Powercor
AUSTRALIA

AUGMENTATION

BUSHFIRE MITIGATION

PAL RRP BUS 3.3.05 – PUBLIC
2026–31 REVISED PROPOSAL

Table of contents

1. Overview

Victoria is one of the most bushfire prone areas in the world, with communities across our network having experienced the devastating impacts of bushfires recently in 2024 and 2025, and historically, such as the 2009 Black Saturday bushfires.

A combination of national and state legislation establishes the regulatory framework under which we operate to minimise bushfire risk across our network. This includes the deployment of technologies to minimise the risk of fire starts and to minimise bushfire risk as far as practicable (AFAP).[1]

This business case addendum sets out our response to the AER's draft decision on our bushfire mitigation program and describes the further work we have undertaken since our original proposal.

In line with both our regulatory obligations and strong customer expectations around safety, our 2026–31 bushfire mitigation program focuses on two key program areas:

- maintaining and enhancing rapid earth fault current limiter (REFCL) protection (i.e. our REFCL program)—which comprises both compliance works, and the restoration of reliability performance
- implementing initiatives to minimise bushfire risk AFAP (i.e. our AFAP program)—which comprises four separate initiatives.

The AER's draft decision accepted all of our REFCL compliance program, except proposed works at our Bendigo (BGO) zone substation. The AER also did not accept our REFCL reliability program on the basis that it did not consider we had sufficiently demonstrated the project is prudent or efficient.

Regarding our AFAP program, the AER accepted our proposal to minimise bushfire risk from bare 22kV conductor and HV wooden cross arms, but not our proposals to minimise bushfire risk in the Horsham supply area or to install covered conductor and early fault detection on areas of our SWER network.

Our revised bushfire mitigation proposal responds to the AER's draft decision by reproposing our full REFCL program and the two AFAP programs that the AER did not accept. However, we have removed the installation of covered conductor from our preferred option for our 'minimising bushfire risk from SWER' program and expanded the rollout of EFD devices instead. This has resulted in a reduction in forecast expenditure.

We have also deferred the timing of 'maintaining REFCL compliance' at our BGO zone substation by one year to FY33, deferring half of our proposed expenditure to the following period.

Our revised expenditure forecast for our bushfire mitigation overview is presented in table 1.

[1] A detailed overview of the regulations and legislation under which we operate is available in our regulatory proposal: PAL BUS 3.11 – Bushfire mitigation overview – January 2025 – Public, pp. 4–5.

TABLE 1 BUSHFIRE MITIGATION EXPENDITURE COMPARISON ($M, 2026)

PROGRAM	REGULATORY PROPOSAL	DRAFT DECISION	REVISED PROPOSAL
REFCL programs			
Maintaining REFCL compliance: excl BGO	81.3	81.3	81.4
Maintaining REFCL compliance: BGO	13.2	-	6.7
Maintaining REFCL reliability	12.3	-	12.3
AFAP programs			
Minimise bushfire risk: HSM supply area	18.2	-	18.2
Minimise bushfire risk: bare 22kV conductor	10.5	10.5	10.5
Minimise bushfire risk: SWER lines	13.0	-	7.2
Minimise bushfire risk: HV wood cross-arms	24.0	20.0	20.0
Total	**172.8**	**111.8**	**156.3**

This addendum should be read in conjunction with our original proposal business case and revised models.[2]

[2] PAL BUS 3.11 – Bushfire mitigation forecast overview – Jan2025 – Public; PAL RRP MOD 3.3.11 - REFCL BGO compliance - Dec2025 – Public, PAL RRP MOD 3.3.12 - REFCL reliability - Dec2025 – Public, PAL RRP MOD 3.3.13 - Horsham REFCL - Dec2025 – Public, PAL RRP MOD 3.3.14 - Minimise bushfire risk from SWER - Dec2025 - Public

2. Background

This section summarises our regulatory proposal to mitigate bushfire risks across our network and the AER's draft decision in response to our proposal.

2.1 Our regulatory proposal

In line with both regulatory obligations and strong customer expectations around safety, our 2026–31 bushfire mitigation program focuses on two key areas: maintaining and enhancing REFCL protection and implementing initiatives to minimise bushfire risk AFAP.

2.1.1 REFCL program

Our REFCL program targeted two streams:

- maintain compliance with our REFCL obligations under the under the 2016 Electricity Safety (Bushfire Mitigation) Regulations act
- restore the reliability that customers on REFCL-protected networks experienced prior to the installation of REFCLs.

Maintain REFCL compliance

We achieved initial compliance with the 2016 Electricity Safety (Bushfire Mitigation) Regulations act in 2023 when we completed the mandated rollout of REFCLs at 22 zone substations. However, distributors are required to maintain compliance as network characteristics evolve. We undertake annual capacity testing to ensure that we maintain compliance with all obligations at REFCL sites each year.

Our regulatory proposal identified 14 separate projects as the least-cost path to maintain compliance across our REFCL-protected network.

