

Stubbo Operational Bushfire Emergency Management & Operations Plan (Stage 2b)

06 May 2026



A faint, stylized outline of the map of Australia is visible in the background, rendered in a light orange color. It shows the main continent and surrounding islands.

ACEN Australia

Suite 2, Level 2

15 Castray Esplanade

Battery Point, TAS 7004

This document may contain confidential and legally privileged information, neither of which are intended to be waived, and must be used only for its intended purpose. Any unauthorised copying, dissemination or use in any form or by any means other than by the addressee, is strictly prohibited. If you have received this document in error or by any means other than as authorised addressee, please notify us immediately and we will arrange for its return to us.

Table of contents

1	Introduction	5
1.1	Stubbo Solar Project.....	6
1.2	Emergency Planning Assessment - Framework	7
1.2.1	Australian Standard 3745-2010	7
1.2.2	NSW RFS Guidelines	8
1.3	Consultation with the NSW Rural Fire Service.....	9
2	Bushfire Risk Assessment	10
2.1	Bushfire Risk	10
2.2	Bushfire Protection Measures.....	10
2.3	Limitations	12
3	Bushfire Emergency Management Plan.....	13
3.1	Situational Awareness	14
3.2	Defendable Space, APZ and Vegetation Clearance	16
3.3	Access.....	17
3.4	Water and Suppression	17
3.5	Storage of hazardous and flammable materials.....	18
3.6	Bushfire Response Training and Awareness	19
3.7	Assist Emergency Services	19
3.8	Evacuation and Shelter in Place Options.....	20

Tables

Table 1 – Requirements for Emergency Plan in accordance with AS3745-2010	8
Table 2 – Requirements for RFS NSW Bush Fire Emergency Management and Evacuation Plan	9
Table 3 – Fire Danger Ratings and Bushfire Response Advice	15
Table 4 – Project component and associated APZ	16

Figures

Figure 1 – Australian Fire Danger Rating System (adopted 1 September 2022).	14
---	----

Appendices

Appendix A – Evacuation Map	21
Appendix B – Bushfire Response Matrix	22

Appendix C – Bushfire Mitigation and Preparedness Assessment	23
Appendix D – NSW RFS Bushfire Awareness Training	25
Appendix E – Emergency information Pack	26
Appendix F – Consultation with RFS	27



1 Introduction

The operation of the Stubbo Solar Project (Stage 2b) is a 400 megawatt (MW) alternating current development (the Project) located between Blue Springs Road and Barneys Reef Road, approximately 10 km North of Gulgong and 85 km east of Dubbo in New South Wales (NSW) in the Central West and Orana Region.

ACEN Australia is the Applicant and project owner and has engaged PCL Construction Pacific Rim Pty Ltd (PCL) as the engineering, procurement and construction (EPC) contractor to manage the construction works for the 400 MW AC solar project along with the operational and maintenance (O&M) work for the first two years of operation. ACEN will then appoint a subsequent long-term O&M Contractor.

ACEN Australia has also engaged Transgrid to connect the Project to the transmission network used by Transgrid to provide transmission services, which includes certain works that need to be completed by Transgrid to enable Transgrid to connect the Project to the transmission network.

The Development Consent (DC) - Application Number: SSD-10452 in combination with commitments that were made by ACEN Australia in the environmental impact statement (EIS) and the response to submissions (RtS) report, required the consideration of bushfire risks and management, which was provided in the format of a Bushfire Emergency Management and Operations Plan (BEMOP), and consistent with the NSW RFS Planning for Bushfire Protection 2019 (PBP 2019).

PBP 2019 details the requirements for a BEMOP for solar farms. A BEMOP should identify relevant bushfire risks and mitigation measures associated with the solar project. This should include:

- detailed measures to prevent or mitigate fires igniting;
- work that should not be carried out during total fire bans;
- availability of fire-suppression equipment, access and water;
- storage and maintenance of fuels and other flammable materials;
- notification to the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate;

- appropriate bush fire emergency management planning.
- Aware of operations that may be carried out on days of Total Fire Ban and any prohibited activities or exemptions that are notified by the Commissioner of the NSW RFS under s.99 of the RF Act.

1.1 Stubbo Solar Project

The Project will be developed in stages, comprising:

- Stage 1: Road upgrades including construction of the main site access;
- Stage 2a: Construction of the solar project; and
- **Stage 2b: Operation of the solar project.**

This management plan is for Stage 2b of Stubbo Solar, as approved by the Secretary of the Department of Planning and Environment in the letter dated 10 May 2023.

This BEMOP has been prepared to support the O&M Contractor and Transgrid in bushfire protection management and response.

The project is located in close proximity to the regional road network via Blue Springs Road and the electricity network via TransGrid's 330 kilovolt transmission line, which extends along the southern boundary of the site.

The site is located in a rural area, with eight non-associated residences (sensitive receivers) located within 2 km of the development footprint. The project would also be located in an area that could contribute to the pilot Renewable Energy Zone in the Central-West Orana Region.

The Stubbo Solar Project is not mapped within bushfire prone vegetation areas, but bushfire has been deemed to be a potential hazard and bushfire protection requirements detailed in the NSW RFS Planning for Bushfire Protection 2019 (PBP) have been applied to the planning/approvals and design stages and are required to be incorporated into the construction and operation stages.

Key activities for Stage 2b include operation of the Stubbo Solar project and maintenance activities including:

- Daily monitoring of the site operation and power generation
- Inspection and testing of electrical equipment
- Inspection and verification of structural assemblies
- Calibration of sensors
- Replacement of faulty equipment and buildings maintenance
- Equipment cleaning including washing of solar panels
- Inspection of roads, culverts and perimeter fencing
- Vegetation management, and weed and pest management
- Maintenance of erosion and sediment controls
- Site Housekeeping
- HSE inspections
- Security monitoring

1.2 Emergency Planning Assessment - Framework

The relevant stakeholders, including ACEN, the O&M Contractor, the O&M Subcontractor, and Cool Burn make up an Emergency Planning Committee (EPC), responsible for the development, implementation and maintenance of the Stubbo Solar Project Bushfire Emergency Management and Operations Plan (BEMOP).

This emergency planning assessment framework aims to assist in the development of management plans applicable to Stage 2b Operations. As stated in Hazards and Risks H3 of the EIS Amendment Report, this BEMOP has been prepared to be consistent with the relevant development consents, Australian Standards, and NSW RFS guideline requirements.

