Vegetation Management

2019-20 Bushfires Cost Pass Through

August 2021

essential energy

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1. Vegetation Management

Trees near powerlines are widely considered a safety risk. The dangers include:

- Falling branches or trees bringing down live power lines
- Ignition of bushfires with subsequent impact to property, individuals and the environment.

And to a lesser extent

- Children climbing trees near powerlines
- Electric shock potential from property owners clearing vegetation near powerlines.

Essential Energy invests a significant component of its operational budget on the management of trees and other vegetation to address such risk where possible.

1.1 Vegetation Asset Class Strategy

The Vegetation Asset Class Strategy sets the vision and objectives for vegetation management at Essential Energy, covering all aspects of the vegetation management program and broader activities relating to establishment and maintenance of vegetation clearances (urban areas) and management corridors (rural areas).

A series of strategic directions and improvement actions and their associated performance metrics provide guidance on achieving the objectives and setting out how all stakeholders can contribute to the vision and objectives of the Vegetation Strategy.

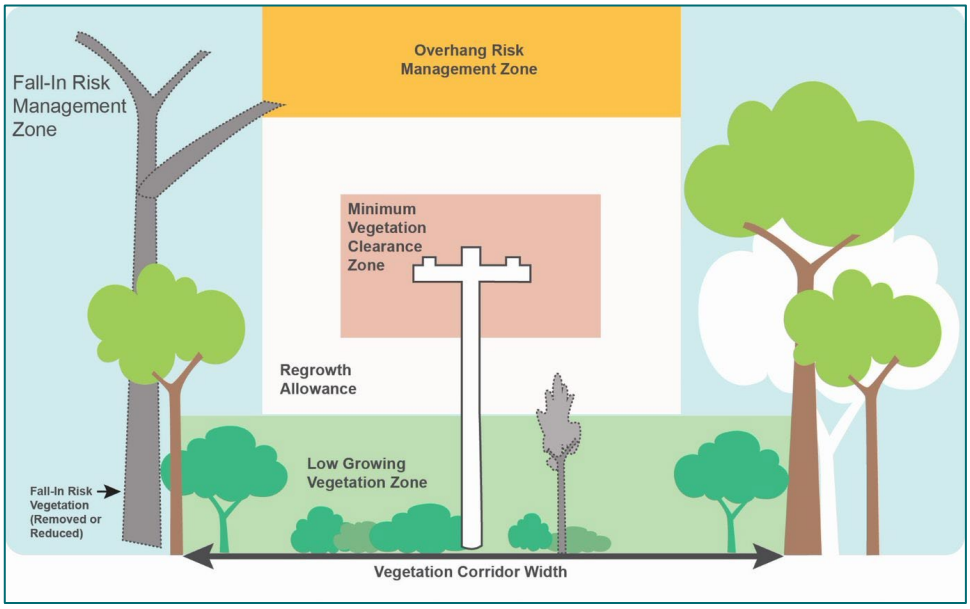
Diligent vegetation management is a critical control for mitigating bushfire related risks and network reliability. As such, the Vegetation Strategy contributes to the objectives of Essential Energy's Corporate Strategy, Bushfire Prevention Strategy and Reliability Strategy.

Essential Energy is seeking to reduce vegetation-related controllable bushfire risk by 20%, with 22% reduction in fall-in fire starts over the next 15 years.

1.2 Vegetation Management Requirements

Essential Energy classifies the space surrounding the overhead electricity network into several zones which guide vegetation management requirements, shown in Figure 1.

Figure 1. Vegetation management rural corridor profile.



1.2.1 Fall-In Vegetation Risk Management

In practice, many trees exist outside the minimum clearance zone at a height that if they were to fall, contact with a powerline could occur. It is not environmentally appropriate, economical, nor practical to remove all such trees as the majority are in good health and likely to be safe.

Overhead networks in all jurisdictions can be affected by seemingly healthy trees unexpectedly failing sometimes due to significant storm exposure. Accurately predicting the likelihood of individual tree failures across a largely healthy population with current industry inspection methods is impossible and therefore an element of risk will always remain. Only trees or branches identified with a high probability of failure (high risk) will be nominated for trimming or removal during the inspection process. Such vegetation is referred to as Fall-In Risk Vegetation.

Fall-In Risk Vegetation means visibly defective Vegetation (Vegetation that is structurally unsound including as a result of the Vegetation being dead or dying, as identified from the perspective of the Network Asset, as far as is reasonably practicable to do so), that is outside the Minimum Vegetation Clearance Zone and which may require Pruning, cutting, height reduction, or Removal to obviate an unreasonable risk of the Vegetation falling, dropping, and contacting Network Assets during the Vegetation Management Cycle.

