

**Hexham  
Wind Farm**

# **Chapter 23**

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**Fire risk**





## 23.1 Overview

This chapter provides an overview of potential fire hazards within the project site, and an assessment of potential fire hazards and risks associated with the construction and operation of the project. The information presented is based on the findings of the **Fire Risk Impact Assessment** prepared by Fire Risk Consultants (provided in Appendix P) in accordance with the requirements of the Country Fire Authority (CFA) (2025) Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA Guidelines).

The project site and surrounding landscape is predominantly cleared and used for agriculture (sheep and cattle grazing). Native vegetation within the project site is largely restricted to roadside reserves and along watercourses, with small, isolated areas on private land. The entire project site is mapped within a designated bushfire prone area.

Large bushfires have historically occurred in the surrounding landscape. While these have not affected the project site, there is potential for these to occur within the project site under elevated fire danger conditions. These bushfires are most likely to be driven by northwest and southwest winds.

The project has been designed in accordance with the requirements of the CFA Guidelines to avoid and minimise the potential impact of fire on the proposed wind farm and battery energy storage system, as well as the surrounding landscape and infrastructure. In complying with the requirements of the CFA Guidelines, the project is considered to achieve the objectives of Clause 13.02-1S Bushfire Planning of the Moyne Planning Scheme.

The assessment undertaken by Fire Risk Consultants confirms that, with the implementation of management measures outlined in the CFA Guidelines, the project would not increase the risk of fire to surrounding communities, farming assets and other infrastructure. The CFA has been consulted throughout the project development process and consultation will continue following approval of the planning permit during the development of the Fire Management Plan and Emergency Management Plan.

## 23.2 EES scoping requirements

The EES scoping requirements outline the matters that are required to be addressed within the EES submission. While there is no evaluation objective or key issue outlined in the EES scoping requirements that are specific to fire risk, the fire risk assessment considered the matters set out in Table 23.1 as relevant to fire risk.

**Table 23.1** EES evaluation objectives and key issues

Reference	EES Requirement
<i>Biodiversity and habitat</i>	<p><b>Likely effects</b></p> <p>Assess the direct and indirect effects of the project, including access roads and transmission lines, on biodiversity values, including:</p> <ul style="list-style-type: none"> <li>• direct removal of individuals or destruction of habitat;</li> <li>• disturbance or alteration of habitat conditions (e.g., habitat fragmentation, severance of wildlife corridors or habitat linkages, changes to water quantity or quality, changes to wetland function, <b>fire hazards</b> etc.);</li> <li>• on the ability of wetlands to support listed species and communities;</li> <li>• on the health and viability of groundwater dependent ecosystems;</li> <li>• threats to mortality of listed threatened fauna; and</li> <li>• the presence and potential spread of any declared weeds, pathogens and pest animals within and in the vicinity of the project area.</li> </ul>
<i>Land use and socioeconomic</i>	<p><b>Likely effects</b></p> <p>Identify potential long and short-term effects of the project on existing and potential land uses (such as aerial spraying and other agricultural activities), public infrastructure (such as roads, transport routes) and <b>fire and emergency management</b> (such as aerial firefighting).</p>
<i>Land use and socioeconomic</i>	<p><b>Design and mitigation</b></p> <p>Describe consultation undertaken with Airservices Australia, Civil Aviation Safety Authority and <b>Country Fire Authority</b> regarding potential issues and merits of mitigation measures and propose design responses and/or other mitigation measures to reduce potential effects to aviation safety.</p>

### 23.3 Legislation, policy and guidelines

The fire risk assessment assessed the potential fire risk from the construction and operation of the project, including the proposed battery energy storage system, against the requirements of Clause 13.02-1S Bushfire Planning of the Moyne Planning Scheme, and the CFA Guidelines.

Key legislation, policies and guidelines relevant to the **Fire Risk Impact Assessment** (Appendix P) are summarised in Table 23.2.