1.2.1 Australian Standard 3745-2010

AS 3745-2010 aims to enhance the safety of occupants and visitors by providing a structured framework for workplace emergency planning. Whilst the AS 3745-2010 doesn't provide specific management practices for bushfire emergency management, it does provide a standard framework regarding the planning for emergencies in facilities as follows:

- Formation, purpose, responsibility and training of the EPC
- Emergency Identification
- Development of an Emergency Plan
- Development of emergency response procedures
- The establishment, authority and training of an emergency control organization
- The testing and validation of emergency response procedures (evacuation drills)
- Emergency related training

This BEMOP has been prepared to be in a manner consistent with the AS3745-2010, with a focus on fulfilling the requirements for planning, response, and preparedness for bushfire-specific risks in addition to the general scope of the AS 3725-2010, including:

- Vegetation and fuel load maintenance
- Asset Protection Zones (APZs)
- Reduction and management of fire ignition risk
- Access for emergency services to assets and for evacuation
- Water for emergency and suppression
- Storage of hazardous and flammable materials
- Early warning systems (fire bans, evacuation triggers)
- Evacuation plans and diagrams
- Coordination with external emergency services

Table 1 – Requirements for Emergency Plan in accordance with AS3745-2010

AS3745-2010 Consideration	Reference in BEMOP (chapter)	Status
Statement of purpose and scope	1, 1.1, 1.2	-
Information on the structure and purpose of the EPC	1.2	-
Identification of the facilities to which it applies	1, 1.1, 1.2	-
Descriptions of the emergency features (safety, fire and security) of the facility	3.1, 3.2, 3.3, 3.4, 3.5	-
The organisational arrangements for the facility.	3	-
The emergency identification outcomes.	3.1, Appendix B	-
The emergency response procedures	3.8. Appendix B	-
Evacuation diagrams	Appendix A	-
Training arrangements	3.6	-
The testing and validation of emergency response procedures	-	Annual emergency and evacuation drills
Review and routine servicing	Appendix C	-
Distribution of emergency plan (including personal emergency evacuation plans (PEEPs), where required	3.6, 3.7	-
Details of the hours of occupancy of the facility	NA	Operation 24hrs
The EPC nominated validity period for the emergency plan	-	Annual review
The date of issue or amendment date on each page of the emergency plan	TBC	-

1.2.2 NSW RFS Guidelines

This BEMOP must satisfy the requirements of the NSW RFS guideline: *Development planning guide to developing a bush fire emergency management and evacuation plan*. The preparation of a bush fire emergency management plan aims to improve the preparedness of at-risk developments from bush fire attack.

Where an Emergency Plan outlined under AS 3745-2010 may not provide specific protection for occupants specific to bushfire risk, a bush fire emergency management plan includes assessment of bushfire risk to the project, provisions for refuge and evacuation in the event of a bushfire, and the training of staff in preparation for a bushfire.

Table 2 – Requirements for RFS NSW Bush Fire Emergency Management and Evacuation Plan

Requirement of BEMOP	Reference in BEMOP (chapter)	Status
Name and address of facility	3	-
Contact details (including phone number)	3	-
Number of employees/occupants	3	-
Number of occupants with support needs	NA	Assumed all staff will be able bodied, and aware
Type of Facility	2.1	-
Asset Protections Zones (APZ)	3.2	-
Primary Action: evacuation	3, 3.8	-
Details of evacuation point (safer location)	3, 3.8	-
Multiple Access/Evacuation Points	3.3	-
Details of location or address of back-up/ pre-emptive procedures	Appendix B	-
Procedures for Primary Action and back-up actions	Appendix B	-
Assembly point(s) and transportation arrangements (evacuation only)	3	Site Muster Point
Action Statements (before, during and after a bush fire)	Appendix B	No specific post fire action statement provided
Site layout of facility	-	Site Plan
Occupant/employee listing	-	Requires by contractor, sign in register
Contact details for parents/guardians	-	Requires by contractor, induction register

1.3 Consultation with the NSW Rural Fire Service

NSW RFS was consulted regarding the development of the Stage 2b BEMOP prior to commencing operation to support compliance with Condition 31 and consistency with HiPAP 1 and Planning for Bushfire Protection 2019.

Evidence of consultation with NSW RFS is provided in Appendix F.

A copy of the current Stage 2b BEMOP will be provided to the local Fire Control Centre whenever updates are made to the BEMOP, and two controlled hard copies of the document will be maintained in a prominent position adjacent to the site entry.

2 Bushfire Risk Assessment

The Large-Scale Solar Energy Guideline for State Significant Development (NSW Government 2018) lists bushfire hazard and risks associated with construction and operations of a solar project as issues to be considered. In particular, the potential for fire spreading to the solar development or being caused by the onsite infrastructure or works or transmission lines.

RPS (2019) prepared a Bushfire Due Diligence Threat Assessment Report that included a Bushfire Hazard Assessment for the Project site. This report has been prepared in accordance with the methodology and procedures outlined in Appendix 1 of PBP 2019 and clause 44 of the *Rural Fires Regulation 2013* (RF Regulation).

2.1 Bushfire Risk

While no land within the study area has initially been mapped as bushfire prone, the RPS Assessment (2019) concluded that the rural lands surrounding and on site constitute a bushfire risk. The RPS Assessment found the land surrounding the Project contains vegetation consistent with grassland and woodland. The vegetation that forms a bush fire threat exists in all direction on and surrounding the study area.

The study area has low relief, rolling hills with a slope gradient not greater than 5 degrees. It does include small patches of woodland vegetation downslope with a gradient of 0 to 5 degrees, as well as upslope with a flat gradient.

The Project is situated in the Central Tablelands of NSW within the Mid-Western Regional Council area and has a designated Fire Danger Index (FDI) of 80.

Bushfire weather is associated with long periods of drought, high temperatures, low humidity and gusty north-westerly winds. The main potential sources of ignition of, and fuel for, unplanned fires caused by the Project are:

- Vehicle and machine movement over long, dry grass;
- Human error, such as non-compliance with hot works procedures (and associated generation of sparks) or incorrect disposal of cigarette butts;
- Diesel (stored and used in generators);
- Flammable liquids (stored and used in machinery);
- Mobile plant engine failure, causing spark/ignition;
- Arson;
- Escaped back burning;
- Lightning strikes;
- Arcing, sagging or damage to the adjacent transmission lines.

