

Appendix A – References

Code of Practice for Bushfire Management on Public Land can be found here:

https://www.ffm.vic.gov.au/_data/assets/pdf_file/0006/21300/Code-of-Practice-for-Bushfire-Management-on-Public-Land.pdf

DELWP Measuring Bushfire Risk in Victoria

http://www.delwp.vic.gov.au/_data/assets/pdf_file/0009/318879/DELWP0017_BushfireRiskProfiles_rebrand_v5.pdf

DELWP Overall Fire Hazard Assessment Guide (4th edition July 2010)

https://www.ffm.vic.gov.au/_data/assets/pdf_file/0005/21110/Report-82-overall-fuel-assess-guide-4th-ed.pdf

Emergency Management Manual Victoria, including Part 6 Municipal Emergency Management Planning Arrangements - Guidelines for Committees be found at: <https://www.emv.vic.gov.au/policies/emmv>

Fire Danger Rating information can be found on the CFA website at <http://www.cfa.vic.gov.au/warnings-restrictions/total-fire-bans-and-ratings/>

Information on fire restrictions and Total Fire Bans can be found at:

<https://www.cfa.vic.gov.au/warnings-restrictions/can/>

Information on the responsibilities of public authorities and owners and occupiers of land can be found at <http://www.cfa.vic.gov.au/about/who-does-what/>

Safer Together information can be found at: <https://www.safertogether.vic.gov.au/background>

Bartlett, A.G. (2012) Fire management strategies for Pinus radiata plantations near urban areas. Australian Forestry 2012 Vol. 75 No. 1 pp. 43-53.

Cruz M.G., Alexander, M.E., Plucinski, M.P. (2017) The effect of silvicultural treatments on fire behaviour in radiata pine plantations of South Australia. Forest Ecology and Management 397 (2017) pp. 27-38.

DELWP (2017) Bushfire Risk Analysis for Latrobe City (unpublished) Prepared by Natural Systems Analytics September 2017.

Forest Fire Management Group (2007) Softwood Plantation Fire Synopsis. Endorsed by Australasian Fire Authorities Council Ltd (AFAC).

https://victoriasforestryheritage.org.au/pinefire/FFMG_2007_SoftwoodPlantationFireSynopsis.pdf

Royal Commission 2009 Delburn Bushfire http://royalcommission.vic.gov.au/Finaldocuments/volume-1/HR/VBRC_Vol1_Chapter03_HR.pdf

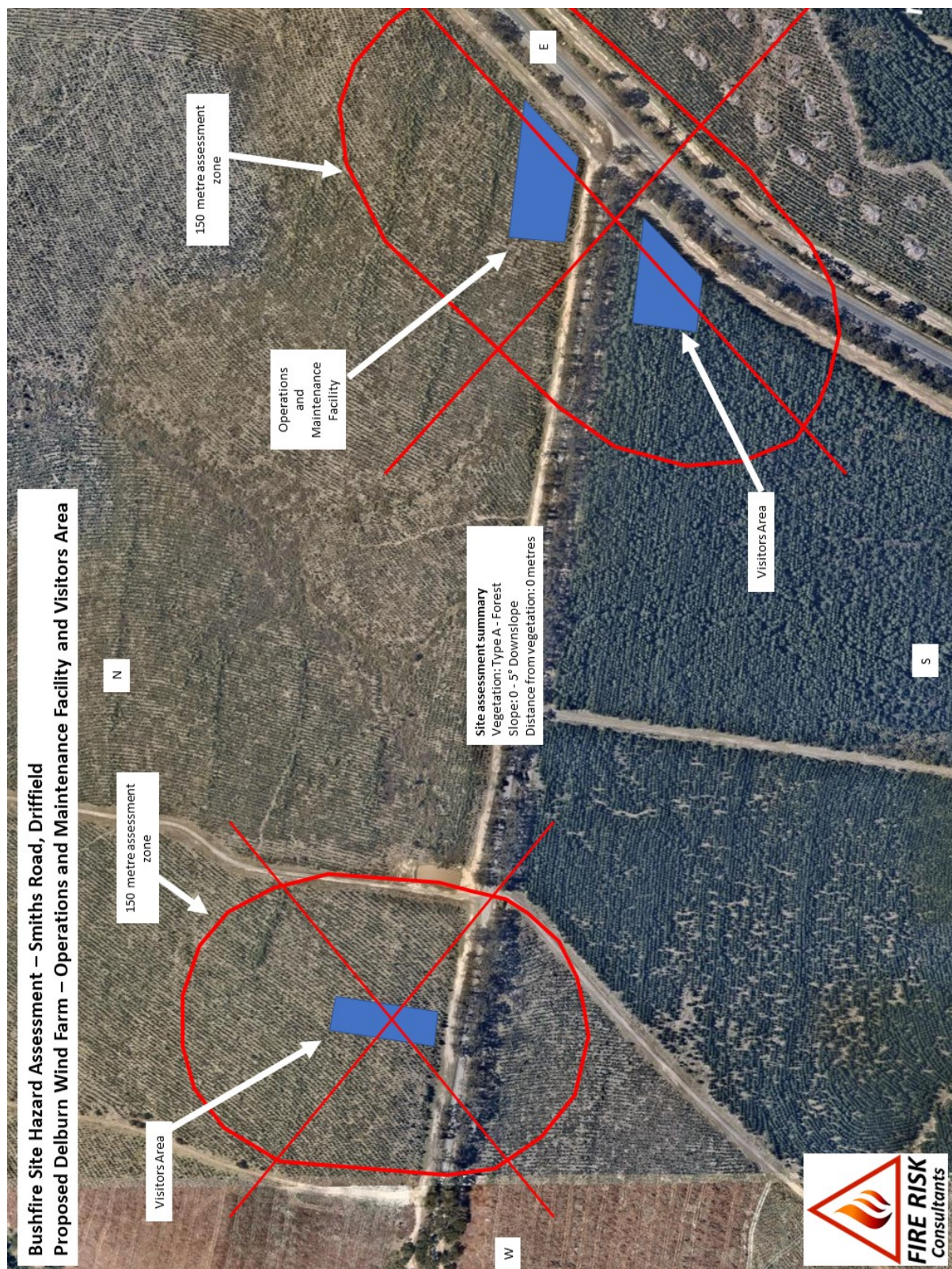
CFA (2009) Investigation Report Traralgon East Tanker 1- 30 January 2009-Delburn Fire Complex