Maintain REFCL reliability

Our REFCL program also includes works to maintain service levels given the adverse effect that REFCL settings have had on customer supply reliability. This program commenced in the 2021–26 regulatory period with a focus on REFCL-compatible automatic circuit reclosers (ACRs). Our regulatory proposal proposed a second phase to target remote controlled switches and sectionalisers.

Remote-controlled switches and sectionalisers (collectively referred to as remote switches through this document) are used in conjunction with fault detection, isolation and restoration (FDIR) schemes to automatically reconfigure the network to minimise the number of customers off supply. REFCLs isolate faults at the zone substation circuit breaker before our traditional remote switches can operate, leaving more customers off supply than necessary. We proposed to install REFCL compliant earth fault indicators past each of our remote switch sites to enable the upstream reconfiguration of the network prior to REFCL operation.

2.1.2 AFAP program

We maintain regulatory obligations under section 98 of the 1998 Electricity Safety Act 1998 - General duty of major electricity companies to minimise bushfire risk to minimise as far as practicable (AFAP) – a) the hazards and risks to the safety of any person arising from the supply network; and b) the hazards and risks of damage to the property of any person arising from the supply network; and c) the bushfire danger arising from the supply network.

In line with AFAP obligations we proposed four targeted initiatives to collectively target the sections of our network most at risk of fire starts.

- minimise bushfire risk in the Horsham supply area through the installation of a non-mandated REFCL
- minimise bushfire risk from bare 22kV conductors through the installation of covered conductor

  minimise bushfire risk from single wire earth return (SWER) lines through the installation of covered conductor and early fault detection (EFD) devices
- minimise bushfire risk from HV wooden crossarms through the replacement of high-risk assets.

All initiatives have been assessed using risk-based cost-benefit analysis and independently reviewed bushfire modelling.

2.2 AER draft decision

The AER's draft decision accepted our proposal to minimise bushfire risk from bare 22kV conductors, and 13 of our 14 proposed projects to maintain REFCL compliance. The AER also accepted the need to minimise bushfire risk from HV wooden cross arms but proposed an alternative (slightly lower) allowance on the basis that we had overstated our unit rates for HV pole top works.

The decision did not accept our proposals to maintain REFCL reliability, minimise bushfire risk in the Horsham supply area, minimise bushfire risk from SWER lines, and our proposal to maintain REFCL compliance at the Bendigo zone substation (BGO).

The AER considered program-specific findings from EMCa, which we set out in more detail below in section 3.1. Broadly, the AER found that:

- we had failed to demonstrate our programs to maintain REFCL reliability, minimise bushfire risk on SWER and minimise bushfire risk in the Horsham supply area were prudent or efficient
- our REFCL compliance project had not considered opportunities to reduce damping current via load transfers to adjacent zone substations.

3. Our revised proposal

Our revised bushfire mitigation proposal sets out our response to the AER's draft decision. We discuss our response in our detail in section 3.1. In summary, we are reproposing the two REFCL programs and two AFAP programs not accepted by the AER in its draft decision. Proposed capex for our Minimising bushfire risk from SWER lines program has been reduced from $13m to $7.2m to reflect the removal of the installation of covered conductor from our preferred option. In place, we are proposing to expand our fleet of EFD devices to monitor the sections of SWER network initially targeted for covered conductor.

We have also revised the optimal timing of our Maintaining REFCL compliance program at BGO from FY32 to FY33 due to the availability of load transfers to manage risk until FY32. Capex is required one year later - FY31 - than in our regulatory proposal to support a two-year construction period, which has deferred half our proposed capex until the following regulatory period.

Proposed capex for our Maintaining REFCL reliability and Minimising bushfire risk in HSM supply area programs remain consistent with our regulatory proposal.

3.1 Response to the AER's draft decision

We set out our response to the AER's draft decision below.

3.1.1 Maintaining REFCL compliance

Our regulatory proposal proposed $94.6m across 14 projects to maintain compliance with our REFCL obligations, monitored by Energy Safe Victoria under the Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016. The AER's draft decision accepted all projects except for the installation of a third transformer, a third REFCL and load transfers at Bendigo zone substation (BGO) to address forecast exceedance of damping current limits by FY32.

The AER's draft decision cited EMCa's conclusion that there is uncertainty in the need for the solution given the timing of the forecast. The AER concluded that proposed works at adjacent substations would preserve option value for our program at BGO at a time beyond the 2026–31 regulatory period.

We accept that works at our Eaglehawk zone substation and Bendigo terminal station creates headroom for load transfers that may defer optimal timing for the project to FY33. Beyond FY33, load transfers will not be sufficient to mitigate the risk posed by exceedance of damping current limits. Our revised proposal accounts for this and defers our project by one year to begin construction in FY31.

3.1.2 Maintaining REFCL reliability

We are reproposing to install A-Eberle EOR-3D fault indicators past each of the 149 remote-controlled switch sites across our REFCL-protected network. The near-instantaneous operation of REFCLs isolates earth fault current at the zone substation circuit breaker before traditional protection equipment, such remote switches and automatic circuit reclosers (ACRs), can respond, leaving more customers off supply than if the network was reconfigured upstream.