**Table 23.2** Relevant legislation and guidelines

Legislation/guideline	Description	Relevance to project
State		
<i>Planning and Environment Act 1987</i>	<p>The purpose of the <i>Planning and Environment Act 1987</i> is to establish a framework for planning the use, development and protection of land in Victoria. The Act sets out the process for obtaining permits under schemes, settling disputes, enforcing compliance with planning schemes and permits, and other administrative procedures.</p>	<p>The land within the project site is subject to the requirements of the Moyne Planning Scheme.</p> <p>The Moyne Planning Scheme contains the following Clauses relevant to fire risk (discussed further in Section 23.3.2):</p> <ul style="list-style-type: none"> <li>• Clause 13.02-1S Bushfire Planning</li> <li>• Clause 44.06 Bushfire Management Overlay.</li> </ul>
<i>Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA Guidelines)</i> (CFA, 2025)	<p>The purpose of the CFA Guidelines is to provide details about standard measures and processes in relation to fire safety, risk and emergency management that should be considered when designing, constructing and operating new renewable energy facilities, and upgrading existing facilities.</p> <p>The guidelines seek to:</p> <ul style="list-style-type: none"> <li>• Facilitate consideration of fire risk management in the design, construction and operation of renewable energy facilities</li> <li>• Reduce the occurrence and consequences of fire at renewable energy facilities through risk-based design, and enable safe and effective emergency response through the provision of fire protection systems.</li> <li>• Inform fire and risk management processes for all phases of a facility's lifespan, through the preparation of Risk Management Plans by designers, and Fire Management Plans by facility operators.</li> <li>• Support operators to prepare Emergency Management Plans that effectively consider fire risk from the facility, and bushfire.</li> </ul>	<p>Section 3 (Fire Risk Management) of the CFA Guidelines outlines the risk assessment process for identifying hazards that may cause fires. Fire risk associated with the proposed wind farm and battery energy storage system was assessed in accordance with this risk management framework.</p> <p>An assessment against the relevant model requirements of the CFA Guidelines was also undertaken.</p> <p>The CFA Guidelines have been incorporated into the design of the project. Additional commitments from the CFA Guidelines have been adopted for management controls that would be implemented during construction and operation of the project.</p>
<i>Moyne Municipal Fire Management Plan</i> (Moyne Shire Council, 2020)	<p>The Moyne Municipal Fire Management Plan outlines the risk of fires within the municipality and treatments to offset these risks, including roads identified as Strategic Fire Breaks.</p>	<p>Fire breaks identified in the Moyne Municipal Fire Management Plan were considered in the fire hazard assessment for the project site.</p>
<i>Barwon South West: Bushfire Management Strategy 2020</i> (DELWP, 2020b)	<p>The Safer Together approach was developed by the Department of Environment, Land, Water and Planning (DELWP) with the aim of reducing bushfire risk in Victoria.</p> <p>As part of the Safer Together approach, strategies for the regions of Victoria were developed to reflect the specific environments and communities.</p>	<p>The regional strategy relevant to the project site is the Barwon South West: Bushfire Management Strategy 2020.</p> <p>This management strategy provides an overview of fire history and patterns in the project region.</p>
<i>AS/NZS ISO 31000:2018 Risk management – Guidelines</i>	<p>ISO 31000:2018 provides a common approach for managing risk. This risk framework has been adopted in the National Emergency Risk Assessment Guidelines (Australian Institute for Disaster Resilience, 2020), which provides a method for assessing and managing emergency-related risks.</p>	<p>The fire risk assessment follows the approach outlined in the ISO 31000:2018 Risk management – Guidelines.</p>

## 23.1 Investigation area

The fire risk assessment included a review of bushfire history in the project site and surrounds, and consideration of bushfire hazards at the project site, within the local area (within one kilometre of the project site) and at a landscape scale (within 10 kilometres of the project site). This investigation area is shown in Figure 23.1.