<http://royalcommission.vic.gov.au/getdoc/2cc427e1-ae24-4790-89612fd7686d9f27/WIT.3004.032.0091.pdf>

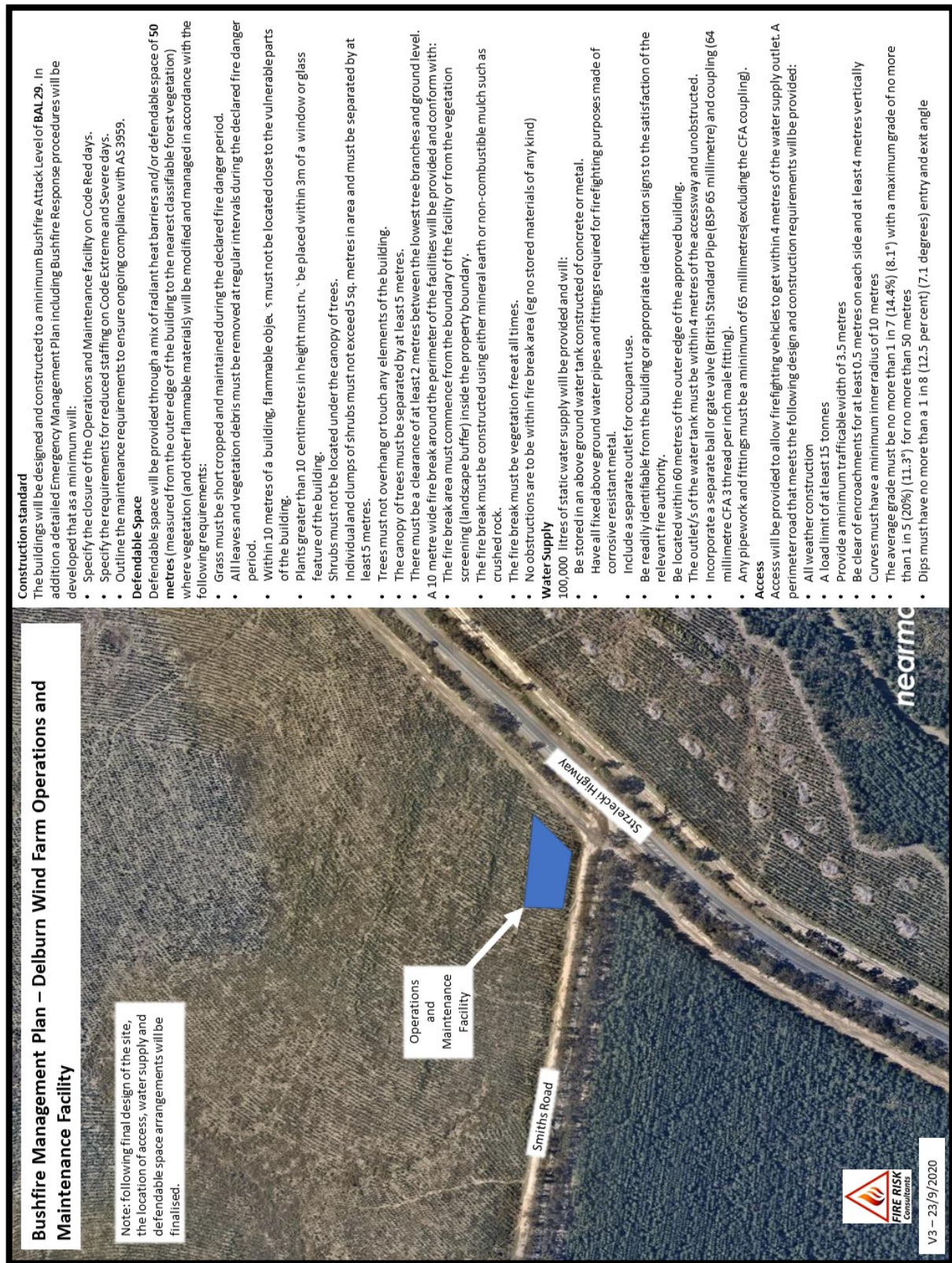
Sutton M. (1984) Extraordinary flame heights observed in pine fires on 16th February 1983 Australian Forestry 1984 Vol47(3) pp199-200

<https://www.smh.com.au/environment/researchers-confirm-first-fire-tornado-during-2003-bushfires20121119-29liv.html>

