

**ITEM 3.1: PEAK ALONE COMMUNICATIONS TOWER BUSHFIRE AFFECTED NETWORK REPLACEMENT OPTIONS FOR DECISION**

**Presenters:**

[REDACTED]  
[REDACTED]

**Date Prepared:** 29 March 2021

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**Recommendation**

Recommendation is given that the Network Steering Committee approve option 1 for the re construction of the 11kv overhead network with composite poles at [REDACTED] [REDACTED]

The purpose of this investment is to resolve current issues and costs associated with the temporary generation in place at the Peak Alone communications tower [REDACTED] [REDACTED].

The recommended option allows Essential Energy to build experience in the use of composite fibre pole construction and allows an at scale trial through a National Park.

**Summary**

Peak Alone mountain is located within the Wadbilliga National Park in the southeast of New South Wales. The summit of Peak Alone hosts four towers providing communications infrastructure for the [REDACTED]

[REDACTED] The area surrounding Peak Alone has a propensity for bushfires with historical records indicating significant fires occur every six to eight years<sup>1</sup>. The slopes on Peak Alone leading to the summit, through which the HV feeder traverses, are classed by NPWS as having 'very high bushfire behaviour potential'<sup>2</sup> which impacts the number of times Essential Energy might potentially have to rebuild the feeder should the network be restored to pre-bushfire configuration.

On 31<sup>st</sup> December 2019, bushfires destroyed the four-kilometre 11kV feeder servicing the four communications towers on top of Peak Alone. Following the fires, two rapid-response SAPS were installed to service three of the four communications towers, with the fourth tower being serviced by a diesel generator alone. The existing arrangement was only intended to be temporary [REDACTED] a permanent solution now needs to be implemented that considers the critical nature of the telecommunications services and considers the bushfire risks that exist at this location.

Regardless of the option chosen to service the energy requirements of Peak Alone, Essential Energy is committed to a minimum net present value of [REDACTED]; this is the cost of the cheapest option to restore power to this site using traditional timber poles and overhead conductors.

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<sup>1</sup> Fire history records are available for the area that is now Wadbilliga National Park (north of Cobargo) from 1938 and for Deua National Park from 1980. The records (from State Forest Fire Atlas) before 1980 are anecdotal and general, with more accurate records being kept after 1980. This information shows however, that, for the southern areas of the Escarpment Parks, significant fires occur every six to eight years and in the north every ten years.  
<https://www.environment.nsw.gov.au/resources/planmanagement/final/20110159FarSthCoastFinal.pdf>

<sup>2</sup> Wadbilliga National Park Fire Management Strategy 2009: <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Fire-management-strategies/wadbilliga-national-park-south-east-forest-reserve-fire-management-strategy-080230.pdf>