Our proposal is the second phase of our program to restore REFCL-compatibility to upstream protection devices, enabling them to detect and isolate faults and reconfigure the network prior to REFCL operation. The first phase of our program, restoring REFCL-compatibility to ACRs, has been underway since FY24. The AER accepted our proposal for this program, titled 'Mitigating REFCL reliability impacts', in 2021. For ease of reference, we refer to the program as our REFCL-compatible ACR program through this document.

Our proposal is also a commitment under our REFCL policy transition plan, published in our Bushire Mitigation Plan (BMP).[3] The plan sets out our approach to meeting minimum expectations as to how distribution businesses should operate REFCLs, set by Energy Safe Victoria (ESV) in its Operating REFCLs Policy.

In its draft decision, the AER concurred with EMCa's findings that:

- the restoration of fault indication capability and subsequent automation of remote switches does not materially improve SAIFI
- we have not accounted for the reliability benefit of our Mitigating REFCL Reliability Impacts program, underway in the current 2021–26 regulatory period
- we have overestimated the likely incremental benefits from the introduction of fault indicators.

The restoration of FDIR compatibility materially reduces SAIFI and increases MAIFIe

In their review, EMCa stated that they are not convinced that fault indication capability improves SAIFI performance. Rather, EMCa found that fault indicators confirm that a fault has travelled beyond their location, enabling FDIR schemes to operate or assisting field crews to locate faults more efficiently during patrols. However, EMCa do conclude that "if the fault indication capability is used to assist isolate faulted sections, thereby reducing the frequency of outages to some customers, then there may be some benefit to SAIFI". [4]

Our proposal restores the earth fault detection capability necessary for remote switches to rapidly isolate a faulted area and restore supply to healthy sections of a feeder in coordination with a FDIR scheme. The rapid restoration of supply results in customers on healthy sections of a feeder experiencing a momentary outage (MAIFIe) in place of the sustained outage exceeding three minutes (SAIFI) that they would have experienced if the fault had been isolated at the circuit breaker. As a result, our program will reduce SAIFI and increase MAIFIe across the 65 feeders targeted. We consider the impact of an increase in MAIFIe in our revised model.[5]

Our revised proposal considers the impact of REFCL-compatible ACRs

In its draft decision, the AER found that we had not accounted for the benefits arising from the roll-out of RECL-compatible ACRs under our mitigating REFCL reliability impacts program, underway in the current 2021–26 regulatory period.

We have incorporated the benefits of our current program in our revised proposal

We accept that we have not considered the expected improvement in reliability across the REFCL network resulting from the roll out of REFCL-compatible ACRs. We consider these benefits below and in our revised risk model.[6]

We forecast the roll out of REFCL-compatible ACRs would result in a 211 MWh reduction in energy at risk across our REFCL-protected network when we proposed the program in 2021.[7] The rollout of REFCL-compatible ACRs began in FY24, whereas base case energy at risk in our proposal is captured as a five-year average ending in FY23. As a result, our revised proposal considers the full scope of energy at risk reduction from our REFCL-compatible ACR program.

---

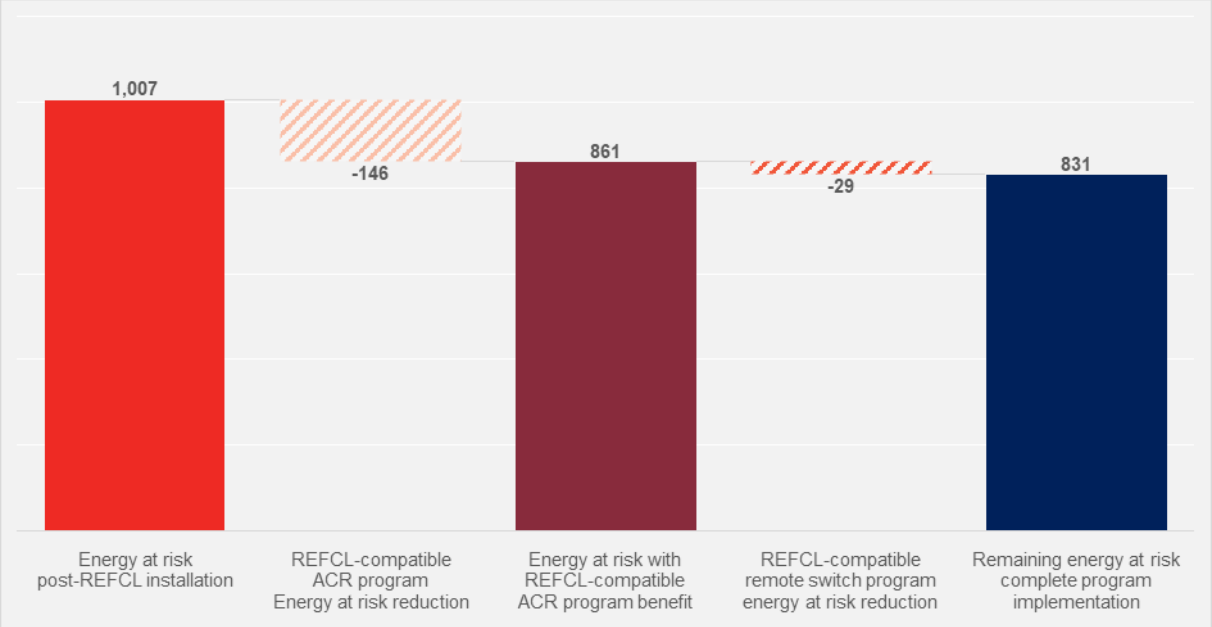
3 Powercor, 2025, Bushfire Mitigation Plan, p.19-20
4 EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 108
5 PAL RRP MOD 3.3.12 - REFCL reliability - Dec2025 - Public
6 PAL RRP MOD 3.3.12 - REFCL reliability - Dec2025 - Public
7 PAL MOD 4.03 – Smart ACR benefits – January 2020 - Public