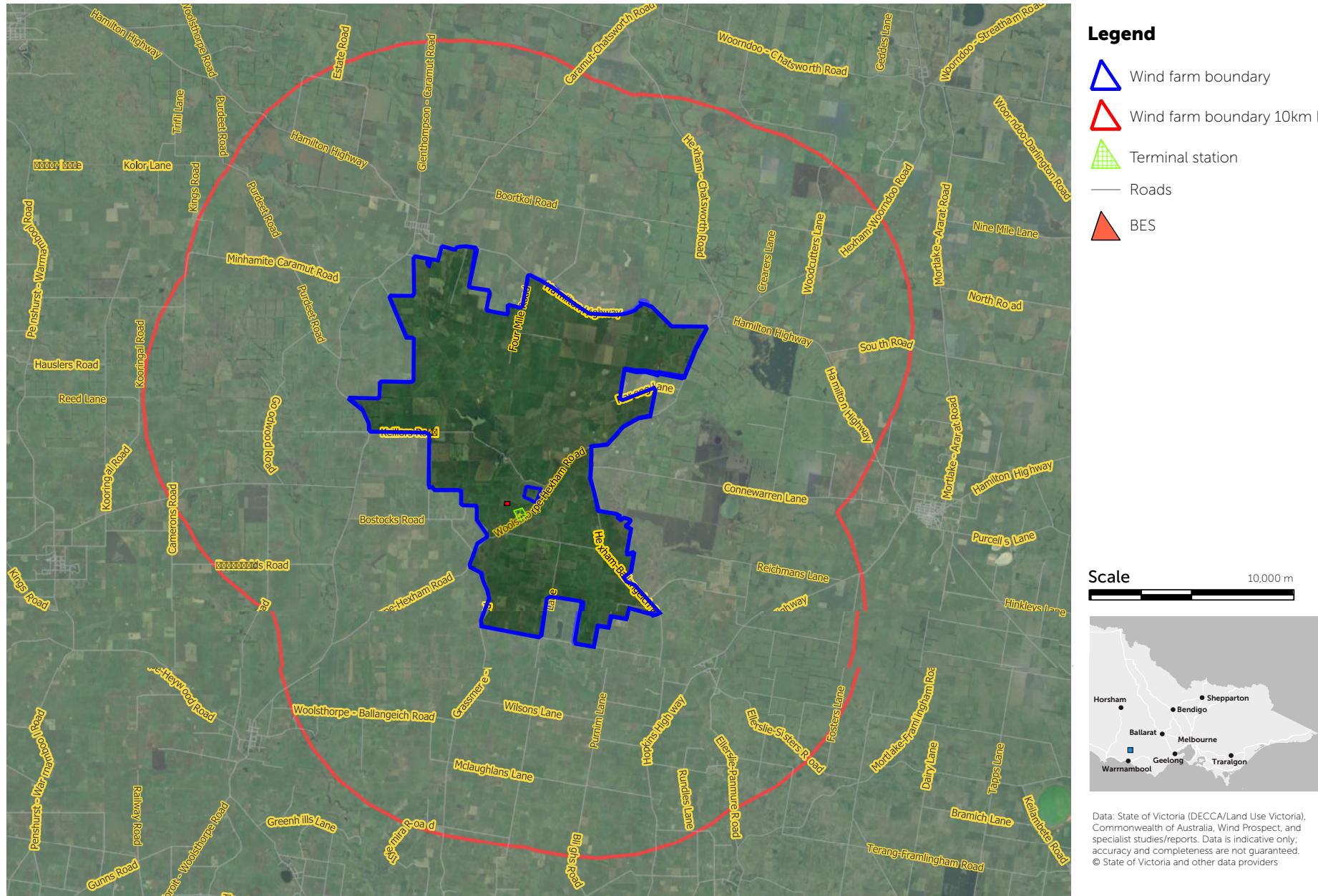


Figure 23.1 Fire risk assessment investigation area

## 23.2 Method

The fire risk assessment for the project site involved:

- a review of bushfire history in the project site and surrounds (DEECA, 2023c)
- a review of existing bushfire risk and hazards, including consideration of the Bushfire Management Overlay (Clause 44.06 of the Moyne Planning Scheme), designated bushfire prone areas and landscape characteristics
- an assessment against the objectives of Clause 13.02-1S Bushfire Planning of the Moyne Planning Scheme, including a bushfire hazard and landscape assessment
- an assessment against the fire risk management framework and model requirements of the CFA Guidelines
- identification of controls to manage fire risk.

The CFA Guidelines outline the types of hazards to be considered in relation to wind farms and battery energy storage systems during project design, construction and operation. Fire hazards relevant to the project were identified through consultation with the proponent, a review of relevant documents and consideration of previous fire history involving wind energy projects.

The fire risk assessment considered the likelihood and consequence of a fire hazard occurring, assessed within a risk matrix Table 23.5. The likelihood categories and consequence criteria, presented in Table 23.3 and Table 23.4 respectively, were developed based on bushfire-specific factors such as sources of ignition, ability of the fire to spread, history of ignitions with similar infrastructure, and proximity to other infrastructure and dwellings.

**Table 23.3** Likelihood categories

Likelihood	Description
Very likely	Almost certain or will definitely occur, and /or high level of recorded incidents, or there is a strong likelihood that the event will occur.
Likely	High probability it may occur; and/or some recorded incidents.
Unlikely	It is not expected to occur, but it is not impossible.

**Table 23.4** Consequence criteria

Consequence	Description
Minor	<ul style="list-style-type: none"><li>• Minor or negligible consequences or effects.</li><li>• Isolated damage to property with no ongoing impact on operations.</li><li>• First aid injuries with no hospitalisations required.</li><li>• Impact on the environment with short-term effects.</li></ul>
Moderate	<ul style="list-style-type: none"><li>• Moderate loss of property with the facility operating again in the short-term.</li><li>• Medical treatment may be required but no fatalities or long-term effects.</li><li>• Localised damage that can be rectified.</li><li>• Some environmental impact with short to long-term effects.</li></ul>
Major	<ul style="list-style-type: none"><li>• Significant consequences that may include long-term closure of the site, major damage or effect.</li><li>• Loss of life and/or significant injuries that cause disability.</li><li>• Major off-site impacts causing destruction of other assets or life loss.</li></ul>

**Table 23.5** Risk matrix

Likelihood	Consequence		
	Minor	Moderate	Major
Very likely	Medium	Very high	Extreme
Likely	Medium	High	Very high
Unlikely	Low	Medium	High

## 23.3 Existing conditions

### 23.3.1 Bushfire prone area

The entire project site is mapped within a designated bushfire prone area.

Bushfire prone areas are designated by the Minister for Planning under section 192A of the *Building Act 1993* as being prone to bushfire based on a determination of its bushfire hazard level. That is, bushfire prone areas are areas subject to or likely to be subject to bushfires. New buildings within bushfire prone areas must adhere to national bushfire construction standards.

### 23.3.2 Moyne Planning Scheme

The project site is within Moyne Shire and is subject to the provisions of the Moyne Planning Scheme.