Appendix B – Bushfire Site Hazard Assessment

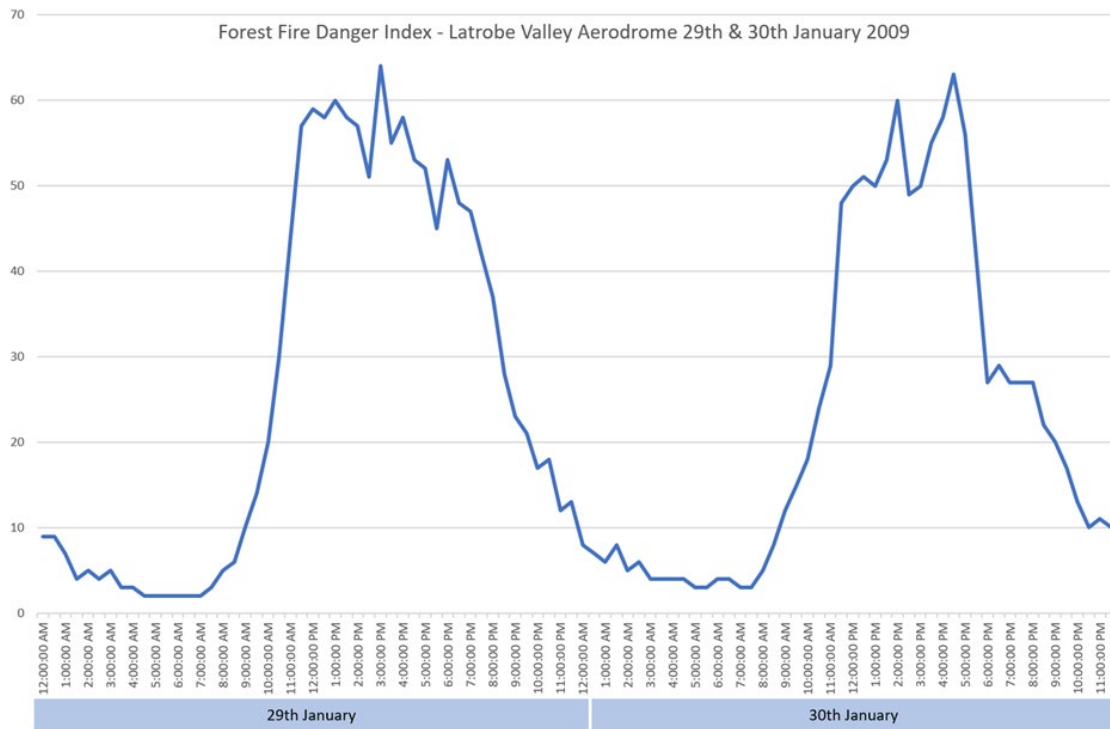


Appendix C – Bushfire Management Plan



Appendix D – Phoenix Rapidfire Predictive Scenarios

Two days of simulations were conducted using weather from Latrobe Valley Aerodrome on the 29th and 30th of January 2009. These days were both severe (tending extreme) fire danger ratings days and experienced different wind changes. These days were chosen as they have occurred on site. There may be worse days and similarly many fire days that are not as severe.



Forest Fire Danger Index, Latrobe Valley Aerodrome 29th & 30th January 2009

Three fires were ignited for the Phoenix analysis. Their locations were:

1. Creamery Rd – 1300hrs
2. Ashfords Rd – 1300hrs
3. Lyrebird Walk – 1530hrs

This is approximately the ignitions at Lyrebird Walk and Creamery Road and the escape from Ashfords Road during the 29th & 30th January 2009.

Each fire is assigned resources comprising 2 4x4 slip on units, 4 tankers and a medium helicopter.



Point of origin map for fire ignition modelling

Type	Start (hrs)	Duration (hrs)	Turn Around (min)	Quantity
Hand Trail / Slip-ons	0.50	24		2
Tanker (4000 litres)	0.75	24		4
Medium Helicopter (1400 litres)	1.00	8	30	1

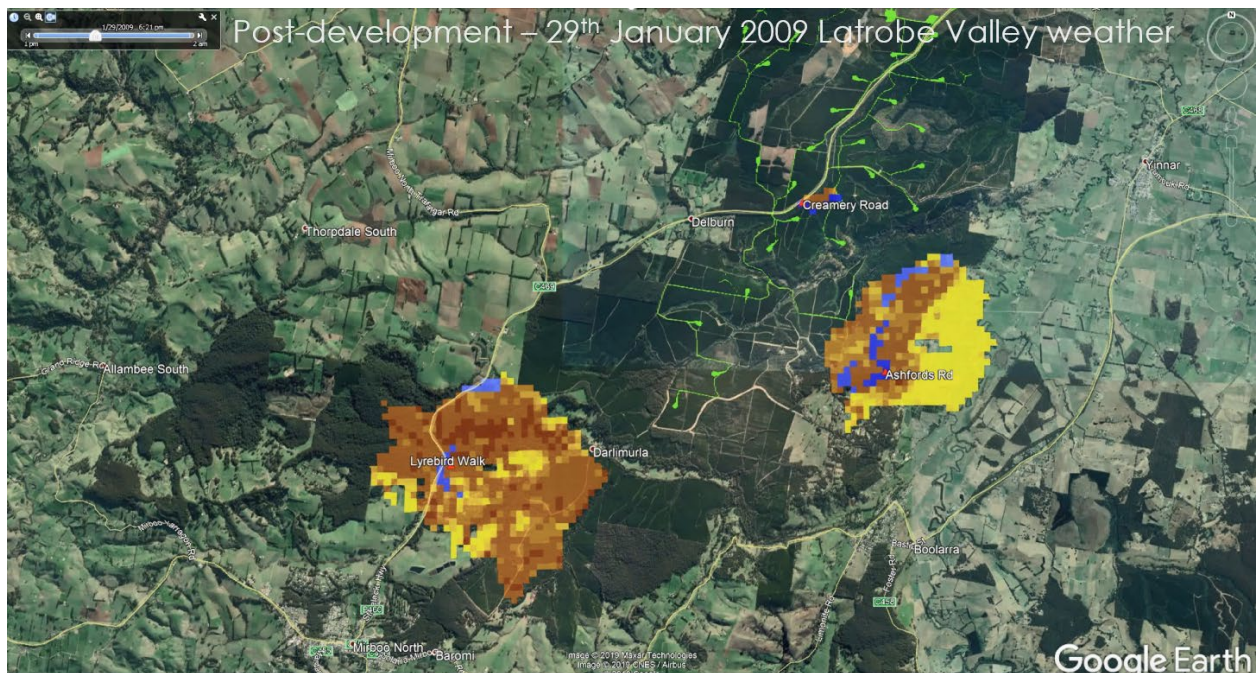
Resource allocation for individual fire ignitions, including turnaround time

Two changes were made to the Phoenix data for post development modelling. The disruption layer was modified to change widths of roads, breaks and clearings. The fuel layer was modified to show the footprint layer as mineral earth/non-flammable. The operational protocols require an area of high pruning adjacent to the cleared areas at the base of each turbine tower. The Phoenix modelling is unable to measure this additional fuel modification treatment.