Our proposal restores earth fault current detection capability to remote-controlled switches across 65 of the 88 feeders targeted in our REFCL-compatible ACR program. To calculate the benefit of our REFCL-compatible ACR program, we:

- allocated energy at risk reduction across the feeders targeted for REFCL-compatible ACRs, weighted by the number of ACRs on a feeder
- excluded energy at risk from the feeders on which remote-controlled switches do not operate
- subtracted remaining energy at risk from the base case of our revised Maintaining REFCL reliability proposal.[8]

Figure 1 captures the multi-period reduction in energy at risk from our REFCL-compatible ACR program and our proposed REFCL-compatible remote switch program.

FIGURE 1 MULTI-PERIOD ANNUAL RELIABILITY BENEFIT (MWH)



The restoration of FDIR scheme compatibility provides material reliability benefits

The AER concurred with EMCa's review that our proposal overstates reliability benefits as we have overestimated perceived incremental benefits from the introduction of fault indicators. EMCa found that we had not adequately considered existing functionality and that the decline in reliability cannot be attributed to a lack of fault indication only. EMCa concluded that it is more likely attributed to a decline in device coordination to which the current period project is funded.[9]

The decline in reliability is attributed to both a decline in coordination and a lack of fault indication

The installation of REFCLs has negated the earth fault indication capability offered by our traditional network devices — ACRs, remote switches and fuses — when the fault occurs downstream of the device. Absent protection devices with earth fault indication capability, the near-instantaneous operation of a REFCL will isolate the fault at the circuit breaker, which takes more customers off supply than necessary.

---

8 PAL RRP MOD 3.3.12 - REFCL reliability - Dec2025 - Public

9 EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 108

The replacement of our traditional ACRs with REFCL compatible devices enables our ACR fleet to detect and isolate faults prior to the operation of a REFCL, in effect, restoring the capability our ACRs maintained prior to REFCL installation. We forecast this would reduce annual energy at risk substantially, as discussed in section 3.2.2.

REFCL-compatible ACRs provide some but not all sectionalisation and automation capability along a feeder. Remote switches installed along the same feeder further sectionalise the network, reducing the number of customers off supply and area required for crews to locate the fault. Remote switches on REFCL-protected networks cannot perform this function without restoration of earth fault indication capability.

Remote switches provide limited FDIR capability on REFCL-protected networks without augmentation

Without earth fault indication capability, remote switches cannot detect an earth fault current, which comprise approximately 70 percent of faults on our network, and coordinate within an FDIR scheme to reconfigure the network in response. As a result, the earth fault is isolated at the circuit breaker or an upstream protection device with fault indication capability, such as a REFCL-compatible ACR, instead of the switch. Our proposal restores the earth fault indication capability that remote switches maintained prior to the installation of REFCL. We forecast our program to result in a further 30 MWh annual reduction in energy at risk.

The remaining 30 percent of faults across our network are overcurrent faults. Remote switches retain their overcurrent fault detection capability on REFCL-protected networks. The existing reliability benefit of isolating feeders in response to detected overcurrent is inherently factored into our base case energy at risk calculations.

Our REFCLs operate year-round in accordance with our Bushfire Mitigation Plan

EMCa consider that the reliability benefit of our proposal is overstated in part due to the decline in reliability attributable to REFCLs being limited to fire season when they are in operation.[10]

Under our Bushfire Mitigation Plan, approved by ESV, we operate our REFCLs year-round in two modes; Fire Risk Mode and Bypass Mode. The loss of earth fault detection capability in our remote switch fleet is present in both modes.

3.1.3 Minimising bushfire risk from Single Wire Earth Return (SWER) lines

The AER's draft decision did not accept our proposal to install covered conductor and EFD devices across the sections of our SWER network exposed to the highest bushfire risk. The AER's draft decision concurred with EMCa's findings that the benefits of the EFD devices to be highly uncertain. EMCa's findings included:

- while recent results supported device capability to identify defects, a vendor report found that EFDs generate a high number of alerts, including spurious results
- a high number of alerts would require an intelligent approach, which EMCa view as requiring further development, to isolate potential defects ahead of site validation to prevent unnecessary truck rolls
- issues confirmed by inspection did not require urgent attention and that there was no evidence that the defect would not be raised using traditional techniques

[10] EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 109

- we have not demonstrated that our preferred option passes the disproportionality test under our AFAP assessment
- we have understated expected costs of the proposal due to a perceived misalignment in our assessment of cost and benefits.