#### Clause 13.02-1S Bushfire Planning

The planning scheme includes the Planning Policy Framework, which outlines state-wide and regional strategic planning issues and is common in content across all Victorian planning schemes.

Clause 13.02-1S Bushfire Planning of the Planning Policy Framework is required to be applied to all planning and decision making for land that is:

- within a designated bushfire prone area;
- subject to a Bushfire Management Overlay; or
- proposed to be used or developed in a way that may create a bushfire hazard.

As the project site is within a bushfire prone area, this clause is relevant to fire risk for the project. A bushfire hazard assessment has been undertaken in accordance with the requirements of this clause (refer to Section 23.4.2).

#### Planning schemes

The planning scheme sets out the permit triggers and policy considerations for any planning application for a wind farm and associated infrastructure. Responsible authorities must consider the matters outlined in the planning scheme when administering the use and development of land and their impacts as relevant to the EES. Planning schemes are prepared, approved and implemented under the *Planning and Environment Act 1987*.

#### Clause 44.06 Bushfire Management Overlay

Overlays are contained within the state-wide Planning Policy Framework.

Of relevance to the fire risk assessment is the Bushfire Management Overlay, which applies to bushfire prone areas with very high and extreme bushfire hazards. The purpose of this overlay is:

- to ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire
- to identify areas where the bushfire hazard warrants bushfire protection measures to be implemented
- to ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

A Bushfire Management Overlay applies to a very small area in the south-east area of the project site (Figure 23.2), however infrastructure is not proposed in this area.

### 23.3.3 Bushfire history

Bushfire history in the investigation area is shown in Figure 23.3. The closest bushfires to the project site occurred in 2004 to the south of the proposed on-site terminal station and battery energy storage system, south of Woolsthorpe-Hexham Road. There are no records of large bushfires impacting the project site. The larger fires in the surrounding landscape are typical of a north-westerly influence, followed by a south-westerly wind change.