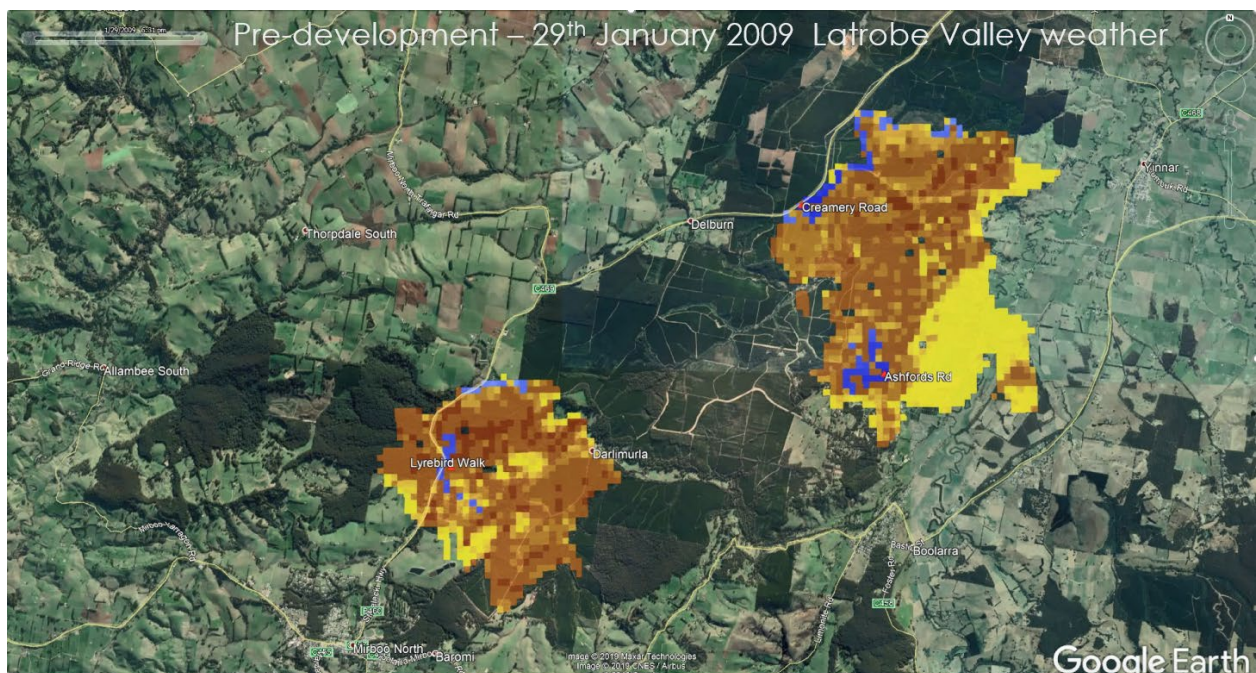
These changes mean that at low intensities and at low wind these and other barriers may stop the fire. Conversely at higher intensities and higher winds the fire and spotting will breach these non-fuel areas.



Example of plantation fuel modifications (cleared area) for proposed tower 07



Example of computer modelled fire run, 29th January 2009 (post development)



Example of computer modelled fire run, 29th January 2009 (pre development)

In the 29th Jan post development scenario, the Creamery Road fire is halted by the clearings and suppression.

With the pre development scenario, suppression fails, and the fire continues to spread.

In the 30th Jan post development scenario, the Creamery Road fire is not halted by the clearings, but the suppression keeps it on one side of the Strzelecki Highway.

In the 30th Jan pre development scenario the Creamery Road fire is much harder to suppress and crosses the Strzelecki Highway.

In the 30th Jan post development scenario, the Ashfords Road fire is slowed (and occasionally stopped) by the clearings as night approaches and is assisted by topography (downhill fire run).



Ashfords Road fire scenario, 30th January

(Note: turbines have been renumbered since the model was run)

Our analysis has indicated fires of low intensity and low spotting potential can be stopped by the larger/wider development clearings. These may be flank fires parallel to the breaks, downhill fire runs, or fires in their early development phase.

Fires of higher intensity are not stopped by the development clearings and breaks. Stronger winds, heavier fuel loads, head fires and uphill runs easily breach these clearings.

The area burnt is generally less with the development changes.

It appears that there are similar numbers of houses within the fire impact area under the pre and post development scenarios.

The Phoenix modelling has indicated that fuel changes undertaken as part of the development will under some circumstances reduce or halt fire spread and will assist with suppression activities.

Impacts on properties appear similar under both scenarios and are most likely influenced by other factors. The scenarios potentially show similar areas of residential housing being impacted as in 2009. Much of the possible house loss is influenced by the adjacent freehold native forest, immediate proximity to forest fuels and construction standard.

The modelling has examined fire conditions similar to those experienced in January 2009 at Delburn. It is recognised that there can be situations where fire conditions will be worse and the fuel modification less effective – and that under less severe conditions fuel modifications will be more effective.

Appendix E – Compliance with the CFA Guidelines

The table below demonstrates how the standards in the CFA Guideline have been achieved through the design response and ongoing mitigation treatments for the Proposal.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
1. Development of installation		
1.1 The Country Fire Authority (CFA) has a statutory responsibility under The CFA Act (1958) for (the more) effective control of the prevention and suppression of fires in the country area of Victoria. For renewable energy installations, CFA's involvement may be required in relation to planning permit approval, the assessment of dispensations under the Building Act and Regulations, and/or the provision of written advice in relation to dangerous goods storage and handling.	✓	CFA consultation has occurred as part of the preparation for a Planning Permit application. It is unlikely that consultation will be required under the Building Act. Analysis will be undertaken to determine if consultation is required with CFA under the Dangerous Goods (Storage and Handling) Regulations 2012 for the battery installation.
1.1.1 All design requirements need to take into consideration all the relevant Australian Standards.	✓	In the context of bushfire safety, the water tanks will be installed using AS 2419 and the buildings, where required, will be constructed to AS 3959.
1.1.2 In the planning context, CFA's involvement may be via referral from a municipal council (responsible authority) for CFA's consideration and comment. If this occurs, this document is a guide as to the conditions CFA is likely to include in response to council's referral. The conditions prescribed in this guideline should be incorporated by the applicant in the planning permit application.	✓	CFA has been consulted through the development of this report. Following the completion of the relevant documentation, ongoing engagement will occur with CFA.
1.1.3 Dangerous Goods Written Advice - Where the facility includes battery storage, CFA's responsibility may include the provision of written advice under Regulations 54 and 55 of the Dangerous Goods (Storage and Handling) Regulations 2012. This advice will be issued by the State Infrastructure and Dangerous Goods Unit.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.
1.1.4 Any building on Site is required to comply with the National Construction Code. If a development has a building that will be over 500m ² , and dispensations are requested, the local delegated CFA fire safety officer will handle such applications.	✓	The Proposal does not outline any buildings that are larger than 500m ² .