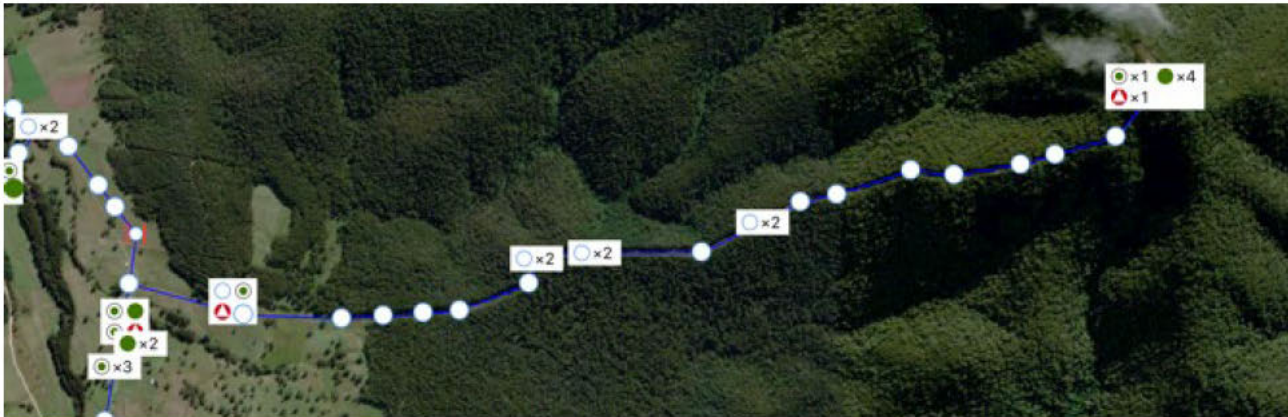


Figure 1 Layout of network supplying Peak Alone in Wadbilliga National Park



Figure 2 Layout of communications towers on Peak Alone summit

## Background

Peak Alone is at an altitude of approximately 906m above sea level within the Wadbilliga National Park. According to the park's Fire Management Strategy 2009, Peak Alone has seen bushfire activity in 1972, 1981, 1988, 1992 and 2002<sup>3</sup>. Since the strategy was published, the area surrounding Peak Alone was also affected by bushfires in the 2013, 2014 and 2018 seasons and, of course, the most recent 2019/2020 season.

The December 2019/January 2020 fires along the South Coast of NSW had an unprecedented impact on Essential Energy's network, [REDACTED]



Figure 3 Peak Alone distribution transformer pole and easement – January 2020

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5.

<sup>3</sup> Wadbilliga National Park Fire Management Strategy 2009: <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Fire-management-strategies/wadbilliga-national-park-south-east-forest-reserve-fire-management-strategy-080230.pdf>





Figure 4 Peak Alone temporary SAPS installations – March 2020

Four options have been investigated to provide a medium to long-term supply solution to Peak Alone,

1. Overhead with composite poles (Recommended Option 1)
2. Microgrid (Option 2)
3. Overhead with timber poles (Option 3)
4. Underground\* (Option 4)

#### Network Rebuild with Composite Poles (Recommended Option 1)

The reconstruction of the power line to Peak Alone will require 4.1km of new single phase 11kV powerline and replacement of the 50kVA substation at the summit. The low voltage network will also require reconstruction with new composite fibre poles and LV ABC mains to new POAs at the connection points.

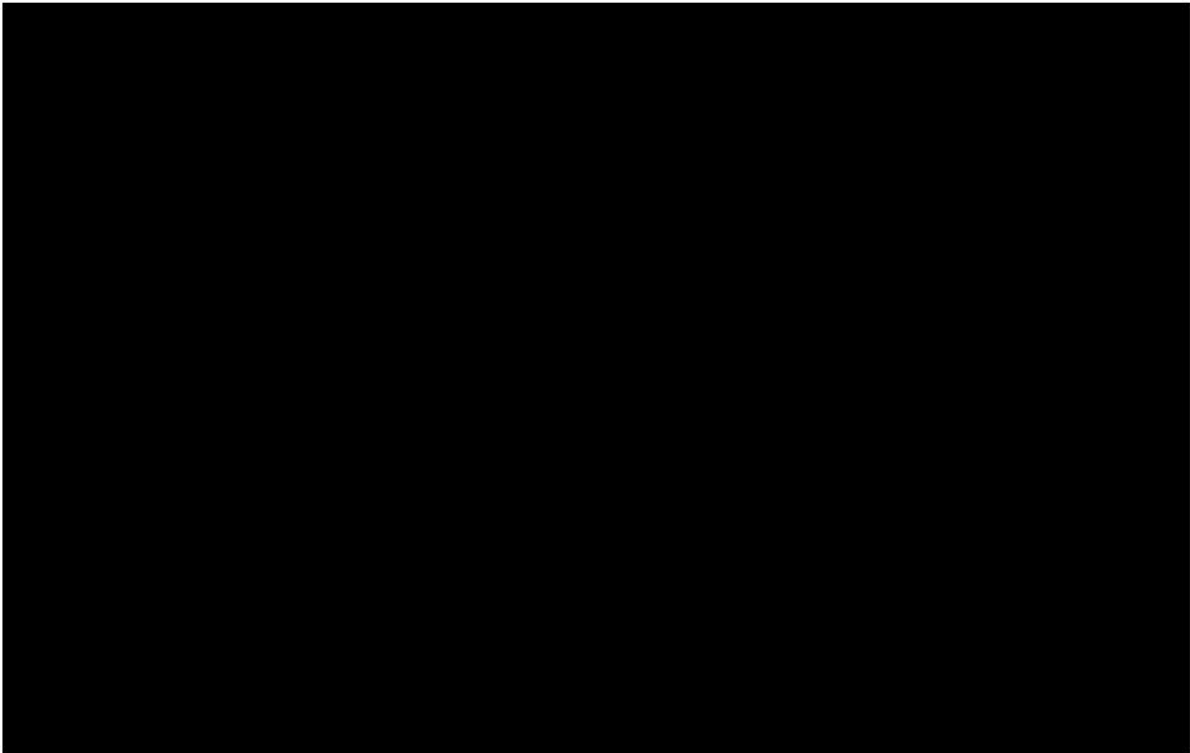
Evidence so far in the use of composite poles in the bushfire zones shows the integrity of the asset remains and as such, even though outages might be experienced, the network would not experience the damage seen on wooden pole structures.