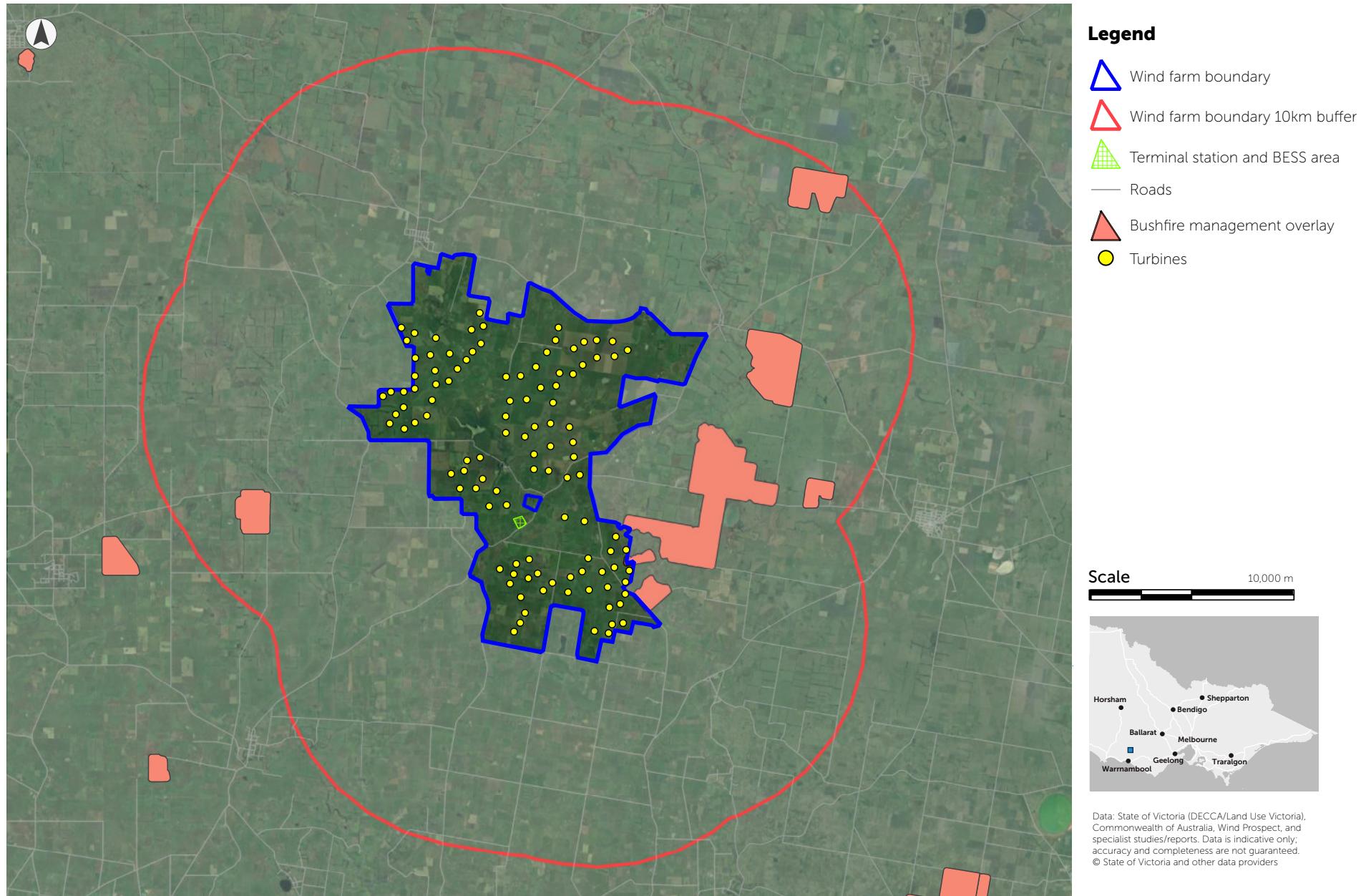
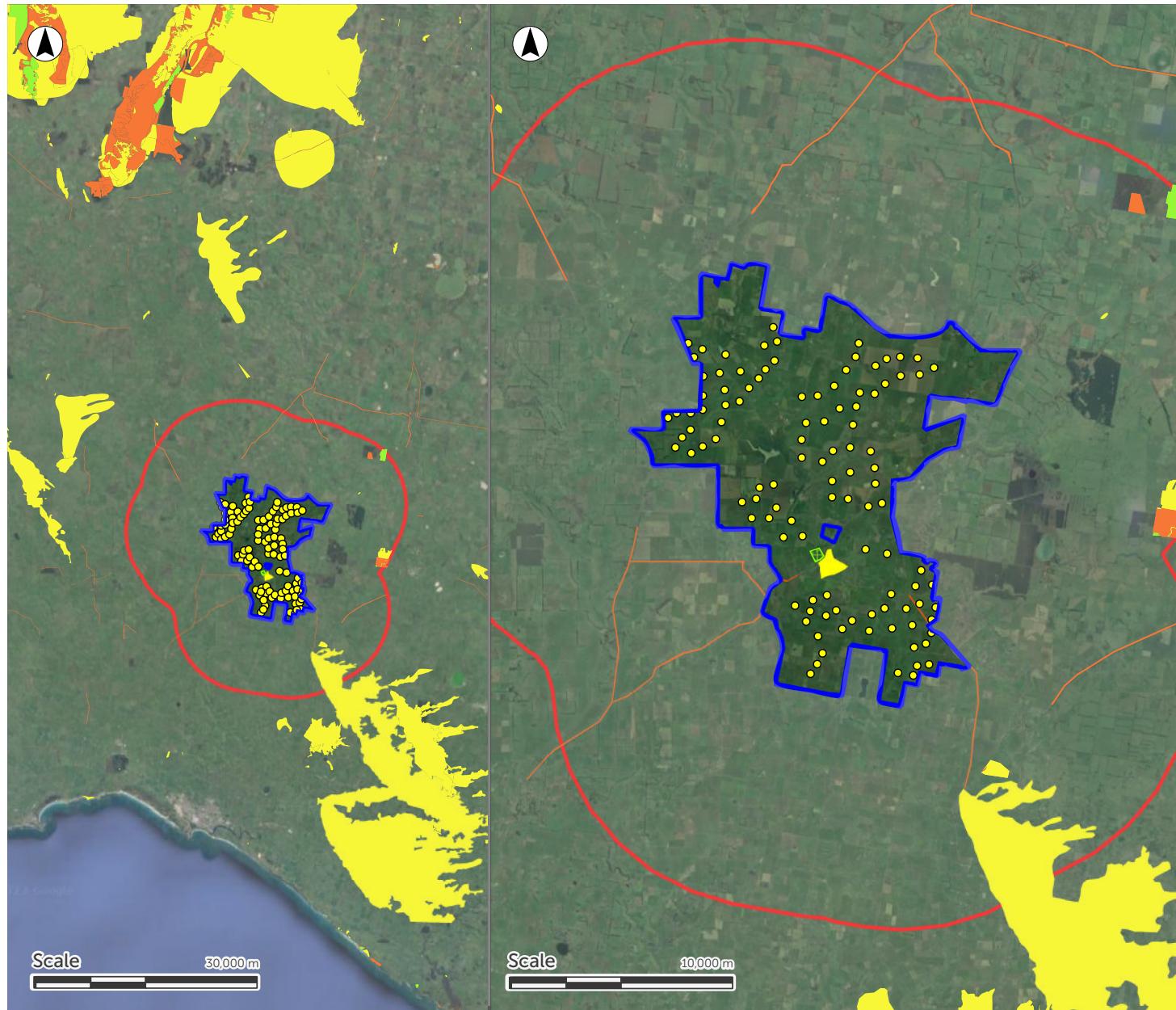


Figure 23.2 Location of the Bushfire Management Overlay in relation to the project site



Data: State of Victoria (DECCA/Land Use Victoria), Commonwealth of Australia, Wind Prospect, and specialist studies/reports. Data is indicative only; accuracy and completeness are not guaranteed. © State of Victoria and other data providers

**Figure 23.3** Bushfire history within the project investigation area and project site

### 23.3.4 Existing fire risk

The project site consists of mostly private land used for agriculture (predominantly sheep and cattle grazing) within a generally flat landscape (Figure 23.4). As a result of past clearing for agriculture, native vegetation within the project site is largely restricted to roadside reserves and along watercourses, with small, isolated areas on private land.