We are proposing to expand the installation of EFD devices in place of targeted covered conductor

Our regulatory proposal sought to reduce the risk of fire starts on SWER lines in our highest bushfire risk areas by installing covered conductor on the sections most at risk and deploying EFD devices on the balance. We have since updated the unit rates for the installation of covered conductor on SWER to reflect recent actual project costs, which has rendered the option uneconomic.

As we set out in section 3.2.3, we will expand the targeted roll out of EFD devices to provide fault detection capability for SWER initially targeted for covered conductor.

The capability of EFD devices to mitigate bushfire risk is well supported by evidence

EMCa refer to a report from the vendor IND.t as evidence that EFD devices generate a high number of spurious alerts and requires an intelligent process that to filter alerts and identify potential defects – a process they infer does not exist without considerable impost. In addition, EMCa found that issues confirmed by inspection did not require urgent attention.

While EMCa do not reference the specific report they reviewed, we assume it references early EFD trials.[11] EFD technology has been in trial across our network since 2018 and are a mature, proven technology adopted in international jurisdictions.[12]

EMCa's conclusion does not reflect our operational reality. We do not receive a high number of spurious alerts. The vendor, IND.t, provides a service that undertakes a triage and filter of detected alerts generated by EFD devices. Upon receiving filtered alerts, we carry out a further triage to determine urgent alerts requiring site validation. IND.t have further developed their service in 2025. Alerts are published on a universal workflow platform that performs AI-supported triaging of detected events. Alert location and assessment is undertaken on the same platform.[13]

In 2024, we received an annualised volume of 44 urgent alerts from the 252 installed EFD devices across our network. All the alerts on which we undertook site validations identified a priority defect that, if left untreated, may have resulted in an asset failure and eventual fire start. Identified urgent defects included broken conductor strands, detached conductors, corroded tie wires and burnt service cables. Opex associated with forecast site validations is accounted for in our revised risk model.

EMCa further remarked that the EFD systems on SWER were installed five years ago and have since been retired.

A number of the 252 trial EFDs were installed at SWER sites that were likely to experience faults but presented low risk. The intention of the trial was to observe early device performance to inform a future operational roll out, as we have now proposed. The trial devices were switched out of service by the vendor at the conclusion of the trial.

---

11 EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 113

12 Aurora Energy, 2025, Asset Management Plan April 2025 – March 2035, available at: aurora-energy-2025-2035-asset-management-plan.pdf; Pacific Gas and Electric Company, 2025, 2025 Wildfire Mitigation Plan Update R2, available at PG&E's 2025 Wildfire Mitigation Plan Update R2.

13 IND.t, 2025, EFD 360 Overview

Annual SaaS licensing costs are captured in capex for the first five years of EFD operation

A five year software as a service (SaaS) license has been offered as part of the initial procurement by the vendor, as we demonstrated in response to Information Request 13 question 29. Accordingly, annual SaaS licensing fees are captured as capex for the first five years of EFD operation between FY28 and FY32. From FY33, SaaS licensing fees are captured as opex.

EFD device batteries are expected to remain serviceable across their 15-year asset life

EMCa found we had understated forecast opex as we did not include a battery replacement cost of $600,000 ($2023) within the 2026–31 regulatory period.[14] Instead, we had included a battery replacement cost halfway through the 15 year life of the asset, in FY33.

We have attached correspondence from the vendor IND.t that advises that EFD device batteries are expected to remain serviceable across the full 15-year life of the EFD.[15] Accordingly, our revised proposal removes opex for battery replacements.

Our preferred option achieves the AFAP threshold under an AFAP assessment

EMCa's conclusion that our proposal does not pass an AFAP assessment relies on supplementary information provided to the AER that captures our proposal failing a disproportionality test if rolled out at a network scale. That is, our proposal fails the disproportionality test under an option where we install EFDs at all possible locations across our network.

Within the same supplementary submission, we provided our AFAP Risk Mitigation Investment Assessment Procedure, which detailed the criteria for a program to pass an AFAP assessment. As EMCa note, under our procedure a project is recommended for implementation when a cost benefit analysis of the program returns a positive value ratio (PVR) greater than one.[16] The PVR is calculated as the ratio of present benefits to present costs, which we assess in our revised risk model, consistent with our approach in our regulatory proposal.

Evidence that our regulatory proposal's preferred option, a targeted rollout of EFD devices and deployment of covered conductor, returned a PVR greater than one was provided in the same supplementary submission, within our Network Bushfire Mitigation Risk Treatment Plan.[17] As we assess in our revised risk model, our preferred option continues to return a PVR greater than one and therefore passes an AFAP assessment.

Our assessment of cost and benefits is consistent with advice provided to the AER

EMCa's finding of a misalignment between annualised costs and the assessment of benefits contradicts advice previous provided to the AER by its own consultant, Frontier Economics, as to how costs and benefits should be evaluated. This advice has been further corroborated in subsequent AER processes by HoustonKemp. Fundamentally, EMCa's analysis was flawed in that it omitted the need to consider terminal values in its discounted cash-flow analysis. Accordingly, our revised proposal maintains our original modelling approach.