Bushfire risk (Ramboll EIS, 2020) was classified to be a Medium Risk based on a Very Unlikely potential to occur, and Major potential consequences (to life and safety and assets).

2.2 Bushfire Protection Measures

Several Bushfire Protection Measures would be inherent to the project design and layout (Ramboll EIS 2020) and would also be incorporated into the construction and operating procedures. These measures include:

- Vegetation control along and around access roads, parking areas and temporary assets (such as site offices).
- Minimising vehicle movements off access roads and through long grasses.
- The construction and operations induction would highlight the bushfire risks and the importance of compliance with operational procedures, in particular hot works procedures, vehicle movement restrictions, material storage requirements and the bushfire emergency response procedures.
- The construction and operations induction would also discuss the importance for the correct disposal of cigarette butts. In times of high fire risk, restrictions on where and when smoking can occur may be implemented (designated areas).
- Establishment and maintenance of the following Asset Protection Zone (APZ) strategies:
 - to establish a BAL of 12.5 (as defined under AS3959) with a 20 metre APZ to grassland, 22 metre APZ to woodland (where vegetation is upslope of flat from infrastructure) and a 28m APZ to woodland (where woodland is downslope) would be required. A BAL of 12.5 requires a construction level of BAL-12.5 under Australian Standard AS 3959 Construction of buildings in bushfire prone areas or the National Association of Steel Framed Housing (2014) Steel Framed Construction in Bush Fire Areas (NASH Standard), and section 7.5 of Planning for Bushfire Protection 2019 is to be applied
 - no combustible fencing would be installed within 10 metres of any structure
 - the ground below the individual photovoltaic modules would be fuel reduced to both prevent direct flame contact from grassfires and reduce the likelihood of sparking from the modules, potentially causing ignition
 - internal roads would be maintained within the study area to allow for the safe movement of personnel in the event of a fire event, and designed to accommodate emergency services vehicles
 - static water tanks would be provided in strategic locations throughout the Project infrastructure, and in accordance with the requirements of Planning for Bushfire Protection 2019
 - wherever possible, electricity supply and distribution within the *study area* would be underground and so not contribute to fire risk
 - any fuels and chemicals stored as part of the Project would be stored in accordance with their Safety Data Sheet and Planning for Bushfire Protection 2019.

The SSD 10452 Development Consent Condition No. 30 issued with consultation from the NSW RFS also states the Applicant must:

- Minimise the fire risks of the development, including managing vegetation fuel loads on-site;
- Ensure that the development:
 - includes at least a 20 metres 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 Asset Protection Zone;
 - complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2019 (or equivalent) and Standards for Asset Protection Zones;
 - is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65mm Storz fitting and a FRNSW compatible suction connection located adjacent to an internal access road;

- assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site; and
- notify the relevant local emergency management committee prior to commencing operations.

2.3 Limitations

The emergency planning and procedures of this bushfire emergency management and operations plan are limited to the solar project area and immediate surrounds. Should further information become available regarding the scope and situation at the Project area (including extent), ACEN and Cool Burn reserves the right to review the plan in the context of the additional information.

While the measures identified in this plan when fully implemented can assist in reducing the bushfire risk to life and safety, infrastructure and property protection, the planning and response procedures cannot fully guarantee assets will survive a bushfire or grassfire on every occasion due to the unpredictable nature of bushfires and extreme weather, and the dynamics of human response.

Continual evaluation and review of this bushfire emergency management and operations plan, fire risk conditions at the site and updating management practices when necessary, may assist in further reducing the bushfire risk at the site over the operational life of the solar project.

To maintain the objective of this Plan, the BEMOP should be prepared by the contractor who will be applying the actions, should be audited annually by the contractor and reviewed in full every 5 years by the Emergency Management Committee.

3 Bushfire Emergency Management Plan



Location Information

Address	Stubbo Solar Project (SSP), Access Point: Blue Springs Road
Number of staff, contractors, visitors	Up to 5-10 people could be on site during operation phase
Site Muster Points Locations	Muster Points: O&M Contractor compound and TransGrid compound. Alternate muster point at Barneys Reef Road (See the site Emergency Plan).
Off Site Evacuation Location	Gulgong – Billy Dunn Oval, Nandoura Street, Gulgong – open space Neighbourhood Safer Place (NSP)

In the event of a fire on or adjoining the Stubbo Solar Stage site, the following contacts must be notified as per order of priority in the table below:



Emergency Contact Information (to be updated frequently)

Fire, Police, Ambulance	CALL 000
SSP Emergency Controller	Solarig AU Control Centre 0448 031 688
SSP Chief Warden	Joshua Weyland 0493 471 525
SSP Warden	Jeff Stuart (0493 471 582
NSW RFS (Cudgegong Office during business hours 8AM-4:30PM weekdays)	Phone: 02 6372 4434
Fire and Rescue NSW (regional office Bathurst region West 2)	Phone: 02 6339 8500

The response to a fire on the Stubbo Solar site is primarily to **report and evacuate**.

The following actions need to take place:



Actions

1. Raise alarm, call 000	5. Determine bushfire threat
2. Call SSP emergency controller	6. Follow site emergency instruction
3. Observe Triggers for Evacuation (BEMOP Matrix Appendix 2)	7. Evacuate to Gulgong NSP
4. Report to site Muster Point	8. Contact SPF emergency controller, confirm evacuation

3.1 Situational Awareness

The Bureau of Meteorology issues fire weather warnings when weather conditions are conducive to the spread of dangerous bushfires. Warnings are generally issued within 24 hours of the potential onset of hazardous conditions.

The statutory Bush Fire Danger Period (fire season) for Rural Fire Districts runs from 1 October to 31 March, however these dates may vary due to local conditions. During the fire season, daily Fire Danger Ratings (FDR) would be monitored by the O&M site health, safety, environment (HSE) Supervisor. FDR is issued daily by the Bureau of Meteorology for the Central Ranges Fire Weather Area.



Figure 1 – Australian Fire Danger Rating System (adopted 1 September 2022).

Table 3 – Fire Danger Ratings and Bushfire Response Advice

Fire Danger Rating	Associated Bushfire Risk and Advice
No rating	
Moderate	Plan and prepare. Stay up to date and be ready to act if there is a fire.
High	Be ready to act. - There's a heightened risk. Be alert for fires in your area. - Decide what you will do if a fire starts. - If a fire starts, your life and property may be at risk. The safest option is to avoid bush fire risk areas.
Extreme	Take action now to protect your life and property. - These are dangerous fire conditions. Check your bush fire plan and ensure that your property is fire ready. - If a fire starts, take immediate action. If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts. - Reconsider travel through bush fire risk areas.
Catastrophic	For your survival leave bush fire risk areas. - These are the most dangerous conditions for a fire. - Your life may depend on the decisions you make, even before there is a fire.

