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Bushfire technology helping communities here and abroad

As electricity distributor Powercor commences the final stage of a 7-year program to rollout new technology to reduce fires starting from powerlines, the successful performance of the program is attracting attention from across the world.

In a world-first, Powercor has pioneered the development and use of Rapid Earth Fault Current Limiters (REFCL) as a tool for bushfire mitigation. Their introduction was mandated by changes to regulations arising from the Victorian Bushfires Royal Commission in 2010.

Powercor REFCL Program Delivery Manager, Andrew Bailey, said with the first two tranches of the rollout now complete and evidence of the effectiveness of REFCLs in detecting faults, distribution networks from the United States have leveraged the ground-breaking work that Powercor have undertaken.

Powercor is a member of the International Wildfire Risk Mitigation Consortium which supports information sharing among electricity providers.

“During devastating bushfires in California, we saw electricity networks act to minimise the risk of fires starting from powerlines by cutting power to whole regions,” Mr Bailey said.

“Our engineers have shared knowledge with representatives from Pacific Gas and Electricity in California where they are now piloting the installation of REFCLs.

“The learnings we have gained over the past five years may help give companies like PG&E an alternative to pre-emptively switching-off large parts of their networks ahead of times of high fire danger.”

By the mandated 30 April 2021 deadline, Powercor had completed Tranche 1 and 2 of the REFCL rollout and had also completed the first location under Tranche 3. This meant that by the end of the 2021 summer, there were REFCLs in operation at sixteen zone substations protecting 220,000 customers serviced by 14,000km of powerlines.

When completed in 2023, REFCL technology will be protecting about 300,000 homes and businesses serviced by 20,000km of powerlines across the state’s highest bushfire-risk areas.

The REFCL devices are installed on three-phase 22kV powerlines – the most common type in Victoria – and act as a large safety switch, reducing voltage levels within milliseconds to mitigate the risk of fire if a tree strikes powerlines or lines hit the ground.

Mr Bailey said their performance over the 2021 summer illustrated how REFCLs are helping to keep communities safer.

REFCLs across Powercor’s network activated over 650 times during the last fire season identifying faults that can potentially lead to fire starts.

In more than 86% of these REFCL activations – approximately 6 out of every 7 operations - power remained on to homes and businesses as the device operated briefly until the fault cleared, highlighting both the reliability and safety benefits of this technology.

The third stage of the rollout includes the installation of these devices at Koroit (already completed), Hamilton, Merbein, Stawell, and at three zone substations in the Geelong and Surf Coast region.

For more information about REFCLs visit <https://www.powercor.com.au/safety/bushfire-mitigation-program/rapid-earth-fault-current-limiter/>

For more information call Powercor’s media line on (03) 9683 4342



Background – Powercor

Powercor moves electricity to and from more than 843,000 homes and businesses across the western suburbs of Melbourne and through central and western Victoria to the South Australian and New South Wales borders.

Our network is made up of almost 90,000 kilometres of wires and more than 588,000 poles and associated infrastructure, and supports 11,200 medium, commercial and industrial businesses and 106,500 small businesses.

Powercor is playing a critical role in supporting Victoria's clean energy transition. More than 1765MW of solar, wind and other renewable generation is connected to our network, which is home to four of Victoria's Renewable Energy Zones, while 21 per cent of Powercor's residential customers are benefitting from rooftop solar.

We are at the forefront of finding innovative ways to support Victoria's energy transition through projects and trials investigating community batteries, smart charging for electric vehicles, and microgrids and other community energy projects.

Our teams operate from 13 depots, our Bendigo-based customer contact centre and our CBD headquarters, to deliver reliable, safe and affordable electricity by operating, managing and maintaining all network assets and metering services. This means managing a network that is reliable and safe, particularly in relation to bushfire risks.

For more information call Powercor's media line on (03) 9683 4342