Within the project site there are numerous existing access tracks used for farming operations. In the wider investigation area, several roads are identified as 'Strategic Fire Breaks' in the Moyne Municipal Fire Management Plan including Warrnambool-Caramut Road, Woolsthorpe-Hexham Road and Hexham-Ballangeich Road (Figure 23.3). The existing strategic fire break network provides a network of fuel managed areas that may either slow or stop the spread of bushfires.

The closest plantation to the project site is around two kilometres to the east of the Hopkins River.



**Figure 23.4** Typical farming property within the project site

Under strong wind conditions, a bushfire can travel quickly across the landscape. Grassfires are heavily influenced by the quantity of fuels within the paddocks and the wind strength, as well as landscape features such as roads and dwellings. Bushfire behaviour in south-east Australia is often dominated by strong and gusty north-westerly winds, which are typically followed by a south-westerly wind change in the afternoon or early evening.

Based on an assessment of ***Fire Risk Impact Assessment*** (Appendix P), bushfires at the project site are most likely to be driven by north-west and south-west winds. Bushfires burning under a north-westerly wind are typically associated with elevated fire danger days and would burn through predominantly grassland fuels. Bushfires approaching from the south-west typically occur after a north-westerly wind change. Bushfire spread through embers is likely to be limited due to the lack of tree and shrub vegetation in the landscape.

## 23.4 Impact assessment

### 23.4.1 Impact pathways

There is the potential for the project to cause a fire (on-site) or be impacted by fire originating from another source (off-site). On-site fires may be caused by wind turbine electrical faults or faults relating to above ground electrical infrastructure, such as the transmission line, the terminal station and the battery energy storage system. Fires could also feasibly be caused by spills of dangerous goods.

Other potential fire risks are those associated with the fire-fighting response, such as the runoff of fire water to the surrounding environment and exposure of first responders to hazards.

A fire risk assessment of these potential impact pathways, prior to the implementation of management controls, was undertaken by Fire Risks Consultants and is presented in Table 23.6 below.

**Table 23.6** Assessment of potential fire risk impact pathways – without management controls

Fire risk impact pathway	Project phase	Description	Likelihood	Consequence	Risk rating (without management controls)
Electrical hazards	Operation	Electrical faults (such as from faulty wiring and connections), loss of remote monitoring systems, internal short circuits and overheating can cause fires in wind turbine and battery infrastructure.	Likely	Moderate	High
Fire caused by the project or other cause occurring on or near the project site	Construction and operation	Depending on weather conditions, a fire that starts within a wind turbine nacelle or the project site may spread to adjoining turbines, other infrastructure or adjoining properties (most likely through vegetation connectivity). A bushfire in the surrounding landscape may also threaten project infrastructure.  However, due to the separation distance between infrastructure, existing fire breaks and the predominantly cleared farming landscape, this is highly unlikely to occur.	Unlikely	Minor	Low
Ignition of dangerous goods	Construction and operation	Dangerous goods stored within the battery energy storage system, terminal station and inverters would include lithium ion and refrigerant. These may leak, which could result in them igniting.	Unlikely	Minor	Low

Fire risk impact pathway	Project phase	Description	Likelihood	Consequence	Risk rating (without management controls)
Fire water runoff to surrounding environment	Operation	If a fire occurs within the battery energy storage system, water used to extinguish the fire may be contaminated. If this water is not contained, the runoff may contaminate the surrounding environment.	Unlikely	Minor	Low
Safety hazards for first responders	Construction and operation	Fire safety hazards associated with wind energy facility or battery energy storage system infrastructure may present dangerous conditions for first responders, particularly if they are not familiar with the site and/or infrastructure.	Likely	Moderate	High

#### 23.4.2 Assessment against Clause 13.02-1S Bushfire Planning

The assessment by Fire Risk Consultants identified that there is potential for grassfires to occur in the landscape surrounding the project site, which may travel long distances depending on the weather conditions.

The project has been designed to avoid or minimise fire risk to the proposed wind energy facility and battery energy storage system, as well as the risk of fire spreading from the project site to the surrounding landscape. In achieving the requirements of the CFA Guidelines, the project is considered to meet the objectives of Clause 13.02-1S Bushfire Planning.

A detailed assessment against the objectives of Clause 13.02-1S Bushfire Planning is provided in the **Fire Risk Impact Assessment** (Appendix P).

#### 23.4.3 Design mitigation

The site selected for the project has most of the CFA's indicators of a low-risk location for bushfires outlined in the CFA Guidelines. Specifically, the project site:

- is almost entirely comprised of grazed grassland
- has a generally flat topography, with some undulation
- has good road access with multiple routes available to and from the project site
- would have no infrastructure built within a Bushfire Management Overlay.