Bushfire planning focus would be given to days of 'Extreme' or 'Catastrophic' FDR. On these days, consideration should be given to:

- Whether hot work (e.g. welding, grinding) should be limited to enclosed buildings, or cease altogether (i.e. hot works shall be prohibited on Total Fire Ban or TOBAN days; any hot work that does happen on TOBAN days must have an exemption from RFS NSW, which they can refuse to approve);
- Reducing workforce numbers and/or redirecting work activities to areas farthest removed from potential bushfire attack on site on extreme fire danger days;
- Evacuating or closing the site on catastrophic fire danger days (close down facility and reduce numbers to skeleton crew).

NSW RFS issue bushfire level alerts, and these will also be monitored daily by the O&M Contractor and site HSE Supervisor.

Three levels of alert issued:



Advice

A fire has started. There is no immediate danger. Stay up to date in case the situation changes.



Watch and Act

There is a heightened level of threat. Conditions are changing and you need to start taking action now to protect staff and visitors.



Emergency Warning

An Emergency Warning is the highest level of Bush Fire Alert. The site may be in danger and need to take action immediately. Any delay now puts the lives of staff and visitors at risk.

3.2 Defendable Space, APZ and Vegetation Clearance

Defendable space would be managed as Asset Protection Zones (APZ). APZ are considered areas managed by keeping fuel loads low, to mitigate potential flame contact, radiant heat and to provide a space for defending an asset. The objective of APZ is to protect life and safety, assets and infrastructure.

The APZ will be provided initially and for successive infrastructure construction stages and maintained for the operational stage. Key project infrastructure components and their recommended APZ are detailed below:

Table 4 – Project component and associated APZ

Project Component	Recommended APZ
Infrastructure: - Solar array - Site buildings (O&M building as a safe, last resort bushfire shelter) - Substations and Switch Yards	The O&M Contractor is required to maintain a 20m defendable space around all project infrastructure (that permits unobstructed vehicle access) and manage the defendable space and solar array areas as an Asset Protection Zone (as detailed Appendix 4 PBP). The APZ maintenance performance criteria would be: - Maintained as low-cut grass less than 100mm height as a guide, or non-combustible surfaces (e.g. gravel access tracks). - Trees and shrubs (existing and regrowth) will not encroach onto the 20m APZ. - Areas adjacent to roads and along fences and gates will be maintained free of fuel (i.e. no tall grasses and weeds). - The ground below the individual photovoltaic modules would be fuel reduced to both prevent direct flame contact from grassfires and reduce the likelihood of sparking from the modules, potentially causing ignition.
Powerlines	Powerlines are predominantly underground. Any overhead powerlines are to have standard overhead powerline minimum easement widths in accordance with Transgrid easement regulations: ~15 m cleared zone ~12 m low growth NB: the areas of low growth will only be cleared of vegetation greater than 3.5 m in height.
Storage and maintenance of fuels and flammable materials (HAZMAT)	All fuels and flammable materials will be stored and maintained in accordance with: - the requirements of all relevant Australian Standards (including AS1216:2006: Dangerous Goods and AS1940:2017 Flammable Liquids Storage and Handling) - NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook if the chemicals are liquids Minimum 20m APZ applies.
APZ performance will be recorded on a site environmental compliance inspection checklist for the life of the project, by the O&M Contractor or site HSE Supervisor. Maintenance will be undertaken based on that monitoring performance information. APZ monitoring and maintenance would be reported annually ahead of the declared bushfire season (e.g. 1st October) and issued to the ACEN's Site Operations Manager.	

3.3 Access

All access roads will enable safe access, egress and a defensible space for emergency services.

The project will be accessed via Blue Springs Road, which is a public through road that supports capacity for emergency management and evacuation purposes. All vehicles associated with the development must enter and exit the site via the preferred site access point off Blue Springs Road (BEMOP PLAN).

Barneys Reef Road is a designated emergency access only and provides an alternate egress/ access to be used in the event of any site access constraints (BEMOP PLAN).

All access provided within this development site will be designed and constructed to support heavy vehicle access (i.e. weight and manoeuvrability capacity), and subsequently would support emergency services.

The Solar Project operator must ensure access meets the following bushfire specific performance:

- all internal roads are constructed as all-weather roads;
- there is sufficient parking on site for all vehicles;
- a minimum 20 metre defensible space around the perimeter of the solar array area (within the perimeter fence) that permits unobstructed vehicle access;
- Ensure that access is maintained entirely unobstructed around the buildings.

The access performance will be recorded on a site environmental compliance inspection checklist as outlined in the CEMP by the O&M Contractor or site HSE Supervisor (consistent with the CEMP and the EMS) and any maintenance undertaken based on that monitoring performance information. The access standards would be reported annually ahead of the declared bushfire season (e.g. September annual bushfire preparedness reporting) and issued to ACEN's Site Operations Manager.

3.4 Water and Suppression

The solar project will be suitably equipped to respond to fire (including bushfire) on site including the provision of a minimum 20,000 litre water supply tank fitted with a 65mm Storz fitting and a FRNSW compatible suction connection, located adjacent to an internal access road (BEMOP PLAN).

Any other static water supplies that can be tapped into (i.e. dams) will be identified and positioning information detailed on BEMOP PLAN.

All buildings and site vehicles will be fitted with portable fire extinguishers, these will be audited/checked on a 6 monthly basis. Two fire trailers, both with a 2400L tank and 36m fire hose, have been procured by ACEN and are available on site.

A specific project vehicle or first response fire trailer will be fitted with a water tank (e.g. 600L), pump and minimum 30m fire hose, for hot works management (such as slashing) and initial fire response (first response). Training would be required for first response fire trailer operators.

The water supply provisions will be recorded on a site environmental compliance inspection checklist as outlined in the CEMP by the O&M Contractor or site HSE Supervisor and reported annually ahead of the declared bushfire season (e.g. pre fire season bushfire preparedness report prepared September annually and issued to ACEN's Site Operations Manager).

Requirements and records of these inspections are kept within the Project computerised maintenance management system (CMMS).