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
<p>1.1.5 Any new development needs to ensure that the design of plans and infrastructure installations consider the requirements of the Victorian Occupational Health and Safety Act 2004 (OHS Act) and the Occupational Health and Safety Regulations (2017).</p> <p>Section 28 of the OHS Act, states the following in relation to the duty of designers:</p> <p>“A person who designs a building or structure or part of a building or structure who knows, or ought reasonably to know, that the building or structure or the part of the building or structure is to be used as a workplace must ensure, so far as is reasonably practicable, that it is designed to be safe and without risks to the health of persons using it as a workplace for a purpose for which it was designed.”</p> <p>Owners/occupiers have obligations under the OHS Act to ensure the health and safety of people ‘so far as is reasonably practicable’. This legislation requires consideration of risk control measures and safe systems of work, which for renewable energy installations may relate to the development of systems and activities for:</p> <ul style="list-style-type: none"> • Housekeeping • Security (monitoring, alarms, etc) • Undertaking hot works • Ignition source control • Vehicle, plant and equipment maintenance requirements. 	<p>✓</p>	<p>The bushfire risk assessment has considered mitigation treatments that will reduce the risk to workers and visitors.</p> <p>Examples of mitigation are:</p> <ul style="list-style-type: none"> • Onsite firefighting capability will only be conducted after the completion of relevant training. • Hot Works Permit system will be implemented. • Ignition source control including the management of smoking will be implemented. • An induction process will be implemented that ensures all visitors and contractors understand the emergency management arrangement including bushfire response.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
<p>1.1.6 To enable CFA to provide timely and accurate advice, the following information is required to be provided at the planning and design stage:</p> <ul style="list-style-type: none"> • Details of the facility, its operation, size and type • Details of any buildings on-Site, their floor area, class and use (e.g. inverter plant room, substation, maintenance shed, office) • Details of any battery, diesel or other dangerous goods storage/handling, including the class identification, quantity, type (bulk or packaged) and location • Details of the proposed fire protection system for the Site and design standards. 	✓	This report outlines the requested information including a description of the Proposal, Site plan, locations of the various infrastructure elements and the layout of firefighting water supply.
2. Planning, design and construction		
<p>2.1 The design team should consult with CFA as a key stakeholder early in the planning and design phase to ensure that CFA can consider the implications of the design on emergency response. Plans for the facility can be forwarded to CFA for consideration prior to a consultation meeting. Documentation is to be submitted to firesafetyreferrals@cfa.vic.gov.au.</p> <p>Where any proposed facility design does not or is unable to meet the requirements of this guideline, designers are to contact CFA's State Infrastructure and Dangerous Goods Unit for design review and advice.</p>	✓	Consultation has occurred with CFA and will continue as required.
<p>2.1.1 The construction and commissioning phases of facility development pose challenges for effective risk management. During construction of any renewable energy installation, Site occupiers must:</p> <ul style="list-style-type: none"> • Develop an Emergency Management Plan for the construction and commissioning phases 	✓	The Proponent has committed to developing an Emergency Management Plan for the construction and commissioning phases.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
<ul style="list-style-type: none"> • Ensure that appropriate permits have been issued for work during the Fire Danger Period, and that any conditions on permits are adhered to • Adhere to restrictions on Total Fire Ban or days of high fire danger (refer to www.cfa.vic.gov.au) • Carry fire extinguishers or firefighting equipment in vehicles • Carry emergency communications equipment • Ensure vehicles keep to tracks whenever possible • Restrict smoking to prescribed areas and provide suitable ash and butt disposal facilities. 	✓	The Proponent has committed to ensure that all relevant permits are in place. The Emergency Management Plan will outline the need to carry first attack firefighting equipment on vehicles, have in place an emergency communications system and manage ignition sources.
Construction phase		
<p>The fire protection measures contained within this guideline should be installed during the construction phase. This will ensure that the Site has appropriate fire protection during this phase.</p> <p>CFA requires that the emergency information container be:</p> <p>2.3.7 Painted red and marked 'EMERGENCY INFORMATION' in white contrasting lettering not less than 25mm high</p> <p>2.3.8 Located at all vehicle access points to the facility, installed at a height of 1.2m - 1.5m</p> <p>2.3.9 Accessible with a fire brigade standard '003' key.</p>	✓	<p>The static water supplies will be installed at the commencement of the construction phase. Section 4.4.3 outlines the proposed location of five water tanks with a minimum capacity of 100,000 litres each.</p> <p>At the commencement of each of the turbine construction stages, an emergency information container will be installed at the main access to the turbine compound that includes the following:</p> <ul style="list-style-type: none"> • Emergency contact details. • Site Plan. • Safe operation specifications for the wind turbine.
2.4 Fire Brigade Site Familiarisation and Exercises		
2.4.1 Prior to commissioning the facility, operators should offer a familiarisation visit and explanation of emergency service procedures to CFA and other emergency services. Information in relation to the specific hazards and fire suppression requirements of the Site should be provided to CFA during this visit. Contact with the local CFA district to arrange local brigade contact. Refer to https://www.cfa.vic.gov.au/contact/#district	✓	<p>Regular engagement will occur with CFA during the construction phase and into the operational phase. An internal policy will ensure this occurs along with it being specified within the Emergency Management Plan.</p> <p>The construction project plan will include the requirement to engage with CFA prior to final commissioning.</p>
2.4.2 A schedule for ongoing Site familiarisation to account for changing personnel, Site infrastructure and hazards should be developed in conjunction with the local CFA brigade.	✓	CFA have been engaged through the development of the proposal and this will continue through the life of the project.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
2.4.3 An annual emergency exercise should be conducted at the Site, with an invitation extended to the local CFA brigade to participate.	✓	The Emergency Management Plan when developed will outline the requirement to engage with CFA regularly to undertake annual emergency exercises.
2.5 Training for Facility Staff		