For each identified impact pathway, key measures that have been incorporated into the project design to minimise or avoid fire risk (in accordance with the requirements of the CFA Guidelines) are outlined in Table 23.7.

**Table 23.7** Fire risk design control measures

Potential fire risk impact	Design controls
Electrical hazards	<ul style="list-style-type: none"> <li>Installation of smoke detection and fire suppression systems within wind turbine nacelles. The design of this system is to be determined in consultation with the CFA</li> <li>Installation of fire safety systems within the battery energy storage system enclosures.</li> </ul>
Fire caused by the project or other cause occurring on or near the project site	<ul style="list-style-type: none"> <li>Spacing of wind turbines at least 300 metres apart</li> <li>A fire break of at least 10 metres around the base of wind turbines and battery energy storage system</li> <li>Wind turbines would be provided with automatic shut-down, and the ability to be completely disconnected from the power supply in the event of fire</li> <li>Construction of access tracks to each of the wind turbine towers and battery energy storage system, as well as other project infrastructure not adjacent to the existing public road network. The access tracks have been designed to the following specifications: <ul style="list-style-type: none"> <li>minimum of 4 metres in trafficable width</li> <li>4 metre vertical clearance</li> <li>all-weather surface</li> <li>capable of accommodating a 15-tonne vehicle</li> <li>provision of multiple access points, to ensure safe and efficient access to and egress.</li> </ul> </li> <li>Access tracks developed during construction would be retained throughout the life of the project to provide access for maintenance activities and emergency vehicles, if required</li> <li>Provision of water tanks of appropriate sizes, which would be placed in key locations around the project site, the exact details of which would be determined in consultation with the CFA during the detailed design phase.</li> </ul>
Ignition of dangerous goods	<ul style="list-style-type: none"> <li>Battery packs would have their own bunding, as well as sensors and an alert system that would send a message to the operator if a leak were occurring.</li> </ul>
Fire water runoff to surrounding environment	<ul style="list-style-type: none"> <li>The battery energy storage system would be sited on a hardstand area of up to 2 hectares. The battery energy storage system design includes a basin that would collect fire water and bunding would be used to reduce firewater runoff to the surrounding environment. This water would be tested for contaminants to determine the most appropriate disposal method in accordance with the Environment Protection Regulations 2021 and the waste framework (Fire debris and fire wash-waters excluding anything covered under item 79 of Schedule 5 of the Environment Protection Regulations is classified as Reportable Priority Waste).</li> </ul>
Safety hazards for first responders	<ul style="list-style-type: none"> <li>The project would include a site monitoring system with a range of sensors to detect faults. If a fault is detected, the system would send an alert message to the monitoring centre.</li> </ul>

### 23.4.4 Environmental management measures

Where possible, engineering design measures have been included to avoid and minimise fire risk. To further manage potential fire risks, the management measures outlined in Table 23.8 would be implemented during the construction and operation of the project.

**Table 23.8** Fire risk management measures

<b>Fire risk impact pathway</b>	<b>Project Phase</b>	<b>Management measures</b>	<b>Number</b>
Electrical hazards Fire caused by the project or other cause occurring on or near the project site Ignition of dangerous goods Fire water runoff to surrounding environment Safety hazards for first responders	Construction Operation	<p><b>Risk Management Plan, Fire Management Plan and Emergency Management Plan</b></p> <ol style="list-style-type: none"> <li>Prior to the commencement of construction and operation, develop, update and implement a Risk Management Plan, Fire Management Plan and Emergency Management Plan in accordance with the Country Fire Authority (CFA) Design Guidelines and Model Requirements – Renewable Energy Facilities (version current at the time of preparation of the Plans), in consultation with CFA, prior to commissioning.</li> <li>The Fire Management Plan will outline measures for design, defendable space, construction, water supply and access (including the testing of fire waste water), awareness actions, preparedness levels and fire response procedures for the site to address any concerns relating to fire risks including bushfires.</li> </ol>	BF01
	Operation	<p><b>Firefighting</b></p> <ol style="list-style-type: none"> <li>As per the CFA's Design Guidelines and Model Requirements – Renewable Energy Facilities (Country Fire Authority, 2025), the following will apply for the operation of the wind farm to manage potential impacts to firefighting operations: <ol style="list-style-type: none"> <li>fuel management measures during the Fire Danger Period, including maintaining grass levels at or below 100 millimetres in height and maintaining a fire break area of at least 10 metre width around electricity compounds and substations</li> <li>a fire break of at least 10 metres around the base of wind turbines and battery energy storage system, which has been incorporated into the design</li> <li>constructed roads developed during construction of the facility must be maintained post-commissioning and throughout the operational life of the facility to allow access to each turbine for maintenance and emergency purposes</li> <li>a fire protection system to allow adequate response to the risks and hazards at the facility, in consultation with the Country Fire Authority (CFA)</li> <li>inclusion of a static fire water storage tank of at least 45,000 L effective capacity at each site entrance (there are 11), regularly monitored to ensure water level adheres to CFA guidelines wind energy facility emergency management plan, provided within the emergency information book, which includes the maximum (safe) operational wind speed and temperature conditions and operating procedures to limit fire risk.</li> <li>aerial firefighting can be used if it is considered appropriate and available. The pilot will ensure the safety of the aircraft and determine where they can safely operate within and around the wind farm.</li> </ol> </li> </ol>	BF02
	Operation	<p><b>Fire Management Plan - Smoke detection and fire suppression systems</b></p> <ol style="list-style-type: none"> <li>The smoke detection and fire suppression systems will be monitored 24/7 by an on-site monitoring system. If activated, an alert would be sent to the site operator. This will be documented in the Fire Management Plan (BF01).</li> </ol>	BF03