3.5 Storage of hazardous and flammable materials

There is likely to be some permanent chemical and fuel supplies kept on site. Temporary storage of chemicals and fuels will be required during construction and operations and will potentially be moved around.

Storage and handling of flammable and combustible liquids will be undertaken in accordance with AS1940:2017 and NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook.

Storage and handling locations will be identified clearly on a site plan located at the entrance to the site and displayed in the site offices, which would inform attending emergency services. The chemical register with storage instructions and locations is provided in Section 6 of Emergency information Pack (Appendix E).



3.6 Bushfire Response Training and Awareness

The primary emergency response will be to report a fire and prepare to evacuate to the designated onsite muster point.

All on-site personnel will be briefed daily during tool box meeting and pre-start checks of the bushfire risk and fire danger, and prohibited works. All on-site personnel will also be familiar in the site induction on the contents of this BEMOP and the Site Emergency Plan, and in particular:

- Areas of hazardous materials and/or bushfire prone vegetation and most likely direction of potential bushfire attack;
- Bushfire emergency evacuation procedures consistent with the Site Emergency Plan (requirement to be physically tested on 6-monthly basis) including: activation of emergency alarms; evacuation (and timing) of all areas to the site muster points; primary and emergency escape routes; communication protocol; and location of NSP.

It is possible that staff will be involved in bushfire fighting such as first response and providing assistance to NSW RFS as much as practicable if there is a fire in the vicinity of the site. Fire fighting will require specific first response and fire fighting training. NSW RFS provides fire fighting and prevention services to more than 95% of the area of NSW. An accredited bushfire awareness training course is offered to any non-fire fighting personnel who need access to an active fire ground in the course of their work (Appendix D for details).

3.7 Assist Emergency Services

The project operations will assist the RFS and emergency services as much as practicable if there is a fire in the vicinity or on the site. This assistance will be provided by way of:

- Provision of the BEMOP and Emergency Plan in site offices and at site entrance.
- Maintaining clear and open vehicle access across the site, and maintenance of APZ to minimise fuel loads within the site.
- Maintaining clear access to water storage tank and maintain water supply and connections.
- Storing and detailing locations of hazardous materials (HAZMAT) correctly and highlighting these locations on the BEMOP and Emergency Plan.
- Isolation of site and assisting RFS in the fighting of the fire.

3.8 Evacuation and Shelter in Place Options

Consideration must be given to the protection of life and safety of employees and contractors operating the site during a bushfire related incident.

Depending on the nature of the emergency, it will be determined whether it is safer to evacuate early or if too late to evacuate, remain on site and seek shelter in a safe place.

Once accounted for, personnel will be instructed whether to Shelter in Place (last resort) or evacuate following the primary escape route or alternative route identified in BEMOP PLAN.

The action to evacuate to a designated off-site location would be at the direction of the site emergency controller and the relevant public authority (NSW RFS, Police).

During any evacuation, all personnel on site will be always contactable. In the event of a RFS issued Bushfire Emergency Warning that affects the Project area, response will align with actions detailed in the bushfire response matrix (Appendix B of this plan).

The O&M buildings will be the site shelter in place location.

The Evacuation plan is shown in Appendix A.

Appendix A – Evacuation Map



Appendix B – Bushfire Response Matrix

The following is provided as a guide for evacuation. Site will be closed on Catastrophic Fired Danger Days. Evacuate only if the region, monitor resources for situational awareness.

Observation/ situation	Bush Fire Danger Rating (FDR)			
	Moderate Plan and prepare	High Be ready to act	TOTAL Fire Ban Declared	Extreme Take action now
Out of control fire <10 km from site	- Situational awareness - Move to emergency muster point - Seek instruction from Stubbo Solar emergency controller and emergency services	- Situational awareness - Move to emergency muster point - Seek instruction from Stubbo Solar emergency controller and emergency services		- Close the site for any works - Situational awareness - Provide assistance to emergency services
Out of control fire within 20 km of site	- Situational awareness - Normal operation - Situational awareness - Seek instruction from Stubbo Solar emergency controller	- Situational awareness - Move to emergency muster point - Situational awareness - Seek instruction from Stubbo Solar emergency controller		- Close the site for any external works - Situational awareness - Provide assistance to emergency services
Bushfires LGA but not considered a direct concern	- Situational awareness - Normal operation	- Situational awareness - Normal operation		- Close the site for any external works - Situational awareness - Seek instruction from Stubbo Solar emergency controller
No Fires within Region	- Situational awareness - Normal operation	- Situational awareness - Normal operation		- Close the site for any external works - Situational awareness - Seek instruction from Stubbo Solar emergency controller

Decreasing risk – Increasing Risk

Appendix C – Bushfire Mitigation and Preparedness Assessment

Activity and relevant risk impact	Mitigation and management measure	Responsible Party	Monitoring / Timing
Operations Stage			
Detailed measures to prevent or mitigate fires igniting	A minimum 20m defendable space (as APZ) provided around infrastructure (excluding road access, fencing and power services provisions)	O&M Contractor	Annual report Sept
	Ensure local firefighting appliances have suitable and unobstructed vehicle access to the site, the defendable space and the 20,000L static water supply (or multiple static water supplies, dams, bores etc.)	O&M Contractor	Annual report Sept
	Monitor and maintain access throughout construction and operational stages	O&M Contractor	Weekly observation Annual report Sept
	Minimising vehicle movements off access roads and through long grasses	O&M Contractor	Daily tool box during bushfire season Site induction
	Ensure all site personnel are familiar with fire prevention and emergency response actions	O&M Contractor	Daily tool box
	Monitor RFS website and Hazards Near Me app for bushfire alerts	O&M Contractor	Daily during bushfire season Site induction
Work that should not be carried out during total fire bans	Manage work as controlled or permitted activities during TOBAN days: - any works that have potential to cause a spark or ignition - any works that involve vehicle operation over unmanaged grass areas	O&M Contractor	Daily tool box during bushfire season Site induction
Availability of fire-suppression equipment, access and water	Provide firefighting equipment on site, including: firefighting water supply (minimum of 20,000 L water tanks) to be provided in strategic locations throughout the project infrastructure	O&M Contractor	6-monthly fire protection equipment checks Annual report Sept

Activity and relevant risk impact	Mitigation and management measure	Responsible Party	Monitoring / Timing
	- fire extinguishers in buildings and vehicles - specific project vehicle or fire trailer fitted with a water tank, pump, 30m fire hose for initial response.		
Storage and maintenance of fuels and other flammable materials	Development of a site layout which includes an inventory and location of all hazardous and combustible chemicals on site. Combustible chemicals will be stored in accordance with the relevant codes and standards.	O&M Contractor	Annual report Sept
Notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire danger period to ensure weather conditions are appropriate	Eliminate the risk - avoid any works that have the potential to ignite surrounding vegetation.	O&M Contractor	As required Any event to be de in annual report
Appropriate bush fire emergency management planning	Implement the BEMOP during on-site activities. Ensure all site personnel are familiar with bushfire prevention and emergency response actions	O&M Contractor	Daily tool box Site inductions

Appendix D – NSW RFS Bushfire Awareness Training



RFS



BUSH FIRE AWARENESS TRAINING

This course provides non-firefighting personnel with an understanding of the elements of wild fire and, for those who complete the course assessment successfully, controlled access to fire grounds.