1.2.2 Low-Growing and Regrowth Vegetation Risk Management

Vegetation growing into the minimum vegetation clearance zone can interfere with the electricity network, causing fire ignition, public safety hazard, and power supply reliability issues.

Saplings and regrowth of tall growing species must be controlled before maturing to a point where more extensive works are required which is resource intensive and can lead to significant environmental impact. In these cases, spraying and / or mulching may be employed to manage self-seeded species or young regrowth.

Low growing species will be retained in situations where there is tolerable risk and significant environmental benefit to be gained.

In some instances, herbicide application may not be appropriate at the time routine vegetation treatment works are undertaken. In such instances, the Essential Energy or its nominated service provider may specify an appropriate follow up period to carry out herbicide control of suckers and regrowth. The follow up period specified will generally not exceed twelve months from the date the initial vegetation treatment was carried out.

2. Impact of 2019-20 Bushfires on Vegetation Management Programs

Costs incurred by Essential Energy in responding to the 2019-20 bushfire are not part of business as usual investment. Ongoing, the bushfire event has caused changes to the types of vegetation found within proximity to the network and has required an increase in the amount of inspection and risk mitigation required.

2.1 Impact on Fall-In Vegetation Risk Management

The 2019-20 bushfires caused significant volumes of tall trees to become dead or dying at a far greater rate than normally experienced. Essential Energy was forced to remove or reduce the height of such trees within proximity to the network to ensure effective mitigation of fall-in risk. Due to the severity and extent of the 2019-20 bushfires, the required expenditure levels on these activities have been unprecedented and were not considered part of normal vegetation management investment.

2.2 Impact on Regrowth Control

Fire has been known to reduce topsoil nitrogen and moisture levels, as organic matter is removed. The remaining charred wood increases phosphorous availability, which can help certain species more than others. Tall-growing plant genus such as Eucalypts and Acacias seek to benefit from this scenario to outcompete the shrub and vine layer that may suffer due to low nitrogen levels post-fire. Due to the scale of the 2019-20 bushfires, the extensiveness of this issue is unprecedented and was unplanned for.

Essential Energy has responded to this increased volume of sapling regrowth of undesirable tall-growing trees with more frequent inspections and heightened investment in herbicide application. It is important to undertake such

regrowth control in a timely and repeated fashion, to prevent the creation of densely vegetated easements which would then require clearing by heavy machinery.

The pictures below show that despite being burnt in the 2019-20 bushfires, the firegrounds show significant vegetation growth.

Below, clockwise from left, the first 2 photos are from Moonem, New Italy Road in the aftermath of the 2019-20 bushfires. The other pictures have been taken recently in the same location, and show the growth seemingly not negatively affected by the bushfires.

2.3 Impact on Expenditure

Any 2019-20 bushfire related task is captured within the Vegetation Information Management System (VIMS) and assigned a specific piece of text added to the notes field which allowed these tasks to be separated out from normal maintenance activities.

To quantify the cost of bushfire related tasks, Essential Energy uses a combination of direct and indirect values. Direct values are recorded within a service approval register, whereby the cost of the bushfire-related task is specifically quoted and approved. Where bushfire-related tasks were a part of a larger package of works, the indirect or pro-rata costs have been inferred through understanding the proportion of tasks within a work package labelled with the unique piece of text.

Analysis of bushfire-related tasks found that Essential Energy required additional expenditure to address the increased risk exposure caused by the 2019-20 bushfires. Additional spend totalled $10.3M in financial year (FY) 2020 and $4.0M in FY21.

The FY22 forecast vegetation management costs of $4.0M for bushfire work is based on the actual expenditure in FY21, and an assumption that FY22 will be similar in scope to FY21 in terms of bushfire related work.

2.4 Reductions to planned costs

The vegetation management work that we completed in the aftermath of the fires, has meant that some of our planned cyclical vegetation work (groundline work to maintain the corridor) is not needed. We had to make some assumptions to work out the value of this avoided work that we would not have to pay for:

- We assessed what spans were contracted to be worked on for groundline maintenance through to June 2024.
- We checked which of these spans were identified in the VIMS as having had bushfire-related vegetation management work completed since the 2019-20 fires - [redacted].
- We applied an avoided cost of [redacted] per span for those spans (based on the average rural span clearance rate in current vegetation contract rates).
- It was assumed that expenditure in 2021-22 would be related to follow-up regrowth control and fall-in risk mitigation in spans previously subject to bushfire-related vegetation management work.

The overall avoided cost of $194k has been deducted from the total amount being claimed in this cost pass through application.

Vegetation Expenditure – 2019-20 bushfires

$M FY21	2019-20	2020-21	2021-22	2022-23	2023-24	2019-24
Operating expenditure	$10.3	$4.0	$4.0	-$0.1	-$0.1	**$18.1**