3.1.4 Minimising bushfire risk in the Horsham supply area

In its draft decision, the AER did not accept our proposal to install a REFCL at Horsham zone substation (HSM) to minimise bushfire risk in the Horsham supply area. We proposed the installation

---

14 EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 110

15 PAL RRP ATT 3.3.03 – EFD device battery life vendor confirmation – Dec2025 – Public

16 EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 55; Powercor - IR004 - Q4(a) - AFAP risk mitigation investment assessment procedure, pp.4

17 Powercor - IR004 - Q4(a) - network bushfire mitigation risk treatment plan – public, pp.7

of a REFCL at HSM in response to an ESV stated expectation that a distribution business does not meet their general duties by simply adhering to prescribed requirements. Rather, the ESV noted that the deployment of additional REFCLs, or the expansion of our current REFCL protected network, may be a practicable means to mitigate risk, and therefore should be done to meet general duties obligations.

While the AER noted EMCa's consideration targeting the highest bushfire risk areas was a reasonable approach to meet ESV expectations, they found we had not demonstrated that our proposal is prudent or efficient to undertake in the 2026–31 regulatory period.

Our calculation of the risk to human life posed by Horsham zone substation (HSM) feeders is prudent

EMCa found that we had overstated the underlying risk of a fatal incident arising from contact with the 22kV network supplied by Horsham zone substation (HSM). EMCa found that our process had assumed a counterfactual of an annual death across the network but applied a network-wide risk reduction arising from the installation of a REFCL, which impacts a specific section of network.[18]

Our process does not apply a REFCL safety risk reduction to a network-wide risk of fatality. Rather, we pro rata total 22kV network safety risk by the kilometres of 22kV network supplied by HSM. Three calculations below capture our process.

EQUATION 1 LIKELIHOOD OF FATAL OR SERIOUS INCIDENT CALCULATION

$$\frac{\text{number of plant and equipment incidents resulting in a fatality or serious safety risk}}{\text{years measured}} = \textbf{likelihood of fatal or serious incident}$$

EQUATION 2 NETWORK SAFETY RISK COST PER KM CALCULATION

$$\frac{\textbf{likelihood of fatal or serious incident} * \text{value of statistical life} * \text{disproportion factor for loss of life}}{\text{Total km of bare 22kV condutor}} = \textbf{network safety risk cost per km}$$

EQUATION 3 HORSHAM SUPPLY NETWORK SAFETY RISK CALCULATION

$$\textbf{network safety risk cost per km} * \text{km length of HSM feeders} = \textbf{HSM feeder safety risk cost}$$

In our revised proposal, our approach more granularly considers tangible safety risk posed by REFCL-protected 22kV networks. To do this we:

- only consider the total kilometre span of our network covered by bare 22kV conductor in our calculation of annual safety risk per kilometre
- updated our calculation of the likelihood of fatal or serious incident to capture incidents from the last 10 years: September 2015 until September 2025
- only consider fatal or serious incidents that occurred through plant or equipment contact with 22kV conductor.

Our assessment of cost and benefits is consistent with advice provided to the AER

Consistent with our response in section 3.1.3, EMCa's finding of a misalignment between annualised costs and the assessment of benefits contradicts advice previous provided to the AER by its own consultant, Frontier Economics, as to how costs and benefits should be evaluated. This advice has

[18] EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 114

been further corroborated in subsequent AER processes by HoustonKemp. Fundamentally, EMCa's analysis was flawed in that it omitted the need to consider terminal values in its discounted cash-flow analysis. Accordingly, our revised proposal maintains our original modelling approach.

Our proposed costs are consistent with similar projects

EMCa compared the costs of our proposal to cost estimates in our Maintaining REFCL compliance program. They found our cost estimate for station works to be marginally higher than cost estimates for Maintaining REFCL compliance projects, and much higher for the included distribution line works.[19]

The AER concurred with EMCa's findings, concluding that the project should be deferred to the 2031-36 regulatory period given overestimated costs.

Our proposal installs a single REFCL at HSM, a site which does not contain a REFCL. The costs to install a REFCL at a new site are not comparable to a project to install an additional REFCL at an existing site. The installation of a REFCL at a new site requires significant primary and secondary works, whereas the scope of a project to install an additional REFCL requires integration with existing station infrastructure.

There are no comparable projects within our Maintaining REFCL compliance program. All projects under the program involve works at a site with a pre-existing REFCL. For the avoidance of doubt, while Maintaining REFCL compliance projects at Gisborne and Terang refer to 'new REFCLs', these projects involve the installation of a new REFCL at an existing REFCL site.

However, the cost estimate for HSM REFCL is comparable to similar tranche 3 REFCL installations that installed REFCLs at new sites. Evidence of the station work cost build up was submitted in response to Information Request 013, question four.

As EMCa note, our proposed distribution line works at HSM differ from Maintaining REFCL compliance projects. The installation of a REFCL at Horsham requires a scope of works not required for the Maintaining REFCL compliance program, including:

- hardening the distribution network
- replacement of all ACRs with REFCL compatible units
- installation of REFCL-compatible earth fault indication at all remote switch sites.