Bush Fire Awareness Training

Who Should Attend This Training

Any non-fire fighting personnel who need access to an active fire ground in the course of their work.

The course is especially helpful for utility suppliers (electricity, water, gas, telephone) who need to restore services to the community as soon as possible, or who may need to take precautionary measures ahead of a fire.

Course Format

This course uses a mixture of audio-visual presentations, group discussion and interactive participation.

Participant Numbers

This course is designed to cater for a minimum of 10 and a maximum of 30 participants.

Assessment and Accreditation

Assessment comprises a theory exam.

All participants who successfully complete this course will receive a NSW RFS credential certifying that they have received the appropriate training to enter onto an active fire ground under specified conditions.

Conditions for entry to a fire ground

- This credential must be produced as it certifies that the bearer has completed an accredited bush fire awareness course that provides them with an understanding of required safe working practices on a fire ground.
- A person is required to wear full personal protective equipment at all times while on a fire ground.
- This credential does not entitle the bearer to unrestricted access to any fire ground. Access to a fire ground is at the sole discretion of the Incident Controller or Police.
- At all times the bearer acknowledges that they enter the fire ground at their own risk and that the NSW RFS takes no responsibility for their actions or any injuries or damage sustained while on the fire ground.



Course Duration and Location

This course requires 4 hours to complete.

It can be delivered in your workplace, or at any NSW RFS training facility.

Course Content

- The essential elements required for a wild fire to burn, and how these elements relate to extinguishment.
- Factors that affect wild fire behaviour.
- Basic wild fire suppression strategies and tactics.
- Common risks of a wild fire affected workplace and the precautions to be taken to reduce these risks.
- Options available to protect personnel from the hazards of an approaching fire.
- How personnel working at an incident are organised and communicate with one another.
- Procedures for gaining access to a fire ground.

Be trained by the world's largest volunteer firefighting agency

NSW Rural Fire Service provides fire fighting and prevention services to more than 95% of the area of NSW.

The NSW RFS draws on a membership of some 70,000 volunteers from over 2,100 brigades located across the State. This course is based on training provided to NSW RFS members.

Courses are run by competent instructors who are also NSW RFS volunteers. This means your course instructor has extensive practical fire and safety experience and knowledge.

Support your local brigade.

Revenue generated through these courses directly supports the work of our volunteers through professional development and opportunities such as access to specialised international and domestic training, conference attendance and improved training facilities.

How to Book

To book a NSW Rural Fire Service training course email: corporate.training@rfs.nsw.gov.au or phone: (02) 8741 4908



RFS

NSW Rural Fire Service

4 Murray Rose Ave,
Sydney Olympic Park
NSW 2127

Tel: (02) 8741 5555

Eml: corporate.training@rfs.nsw.gov.au

Social Media

 /nswrfs

 @NSWRFS

 @NSWRFS

Appendix E – Emergency information Pack

Emergency Information Pack – Stubbo Solar Farm

Version History

Edition	Date	Point and Cause for Modification
00	20/08/2025	Development of emergency information pack
01	10/12/2025	Updated Emergency contacts

Contents

1. Purpose.....	1
2. Site Description	1
3. Site Map.....	2
4. Emergency Contacts.....	3
5. Emergency Scenarios – Response Guidance	4
6.1 HV Transformer/ Fire.....	4
6.2 Inverter/ Power Station Fire	5
6.3 Combiner Box Fire	6
6.4 Solar Panel & Cable Fire	7
6. Chemical Register	8

1. Purpose

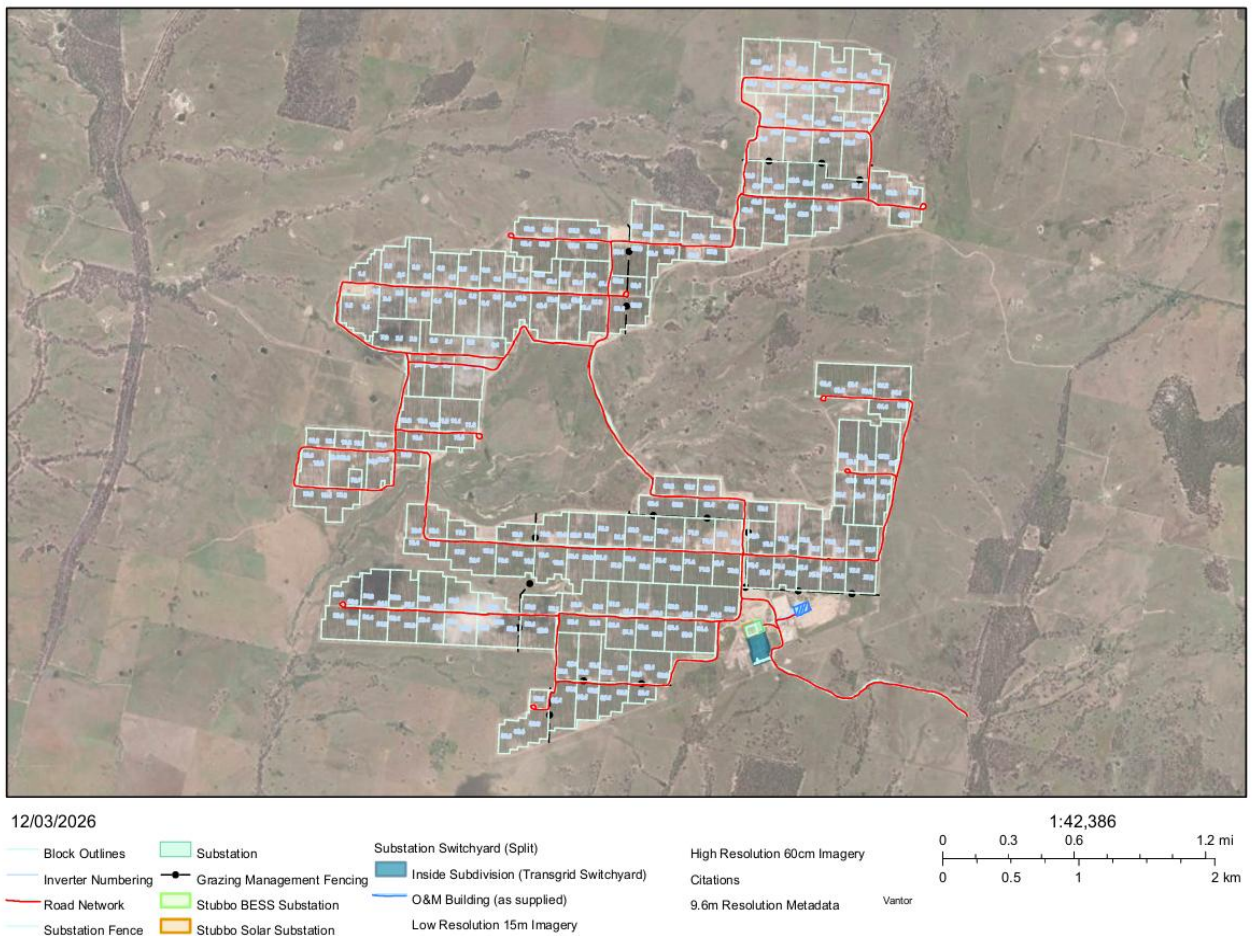
This document is to provide critical site information and emergency response guidance for Stubbo Solar Farm, including emergency contacts, hazards, and recommended actions during high-risk incidents and fires.