2.5.1 Site and operational risks and hazard	✓	The Operational Protocols outline the requirements to manage risks and hazards.
2.5.2 Site emergency management roles, responsibilities and arrangements	✓	The Operational Protocols outline the requirements to have an Emergency Management Plan that outlines roles and responsibilities during an emergency.
2.5.3 The use of any firefighting equipment where there is an expectation for staff to undertake first aid firefighting	✓	The Operational Protocols outline the requirements for firefighting equipment and staff training. .
2.5.4 The storage, handling and emergency procedures for dangerous goods on-Site	✓	Following the final design, if dangerous goods are stored on-Site, relevant training will be provided to staff in accordance with the organisations OH & S obligations.
2.5.5 The location of first-aid facilities and application of first aid equipment	✓	The Emergency Management Plan when developed, will outline the location of first aid facilities and ensure trained staff are on-Site to administer first aid if required.
3.1 Access		
3.1.1 A four (4) metre perimeter road should be constructed within the ten (10) metre perimeter fire break.	✓	Due to the site layout being spread over a large area, the provision of a perimeter road is not achievable. However the widening of roads will ensure increased ability for firefighters to access the areas surrounding the turbines.
3.1.2 Roads are to be of all-weather construction and capable of accommodating a vehicle of 15 tonnes.	✓	The roads will be of all weather construction and capable of accommodating vehicles of up to 15 tonnes.
3.1.3 Constructed roads should be a minimum of four (4) metres in trafficable width with a four (4) metre vertical clearance for the width of the formed road surface.	✓	The roads will be at least 4 metres in width and will be provided with a 4 metre vertical clearance. In most cases, the roads will be wider than four metres.
3.1.4 The average grade should be no more than 1 in 7 (14.4% or 8.1°) with a maximum of no more than 1 in 5 (20% or 11.3°) for no more than 50 metres.	✓	All roads will meet the grade requirements.
3.1.5 Dips in the road should have no more than a 1 in 8 (12.5% or 7.1°) entry and exit angle.	✓	All roads will meet the dip requirements.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
3.1.6 Incorporate passing bays at least every 600m which must be at least 20m long and have a minimum trafficable width of 6m. Where roads are less than 600m long, at least one passing bay is to be incorporated.	✓	All roads that are widened for the project will be a minimum width of six metres.
3.1.7 Road networks must enable responding emergency services to access all areas of the facility.	✓	The project relies on the existing road network however it will widen the roads and increase the distance between the road edge and the plantations.
3.1.8 The provision of at least two (2) but preferably more access points to the Site, to ensure safe and efficient access to and egress from areas that may be impacted or involved in fire. The number of access points should be informed through a risk management process.	✓	There are numerous access points for the Wind Farm.
3.2 Firefighting water supply		
3.2.1 The static water storage tank shall be of not less than 45,000 litres effective capacity. The static water storage tank(s) must be an above-ground water tank constructed of concrete or steel. The location and number of tanks should be determined as part of the Site's risk management process and in consultation with a CFA delegated officer.	✓	The development is being provided with five static water tanks that contain 100,000 litres of water each.
3.2.2 The static storage tanks shall be capable of being completely refilled automatically or manually within 24 hours.	✓	The static storage tanks will be capable of being refilled within 24 hours through the use of water cartage contractors.
3.2.3 The hard-suction point shall be provided, with a 150mm full bore isolation valve equipped with a Storz connection, sized to comply with the required suction hydraulic performance. Adapters that may be required to match the connection are 125mm, 100mm, 90mm, 75mm, 65mm Storz tree adapters with a matching blank end cap to be provided.	✓	The outlets will conform with the CFA guidelines and will be provided with the appropriate outlets.
3.2.4 The hard-suction point shall be positioned within 4m to a hardstand area and provide clear access for fire personnel.	✓	A hard stand area will be provided at each tank in accordance with the CFA guideline.
3.2.5 An all-weather road access and hardstand shall be provided to the hard-suction point. The hardstand shall be maintained to a minimum of 15 tonne GVM, 8m long and 6m wide or to the satisfaction of the relevant fire authority.	✓	A hard stand area will be provided at each tank in accordance with the CFA guideline.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
3.2.6 The road access and hardstand shall be kept clear at all times.	✓	All roads and hardstand will be maintained clear to allow for emergency service vehicle access.
3.2.7 The hard-suction point shall be protected from mechanical damage (i.e. bollards) where necessary.	✓	Bollards will be installed to protect the tank outlets.
3.2.8 Where the access road has one entrance, a 10m radius-turning circle shall be provided at the tank.	✓	All tanks are located on through roads.
3.2.9 An external water level indicator is to be provided to the tank and be visible from the hardstand area.	✓	External water level indicators will be provided at each tank.
3.2.10 Signage shall be fixed to each tank.	✓	Signage in accordance with the CFA guideline will be provided at each tank. This will include the following: Fire Water 100,000 litres
3.2.11 Signage shall be provided at the front entrance to the Site, indicating the direction to the static water tank and being to the satisfaction of a CFA delegated officer.	✓	Directional signs will be placed in key locations to indicate the locations of static water supplies. A site plan showing the location of water supplies will be available within the emergency information containers.
3.3 Dangerous Goods Storage and Handling		
3.3.1 The requirements of the relevant Australian Standards must be complied with, e.g. (DR) Australian Standard 5139: Electrical installations – Safety of battery systems for use with power conversion equipment; Australian Standard 3780: The storage and handling of corrosive substances; and Australian Standard 1940: The storage and handling of flammable and combustible liquids.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.
3.3.2 Signage and labelling compliant with the Dangerous Goods (Storage and Handling) Regulations 2012, and the relevant Australian Standards is to be provided.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.
3.3.3 All dangerous goods stored on-Site must have a current safety data sheet (SDS). Safety data sheets must be contained in the Site's emergency information book, in the emergency information container.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
3.3.4 Appropriate material (including absorbent, neutralisers, equipment and personal protective equipment) for the clean-up of spills is to be provided and available on-Site.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.
4. Site Operation		
4.1 Operation and Maintenance of Facilities		