<b>Fire risk impact pathway</b>	<b>Project Phase</b>	<b>Management measures</b>	<b>Number</b>
	Operation	<p><b>Fire Management Plan - Fuel load management</b></p> <p>1. Any vegetation growth on the property will be monitored and managed in accordance with the Fire Management Plan (BF01). During the fire danger period, additional inspections will occur to ensure that all weeds and other vegetation is removed from the fire breaks and other critical areas.</p>	BF04
Ignition of dangerous goods	Construction Operation	<p><b>Stakeholder Engagement and Communications Plan - Dangerous goods storage</b></p> <p>1. In accordance with the Dangerous Goods (Storage and Handling) Regulations 2022, consultation with the Country Fire Authority (CFA) would be required if quantities of dangerous goods within the project site exceed the fire protection amounts listed in Schedule 2 of the regulations to inform fire response. This will be documented in the Stakeholder Engagement and Communications Plan (EMM02).</p> <p>2. Suitable spill containment will be provided around equipment that holds dangerous goods.</p>	BF05

### 23.4.5 Residual impacts

An assessment of the residual fire risk following the implementation of management controls outlined in Section 23.4.4 is presented in Table 23.9.

**Table 23.9** Assessment of potential fire risk impact pathways – with management controls

<b>Fire risk impact pathway</b>	<b>Project phase</b>	<b>Likelihood</b>	<b>Consequence</b>	<b>Risk rating (with management controls)</b>	<b>Justification</b>
Electrical hazards	Operation	Likely	Moderate	Medium	<p>The Emergency Management Plan would include a system to communicate effectively between the monitoring centre and the on-site staff and contractors, and provide contact details for a technical expert in the event or threat of an emergency [EMM BF01].</p> <p>The site monitoring system would allow for remote shut down of wind turbines and the battery energy storage system [EMM BF03].</p>
Fire caused by the project or other cause occurring on or near the project site	Construction and operation	Unlikely	Minor	Low	<p>The Emergency Management Plan and Fire Management Plan would outline the fire mitigation and management controls. The Emergency Management Plan would also include requirements for vacating the project site when the fire danger level is elevated [EMM BF01].</p> <p>Access tracks and fire breaks within the project site would likely assist with containing bushfire spread under lower fire danger conditions, as well as provide increased accessibility within the project site for ground-based firefighting [EMM BF02].</p>
Ignition of dangerous goods	Construction and operation	Unlikely	Minor	Low	<p>The Emergency Management Plan would include details of the hazards associated with dangerous goods and appropriate procedures for responding to emergencies related to dangerous goods [EMM BF01].</p> <p>An assessment of the dangerous goods quantities at the battery energy storage system would be undertaken following the selection of the chosen technology and will be required to comply with the requirements of the Dangerous Goods legislation [EMM BF05].</p>
Fire water runoff to surrounding environment	Operation	Unlikely	Minor	Low	<p>The Emergency Management Plan would include procedures to manage fire water runoff [EMM BF01].</p>

Fire risk impact pathway	Project phase	Likelihood	Consequence	Risk rating (with management controls)	Justification
Safety hazards for first responders	Construction and operation	Likely	Moderate	Medium	<p>The Emergency Information Book would provide detailed contact information for responding firefighters to obtain specialist advice before accessing the site [EMM BF01].</p> <p>The area around the base of each tower would be kept clear of vegetation, which offers a refuge for fire fighters and their vehicles [EMMs BF02 and BF04].</p>

## 23.5 Conclusions

The assessment undertaken by Fire Risk Consultants confirms that, with the implementation of management measures outlined in the CFA Guidelines, the project would not increase the risk of fire to surrounding communities, farming assets and other infrastructure.

The construction of access tracks for the construction and maintenance of the turbines would improve access for ground-based fire-fighting and likely act as a fire break to contain bushfire spread under lower fire danger conditions. Additionally, vegetation management around the base of each wind turbine tower, battery energy storage system and other project infrastructure, and the mitigation measures incorporated into the design, would likely reduce the risk of fire spreading to adjoining infrastructure.

The CFA has been consulted throughout the project development process and consultation will continue following approval of the planning permit during the development of the Fire Management Plan and Emergency Management Plan.