2. Site Description

- 400 MW AC
- 930,000 solar panels
- 77 Power Conditioning Units (PCU), comprising:
 - o Inverters, HV Ring Main Unit's (RMU), 630V/33kV Transformer's
- 2 x 33kV/330kV Substation Transformers



3. Site Map



Extra large map located in Emergency Information Tube Below.

4. Emergency Contacts

STUBBO SOLAR FARM EMERGENCY CONTACTS

		
AMBULANCE	POLICE	FIRE
CALL 000		
UHF CHANNEL 3		
SITE ADDRESS	465 Blue Springs Rd, Stubbo NSW, 2852.	
COORDINATES	Latitude: -32.2622 Longitude: 149.5890	
WHAT 3 WORDS	curvy.intake.spellings <i>(quote this to emergency services for accurate location)</i>	
SOLARIG CONTACT	Australian Control Centre	Ph: 0448 031 688
SITE EMERGENCY CONTACT	Site Manager	Ph: 0493 471 525
EXTERNAL CONTACTS		
MUDGEE POLICE STATION	94 Market St	Ph: (02) 6372 8599
CUDGENONG FIRE & RESCUE	54 Depot Rd, Mudgee	Ph: (02) 6370 9800
MUDGEE HOSPITAL	30 Meares St	Ph: (02) 6371 9700
POISONS INFO	(24 hours, 7 days a week – national)	Ph: 13 11 26
SES	(for emergency assistance in floods and storms)	Ph: 13 25 00
LOCAL COUNCIL	Mid-Western Regional	Ph: (02) 6378 2850
ENVIRONMENTAL MATTERS	Department of Climate Change, Energy, the Environment & Water	Ph: (02) 9995 5000
WHS REGULATOR	SafeWork NSW	Ph: 13 10 50
SITE ERT PERSONNEL		
CHIEF FIRE WARDEN	Joshua Weyland	
FIRE WARDEN	Joshua Weyland	
FIRST AIDER	Harry James, Ross Mitchell, Ben Honeysett	
HSEQ Coordinator	Toni-kyla Ryan	Ph: 0448 145 587

5. Emergency Scenarios – Response Guidance

6.1 HV Transformer/ Fire

Risk Level: High

Expected Duration: Anticipate long duration, 4+ hours

Recommended Response:

- Contain surrounding vegetation fires only – do not engage directly with electrical infrastructure
- Maintain **+20m exclusion zone**
- Seek technical support from qualified personnel – Site emergency contact



Key Hazards:

1. HV transformer located in the centre of the site – **Explosion risk** (hot oil expulsion, ARC flash)
2. Do **not** approach substation pad
3. Potential exposure to **toxic smoke and emissions**
4. **High Voltage Energy:** 22,000–33,000V
5. **DC Energy:** 1500V from panels to inverter and DC bus
6. ARC flash radius **>20m**
7. Fire extinguishers and internal suppressants likely **ineffective**
8. **Assume all equipment is live** unless confirmed otherwise
9. Underground HV cables may be present – avoid excavation and track deviation.



6.2 Inverter/ Power Station Fire

Risk Level: High

Expected Duration: Anticipate long duration, 4+ hours

Recommended Response:

- Contain surrounding vegetation fires only – do not engage directly with electrical infrastructure
- Maintain **+20m exclusion zone**
- Contact site emergency representative before any intervention



Key Hazards:

1. PCUs connected directly to combiner boxes
2. **High energy DC and AC** present during daylight hours
3. ARC flash will continue until combiner boxes are isolated by a **licensed electrician**
4. Voltage up to **33kV**, current up to **3000 Amps**
5. Hazards: **Shock, burns, hot metal discharge, sustained arcing**
6. **ARC may reignite** after suppression
7. **Toxic smoke** present – do not approach with extinguishers unless authorised
8. **Assume all equipment is live**



6.3 Combiner Box Fire

Risk Level: High

Expected Duration: Until sunset *(May reignite at sunrise unless electrically disconnected)*

Recommended Response:

- Contain surrounding vegetation fires from a safe distance
- Seek technical support via emergency contacts
- ARC Flash PPE is required
- Only a licensed electrician with solar experience should isolate
- Do not attempt to extinguish combiner box fire – ARC may continue until panels are disconnected



Key Hazards:

1. Combiner boxes connected directly to panels – high DC energy
2. Shock and burn hazards, high-temperature arc
3. Includes hot metal discharge and sustained arcing
4. ARC continues until isolated – **may reignite**
5. Toxic smoke present – **extinguisher use not recommended**
6. Voltage up to 1500V DC and currents up to 120A may be present