4.1.1 Maintenance and repair activities that involve flame cutting, grinding, welding or soldering (hot works) are to be performed under a 'hot work permit' system or equivalent hazard or risk management process.	✓	A hot works permit system and other ignition controls will be put in place at the Site. This will be managed through relevant policies and procedures, staff training, visitor and contractor induction and the requirement to have a water supply available during hot works.
4.2 Fuel/Vegetation Management		
4.2.1 Grass is to be maintained at below 100mm in height during the declared Fire Danger Period.	✓	The areas including roadsides and surrounding the turbines and other infrastructure will be maintained. In a number of areas including around the turbines, within the Operations and Maintenance facility will be provided with a non combustible surface.
4.2.2 A fire break area of ten (10) metres width is to be maintained around the perimeter of the facilities, electricity compounds and substations. This area is to be of non-combustible mulch or mineral earth.	✓	All facilities will be provided with fire breaks and in most cases well in excess of 10 metres.
The fire break area must commence from the boundary of the facility or from the vegetation screening (landscape buffer) inside the property boundary. The fire break must be constructed using either mineral earth or non-combustible mulch such as crushed rock.	✓	Due to the nature of the Wind Farm development, the fire breaks will be provided around the edge of the infrastructure.
The fire break must be vegetation free at all times.	✓	The fire break will be free from vegetation at all times.
No obstructions are to be within fire break area (e.g. no stored materials of any kind).	✓	The areas around the infrastructure that is considered as a fire break will be clear of stored materials.
4.2.3 Adhere to restrictions and guidance during the Fire Danger Period, days of high fire danger and Total Fire Ban days	✓	The operators will ensure all legislative obligations are complied with including appropriate permits during the fire danger period.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
4.2.4 All plant and heavy equipment is to carry at least a 9-litre water stored-pressure fire extinguisher with a minimum rating of 3A, or firefighting equipment as a minimum when on-Site during the Fire Danger Period.	✓	All plant and equipment will carry at least a 9 litre water extinguisher with a minimum rating of 3A during the fire danger period. In most cases the Operational Protocols (Appendix F) require in excess of this requirement.
4.2.5 There is to be no long grass or deep leaf litter in areas where plant and heavy equipment will be working.	✓	Vegetation surrounding the work areas will be managed during the fire danger period to less than 100mm.
5. Wind Facilities		
5.1 Siting for Wind Facilities		
5.1.1 Where practicable, wind energy installations can be sited on open grassed areas (such as grazed paddocks). Vegetation is to be managed as per the requirements of this guideline, or as informed through a risk management process.	✓	This Wind Farm is sited in a Plantation however significant vegetation removal and management is being implemented to offset this risk. A risk management process has been applied and various treatments have been implemented in accordance with this report.
5.1.2 Wind turbines are to be located no less than 300 metres apart. This provides adequate distance for aircraft to operate around a wind energy facility given the appropriate weather and terrain conditions. Fire suppression aircraft operate under visual flight rules. As such, fire suppression aircraft only operate in areas where there is no smoke and can operate during the day or night.	✓	The separation between the wind turbines is well in excess of 300 metres.
5.1.3 Installed weather monitoring stations can be high and difficult to see and are hazardous to CFA flight operations during fires. CFA requires the following in relation to the installation of these monitoring stations: <ul style="list-style-type: none"> Monitoring towers higher than 100 feet must be clearly marked and guy wires fitted with markers The installation must be notified to CFA and Geoscience Australia (for inclusion in the Vertical Obstruction Database). 	✓	Monitoring towers will be clearly marked and guy wires fitted with markers for all towers higher than 100 feet.
5.1.4 Adjoining property use and distances to habitable buildings must be considered in the design of wind energy installations, with regard made to turbine height and prevailing wind speeds.	✓	Adjoining properties have been considered as part of the Wind Farm design to ensure that the maximum distance is achieved from private property. There are no turbines located within 1 kilometre of a dwelling.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
5.2 Operation and Maintenance of Wind Facilities		
5.2.1 Wind turbine manufacturers must provide specifications for safe operating conditions for temperature and wind speed. This information must be provided within the content of the emergency information book.	✓	The specifications for safe operating conditions will be provided within the emergency information containers.
5.2.2 A wind energy facility emergency plan must include maximum operational wind speed and temperature conditions and operating procedures to limit fire risk. This information must be provided within the content of the emergency information book.	✓	The maximum operational wind speed and temperature conditions will be provided within the emergency information containers.
7 Battery installations		
7.1 Siting of Battery Installations		
7.1.1 Containers/infrastructure for battery installations are to be located so as to be directly accessible to emergency responders (e.g. provided with a suitable access road).	✓	The battery storage area is located adjacent to a public road and is accessible to emergency service responders.
7.1.2 Adequate ventilation of the battery container/storage area is to be provided where required under (DR) Australian Standard 5139 Electrical Installations – Safety of battery systems for use with power conversion equipment; the manufacturer’s requirements and/or SDS for battery storage.	✓	Ventilation will be provided to the battery storage area in accordance with DRAS 5139 2019.
7.1.3 Containers/infrastructure for battery installations are to be provided with appropriate spill containment/bunding that includes provision for fire water runoff.	✓	The battery storage area will be designed and constructed to ensure that the fire water runoff is contained.
7.2 Operation and Maintenance of Battery Installations		
7.2.1 Battery installations that contain dangerous goods may have to comply with the requirements of the Dangerous Goods Act 1985; the Dangerous Goods (Storage and Handling) Regulations 2012; and relevant Australian Standards.	✓	In the event that Dangerous Goods are stored on Site, engagement with CFA will occur under the Dangerous Goods (Storage and Handling) Regulations 2012.
7.2.2 Battery storage manufacturers must provide specifications for safe operating conditions for temperature and the effects on battery storage if involved in fire. This information must be provided within the content of the emergency information book.	✓	Safety information relating to the battery storage infrastructure will be provided within the emergency information containers.

