there any phases of the project that may be different to the final layout that	The locations of emergency infrastructure will be consistent through construction and operations periods. This has been included in Section 3.2.8.

Agency Comment	Response
<p>need to be factored in? That is, is all the emergency-related infrastructure going to be in place from day one, or is it going to be phased? If phased, these plans need to be included for construction.</p> <p>Please provide emergency response plans for construction period if some of the locations of the emergency infrastructure are different during this period</p>	
<p>FRNSW – comments relating to Table 2.1 the points that were made by FRNSW do not appear to have been addressed adequately.</p>	<p>Section 3.2 has been updated to provide more details regarding emergency equipment, shutdown procedure and decontamination.</p>
<p>Section 3.2.7 identifies that site buildings will contain protective clothing, respiratory protection, and decontamination facilities in line with best practice. From FRNSW comments, the equipment and minimum numbers of equipment should be detailed.</p>	<p>Section 3.2.8 has been updated to include specific number and storage locations of emergency equipment.</p>
<p>Section 3.2.2 will provide a shutdown procedure. This procedure is to be established prior to operational phase. This section should address the comments for a safe method of shutting down and isolating the photovoltaic system. The comments in the plan and from FRNSW indicate that this is particularly related to operational aspects of the project. However, are there any aspects within or during construction that may require the shutting down of the site in the case of an emergency?</p>	<p>Shutdown detail added for construction and operation. See Section 3.2.3.</p>
<p>There is no detail regarding decontamination procedures or minimum evacuation zone distances.</p>	<p>Decontamination section added. See Section 3.2.7</p>
<p>There is no detail regarding decontamination procedures or minimum evacuation zone distances.</p>	<p>Evacuation zone distances to assembly areas are provided in Appendix C.3 (min 5 km)</p>