6.4 Solar Panel & Cable Fire

Risk Level: Moderate-High

Expected Duration: Until sunset *(May reignite at sunrise unless electrically disconnected)*

Recommended Response:

- Contain vegetation fires from a safe distance
- Do not approach panels or cabling
- Contact qualified personnel – emergency contacts
- Arc Flash PPE and licensed electrician required for isolation



Key Hazards:

1. Panels supply continuous DC power
2. ARC flash, cable burn-back, and risk of re-ignition
3. Shock and burn hazards present
4. Includes hot metal discharge and sustained arcing
5. Toxic smoke present – **extinguisher use not recommended**
6. Voltage up to 1500V DC and currents up to 120A may be present

6. Chemical Register

Item	Chemical Name	Product Type	Hazardous? (Y/N)	Main Hazards	Storage Instructions	PPE Required	SDS Expiry Date	SDS Location
1	15W-40	Valvoline	Y	Skin/eye irritation, harmful to aquatic life, aspiration hazard	Store in original container, away from heat/ignition sources	Gloves, safety glasses	8/02/2028	O&M Shed – attached to front of storage fence where SDS cabinet is stored
2	All-In-One Disinfectant	Glen 20	Y	Flammable aerosol, eye/skin irritation, inhalation risk	Keep cool, ventilated area, away from heat and flames	N/A	13/04/2028	O&M Shed – attached to front of storage fence where SDS cabinet is stored
3	Contact Cleaner	WD-40	Y	Highly flammable, dizziness/drowsiness, eye irritation	Store in cool, dry, well-ventilated place away from ignition	Gloves, safety glasses, mask if necessary	11/01/2027	O&M Shed – attached to front of storage fence where SDS cabinet is stored
4	Coolant Premix Green	Nulon	Y	Harmful if swallowed, eye/skin irritation, may damage organs (ethylene glycol)	Store sealed, away from food/drink, in ventilated area	Gloves, safety glasses	11/09/2028	O&M Shed – attached to front of storage fence where SDS cabinet is stored
5	Diesel Fuel	Chevron Australia	Y	Flammable liquid, harmful if inhaled, aspiration hazard	Store in approved flammable liquids container, ventilated area	Gloves, safety glasses	14/01/2027	O&M Shed – attached to front of storage fence where SDS cabinet is stored

WHSF 93 EMERGENCY Information Pack

Item	Chemical Name	Product Type	Hazardous? (Y/N)	Main Hazards	Storage Instructions	PPE Required	SDS Expiry Date	SDS Location
6	Isopropyl Alcohol	Reochem	Y	Highly flammable, eye/skin irritation	Store cool, away from ignition sources, in sealed container	Gloves, safety glasses	28/02/2027	O&M Shed – attached to front of storage fence where SDS cabinet is stored
7	Silicone Spray	WD-40	Y	Flammable aerosol, eye/skin irritation, inhalation risk	Store in cool, ventilated area away from flames	Gloves, safety glasses	30/06/2026	O&M Shed – attached to front of storage fence where SDS cabinet is stored
8	Spray & Mark Yellow	Dy-Mark	Y	Flammable aerosol, inhalation hazard, skin/eye irritation	Store in ventilated area, away from heat/flames	Gloves, safety glasses	23/11/2026	O&M Shed – attached to front of storage fence where SDS cabinet is stored
9	Ultra Sunscreen	Vitality Brands	Y	May cause skin/eye irritation in sensitive individuals	Store below 30°C, away from direct sunlight	N/A	11/02/2030	O&M Shed – attached to front of storage fence where SDS cabinet is stored
10	Unleaded Petrol	United Petroleum	Y	Highly flammable, harmful if inhaled/swallowed, aspiration hazard	Store in approved flammable liquid container, ventilated area	Gloves, safety glasses	24/02/2027	O&M Shed – attached to front of storage fence where SDS cabinet is stored
11	WD-40	WD-40	Y	Flammable aerosol, dizziness/drowsiness, skin/eye irritation	Store cool, away from ignition sources, in ventilated area	Gloves, safety glasses	3/08/2026	O&M Shed – attached to front of storage fence where SDS cabinet is stored

Appendix F – Consultation with RFS

Pratima Koirala

From: Mark Potter <mark@fireriskconsultants.com.au>
Sent: Monday, 4 May 2026 4:28 PM
To: CudgegongFCC@rfs.nsw.gov.au
Cc: Pratima Koirala; Graeme Taylor
Subject: Stubbo Solar Farm - Emergency Management Plan
Attachments: ACEN_Report_Emergency Management Plan - Stage 2b V5_10 April 2026.pdf; Stubbo 2b_Operational BUSHFIRE_V2_10April2026.pdf

Attention – Superintendent Troy Porter

Good afternoon,

As per the Development Consent for the Stubbo Solar Farm project, we are required to submit the attached documents to NSW RFS. In particular, we are required to provide a copy of plan to the local Fire Control Centre.

Can you please confirm that you have received this email and the attachments. We are also able to meet with NSW RFS and discuss the content if requested.

Kind regards

Mark



Mark Potter
Risk and Emergency Planning Lead
Fire Risk Consultants Pty Ltd
ABN: 38 620 191 826

PO Box 12, Glengarry Vic 3854

📞 0439 289 234

✉ mark@fireriskconsultants.com.au

🌐 www.fireriskconsultants.com.au



Strength Through Preparation

Pratima Koirala

From: Mark Potter <mark@fireriskconsultants.com.au>
Sent: Monday, 4 May 2026 4:31 PM
To: Pratima Koirala
Subject: FW: Stubbo Solar Farm - Emergency Management Plan

Hey,

For the file.

mp

From: Cudgegong FCC <CudgegongFCC@rfs.nsw.gov.au>
Sent: Monday, 4 May 2026 4:29 PM
To: Mark Potter <mark@fireriskconsultants.com.au>
Subject: Automatic reply: Stubbo Solar Farm - Emergency Management Plan

Thank you for emailing the NSW RFS Cudgegong District.

Your email has been received and will be forwarded to the appropriate Officer for action as soon as possible.

This email account is monitored during business hours only - Monday to Friday 8:00am to 4:30pm.

If you need to report an emergency, please contact Triple Zero (000) immediately.

For general business enquiries, please phone the Cudgegong Fire Control Centre on our new phone number 02 6370 9800.

PLEASE NOTE: The Cudgegong District Fire Control Centre has relocated to 6 Goodger Place, Eurunderee NSW 2850 as of Monday 27 November 2023.