Item from CFA Guidelines for Renewable Energy Installations	Compliance	Comment
7.2.3 Battery installations are to be kept free of extraneous materials and combustible materials of all kinds. Regular inspections and housekeeping is to be conducted to ensure materials do not accumulate.	✓	The operations plan for the Site will include the requirement to regularly inspect and undertake appropriate housekeeping within the battery storage area.
7.2.4 Battery installations are to be serviced/maintained as per the manufacturer's requirements.	✓	Maintenance will be undertaken as specified by the manufacturers and will be outlined within the Site operations plan.
7.3 Fuel/Vegetation Management at Battery Installations		
7.3.1 Containers/infrastructure for battery installations must be clear of vegetation for 10 metres on all sides, including grass. CFA requires non-combustible mulch such as stone or mineral earth within this 10-metre area.	✓	The battery storage area will be provided with an Asset Protection Zone for a distance of 10 metres which will have no combustible material.

Appendix F – DWF and HVP Operational Protocols

Relevant extracts from the DWF / HVP Operation Protocols February 2019 Version 1:

4.2 Project Design

To facilitate the movement of aircraft around the site, especially firebombing aircraft, tall structures such as wind monitoring towers and turbines should be spaced no closer than 300 meters apart.

4.4 Aerial spraying, inspection and firefighting

d) In the event of an emergency event involving aerial operations (i.e. aerial firefighting, air ambulance), HVP shall notify OSML and/or the site operations team as soon as possible and the shutdown procedure shall be implemented as soon as practicable following the notice.

5.1 HVP fire protection guidelines for forest operations

HVP prepare and annually review Fire Protection Guidelines for Forest Operations which apply to land managed by HVP.

Sections of the guidelines that are relevant to the project Works have been summarised in this Section 0 below; however, if there are any inconsistencies with the HVP guidelines, the guidelines are to supersede this summary.

5.1.1 Forest Operations Restriction Period

All contractors on land managed by the HVP are required to provide appropriate fire equipment and follow work practices and fire restriction guidelines at all times during the Forest Operations Restriction Period or whenever there is a likelihood of the spread of fire.

The Forest Operations Restriction Period - commences on 1st December each year or earlier if the fire danger period has been declared by the CFA. The Forest Operations Restriction Period shall continue whilst either the fire danger period or the prohibited period are in force or may be extended if necessary, by HVP.

5.1.2 Fire equipment

a. All OSML personnel and contractors must provide firefighting equipment as specified in Table 3 at all times during the Forest Operations Restriction Period and outside of this period where the weather conditions in the area are such that there is a reasonable possibility of the spread of a fire.

Item	Vehicles	Plant
Extinguisher	1.0 kg AB(E)	9L stored pressure water extinguisher on hand <u>or</u> a 9L knapsack fully charged and in working order on hand <u>plus</u> 4.5 kg AB(E) <u>or</u> inbuilt extinguisher (> 4.5 kg AB(E))
Water supply		
Rake hoe	Rake hoe	Rake hoe
Communications	UHF Radio or mobile telephone	

Table 3: Firefighting equipment requirements

Requirements for fire extinguishers are guided by:

- AS 2444-2001 Portable fire extinguishers and fire blankets – selection and location;

- AS 5062–2006 Fire protection for mobile and transportable equipment;
- AS 1851–2012 Routine servicing of fire protection system and equipment; and
- MFB Fire Safety Guideline GL–16 Selection, installation and maintenance of portable fire extinguishers.

Fire extinguishers must be in a reasonably accessible location and be ready for use by simply removing a pin or similar. Every fire extinguisher must have a current tag or sticker attached that is legible and indicates the date of the most recent test. The test tag must have been punched or signed and dated by an authorised inspector within the last 6 months +/- 1 month. No other system is acceptable.

All persons must know the location of the fire extinguisher, the type fitted and its application and be trained in the use of the fire extinguishers.

c. During the Forest Operations Restriction Period an approved mobile firefighting unit must be located at each work front whilst construction related activity is in progress. A mobile firefighting unit shall:

- have a minimum capacity of 400 litres;
- be fully charged with water;
- have a minimum of 30 metre length of 19mm hose connected to a nozzle and minimum 5 H.P. pump;
- be capable of delivering a steady stream of water to any point where operations are taking place.

It shall be noted that HVP preference a mobile unit to be vehicle based, such as the units used by HVP staff. These are 300L or 400L units, pump, hose and assoc. equipment on the back of a Landcruiser or Hilux tray ute ("slip-ons").

d. Firefighting equipment must be in good working order

7.1 Emergency Response

a. OSML must prepare and maintain a Project Emergency Response Plan (ERP) in consultation with HVP. The ERP shall not be inconsistent with the HVP Gippsland Emergency Management Plan and shall be reviewed on an annual basis.

b. To facilitate effective emergency communications between HVP, CFA and OSML, OSML site permanent staff vehicles shall have installed at least one (1) radio capable of communicating on all CFA/FFMV fire agency channels along with the HVP trunk radio network, and one (1) 80 channel UHF CB radio.

7.2 Emergency Participation

a. Staff based permanently on-site for the construction and/or operation of the Project will be strongly encouraged to participate with local emergency response groups (i.e. CFA and SES) in order to provide site familiarity, technical expertise and added resource support in the event of an emergency event on or near the Project site.