The scope of distribution line works for the proposed Maintaining REFCL compliance programs do not involve any of these activities. Typically, distribution line works for existing REFCL sites are limited to feeder reconfiguration.

The distribution line works at HSM reflect actual project unit costs for comparable projects under tranche three of our 2021–26 REFCL compliance program, evidence of which was submitted in response to the information request noted above.

3.1.5 Minimising bushfire risk from HV wood crossarms

In their decision the AER applied a lower unit rate for HV pole top structures in alignment with their application of unit rates to HV pole top structure replacements under our fault-based replacement program. The application of a lower unit rate resulted in a reduction in capex from $23.9m to $20m ($2026). We accept this decision.

[19] EMCa, 2025, Powercor Review of Aspects of Proposed Expenditure on Augex, Repex and Vegetation Management, p. 115

3.2 Summary of revised proposal

We are accepting the AER's draft decision for the remainder of our maintaining REFCL compliance program, our minimising bushfire risk from HV wood crossarms and our minimising bushfire risk from bare 22kV conductor program. We are reproposing the two REFCL programs and two programs to minimise bushfire risk AFAP not accepted by the AER in its draft decision:

REFCL programs

- maintaining REFCL compliance at BGO
- maintaining REFCL reliability via the installation of REFCL compliant earth indicators past each of the 149 existing remote-controlled switch and sectionaliser sites.

AFAP programs

- minimising bushfire risk in the Horsham supply area through the installation of a non-mandated REFCL
- minimising bushfire risk from SWER lines through the installation of EFD devices.

Our proposed capex forecast is at table 2.

TABLE 2 REVISED PROPOSAL CAPEX ($M, 2026)

PROJECT	FY27	FY28	FY29	FY30	FY31	TOTAL
Maintaining REFCL compliance: BGO	-	-	-	-	6.7	6.7
Maintaining REFCL reliability	-	4.1	4.1	4.1	-	12.3
Minimising bushfire risk: SWER lines	3.6	3.6	-	-	-	7.2
Minimising bushfire risk: HSM supply area	-	-	-	9.1	9.1	18.2
Subtotal re-proposed projects	**3.6**	**7.7**	**4.1**	**13.2**	**15.8**	**44.4**
AER draft decision allowance	28.1	35.1	13.2	17.2	8.1	111.9
Total revised proposal	**31.7**	**42.8**	**17.3**	**30.4**	**23.9**	**156.3**

3.2.1 Revised proposal to maintain REFCL compliance at BGO

We are reproposing our project to install a third REFCL and third transformer at BGO to maintain compliance with our REFCL obligations. Works at Eaglehawk zone substation and Bendigo terminal station have supported a marginal increase in the availability of load transfers to adjacent zone substations. This enables a deferral in the optimal timing for the project to FY33.

Beyond FY33, damping current at BGO will exceed the capacity of adjacent zone substations to absorb via load transfers, leaving us non-compliant with our REFCL obligations. Correspondingly, proposed capex has been deferred one year to FY31, which has deferred half of our proposed capex to the following regulatory period.

Table 3 captures the net present value of our proposal.

TABLE 3 NET PRESENT VALUE: MAINTAIN COMPLIANCE AT BGO ($M, 2026)

PROJECT	PV COSTS	PV BENEFITS	NPV
Maintaining REFCL compliance: BGO	-6.2	23.3	17.0

Table 4 sets out our revised expenditure forecast.

TABLE 4 TOTAL EXPENDITURE: MAINTAIN COMPLIANCE AT BGO ($M, 2026)

FORECAST EXPENDITURE	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	-	-	-	-	6.7	6.7

3.2.2 Revised proposal to maintain REFCL reliability

Our REFCL-compatible switch program restores the earth fault detection capability necessary for remote-controlled switches to rapidly isolate a faulted area and restore supply to healthy sections of a feeder in coordination with a FDIR scheme. On REFCL-protected networks, the FDIR schemes do not currently function as intended due to the near instantaneous operation of the REFCL which isolates supply at the zone substation circuit breaker leaving more customers off supply than necessary.

In our revised proposal, we are again proposing to install A-Eberle EOR-3D fault indicators past each of the 149 remote switch sites to restore this capability.

In reproposing our program, we have considered the AER's draft decision that:

- the restoration of fault indication capability and subsequent automation of remote switches does not materially improve SAIFI
- we have not accounted for the reliability benefit of our Mitigating REFCL Reliability Impacts program, underway in the current 2021–26 regulatory period
- we have overestimated the likely incremental benefits from the introduction of fault indicators.

The installation of fault indicators past remote switches restores the capability of our switch fleet to participate in FDIR-schemes across our REFCL-protected network, enabling them to reconfigure the network upstream prior to the operation of a REFCL at the zone substation. The rapid restoration of supply on healthy sections of a feeder results in a momentary outage (MAIFIe) in place of a sustained outage exceeding three minutes (SAIFI). As a result, our program materially reduces SAIFI while increasing MAIFIe. We consider the impact of an increase in MAIFIe in our revised risk model.[20]

Our revised proposal considers the reliability impact of our Mitigating REFCL reliability impacts program, under which we began replacing the traditional ACR fleet with REFCL-compatible ACRs in FY24. Our revised risk model considers this impact. There is no material change to the preferred option. Table 5 captures the net present value of our proposal.