The Peak Alone site represents a unique opportunity to replace a full section of 11kV line with composite poles which allows for skills and capability uplift at the local depot and provides a density of composite pole assets in one location for future studies and evaluation.



**SAPS Option as an alternative to Network Rebuild (Option 2)**

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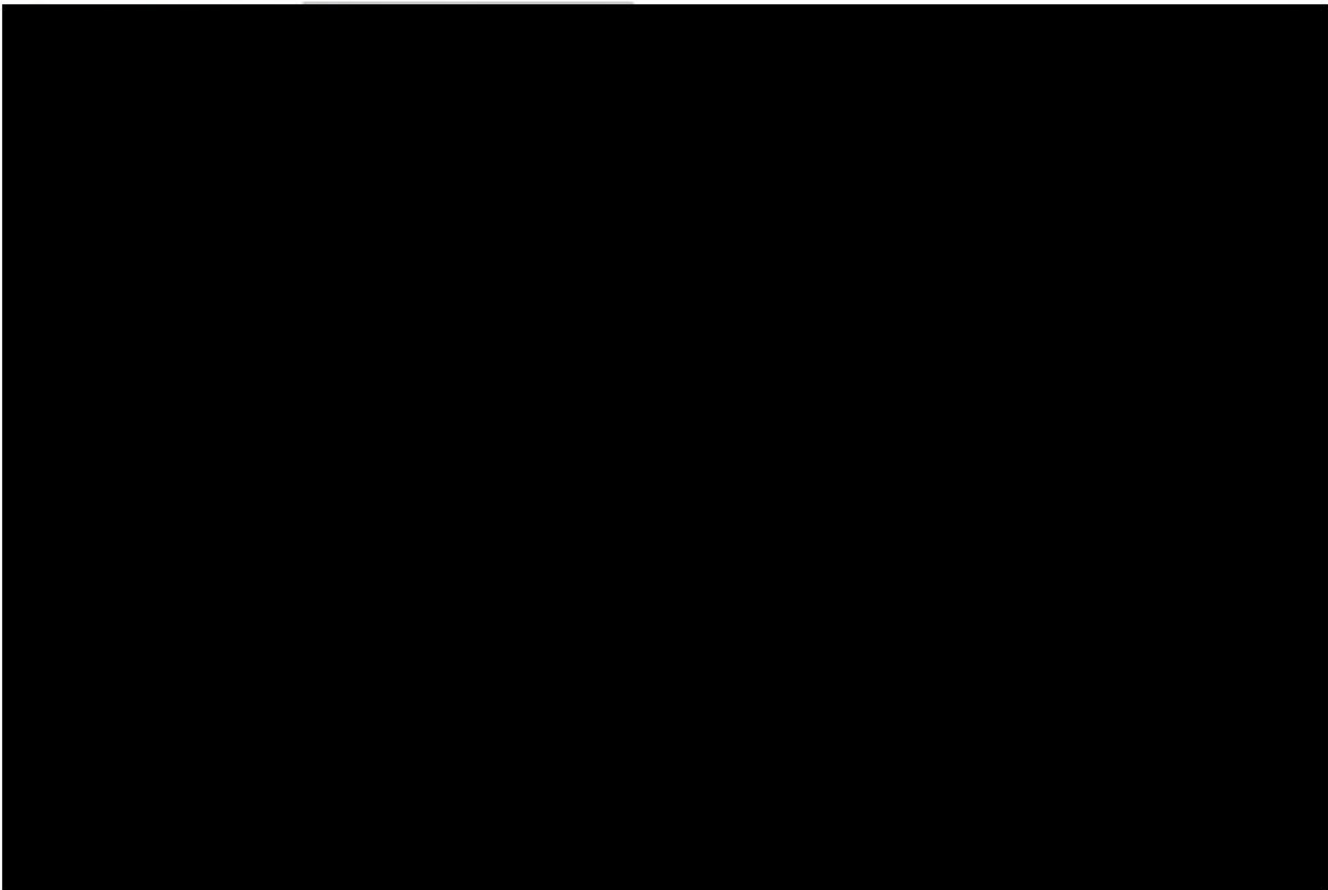
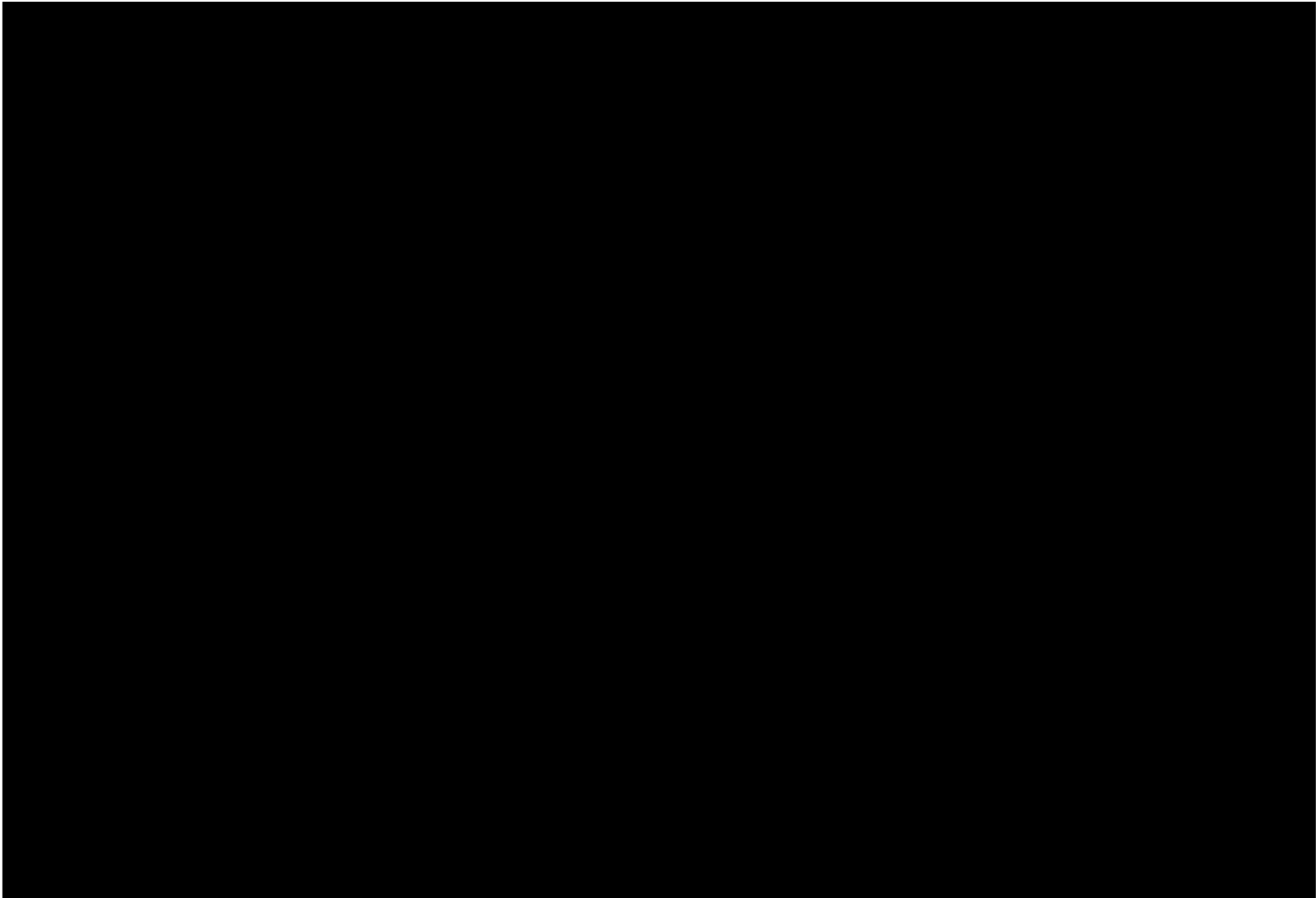
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Next Steps

Technical and financial approval is requested from the NSC to proceed with Option 1 (network rebuild with composite poles).

Prepared by:

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