[20] PAL MOD 4.04 – Smart ACR benefits – January 2020 - Public

TABLE 5 NET PRESENT VALUE: MAINTAIN REFCL RELIABILITY ($M, 2026)

PROJECT	PV COSTS	PV BENEFITS	NPV
Maintain REFCL reliability	-8.2	17.9	9.7

Table 6 sets out our revised expenditure forecast.

TABLE 6 TOTAL EXPENDITURE: MAINTAIN REFCL RELIABILITY ($M, 2026)

FORECAST EXPENDITURE	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	-	-	4.1	4.1	4.1	12.3

3.2.3 Revised proposal to minimise bushfire risk from SWER lines

Our regulatory proposal sought to reduce the risk of fire starts from SWER lines in our highest bushfire risk areas by installing covered conductor on the 75 km of SWER network most at risk and deploying early fault detection devices on another 2,107 kilometres of SWER in HBRAs. The AER did not accept our proposal, finding that:

- the benefits of EFD devices are highly uncertain
- we had not demonstrated that our proposal passes an AFAP assessment.

We have since updated the unit rates for the installation of covered conductor on SWER to reflect recent actual project costs, which has rendered the option uneconomic. In place of covered conductor, we are proposing to expand the roll out of our EFD devices to provide fault detection capability to the 75 km of SWER intended for the installation of covered conductor.

EFDs are a mature technology, widely deployed across jurisdictions prone to bushfires, that are effective mitigators of bushfire risk. EFDs do generate a high number of alerts, but these are filtered by the vendor prior to provision to our business. We further triage of the alerts we do receive to identify high urgency alerts requiring site validation. This control has minimised both total site validations and unnecessary validations. For example, all the 44 annualised site validations we attended in 2024 led to the identification of a priority defect. Less urgent alerts have been fully integrated into asset inspection cycles and have been crucial in identifying early signs of faults before they materialise.

IND.t have further developed their service in 2025. IND.t's new cloud-based universal operational workflow platform performs AI-supported triaging of detected alerts enabling utilities to locate, assess and schedule repairs.

Under our revised preferred option, we will expand the number of EFDs in operation across our network by FY29 from 602 to 627. Our proposal has passed an updated AFAP assessment, which we capture in our attached revised risk model.[21] Table 7 captures the net present value of our proposal.

[21] PAL RRP MOD 3.3.14 - Minimise bushfire risk from SWER - Dec2025 - Public

TABLE 7 NET PRESENT VALUE: MINIMISE BUSHFIRE RISK ON SWER ($M, 2026)

PROJECT	PV COSTS	PV BENEFITS	NPV
Minimise bushfire risk: SWER lines	-10.9	12.0	1.0

Table 8 captures forecast total expenditure.

TABLE 8 TOTAL EXPENDITURE: MINIMISE BUSHFIRE RISK ON SWER ($M, 2026)

FORECAST EXPENDITURE	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	3.6	3.6	-	-	-	7.2

3.2.4 Revised proposal to minimise bushfire risk in the Horsham supply area

We are reproposing the installation of a non-mandated REFCL at Horsham zone substation (HSM) to mitigate bushfire risk in line with ESV's expectations. Our revised proposal addresses concerns raised in the draft decision and in EMCa's review that:

- we had overstated the safety risk reduction benefit of installing a new REFCL at HSM
- our cost estimates were materially higher than perceived comparable projects
- there is a misalignment between analysis periods for the cost and benefits of our proposal.

Our revised proposal reaffirmed that a pro-rata approach to allocating total network safety risk by the length of total network supplied by HSM is the most prudent approach to assessing safety risk. Our revised proposal refines our pro-rata approach to consider only safety incidents on bare 22kV conductor over the 10 years to September 2025. Previously, we had considered safety incidents across our entire network between 2013 and 2022.

We also clarify that there are no comparable projects within our Maintaining REFCL compliance proposal. The installation of a REFCL at a new site requires substantial station and distribution works not required for the installation of an additional REFCL at an existing site, as is proposed for Maintaining REFCL compliance projects. Our proposed costs reflect actual costs from comparable projects within tranche three of our 2021–26 REFCL compliance program.

Table 9 captures the net present value of our proposal.

TABLE 9 NET PRESENT VALUE: MINIMISE BUSHFIRE RISK AT HORSHAM ($M, 2026)

PROJECT	PV COSTS	PV BENEFITS	NPV
Minimise bushfire risk: HSM supply area	-11.6	16.6	5.0

Table 10 captures our revised expenditure.

TABLE 10 TOTAL EXPENDITURE: MINIMISE BUSHFIRE RISK AT HORSHAM ($M, 2026)

FORECAST EXPENDITURE	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	-	-	-	9.1	9.1	18.2

For further information visit:

Powercor.com.au

CitiPower and Powercor Australia

CitiPower and Powercor Australia

CitiPower and Powercor Australia