# Submission: REFCL: The Ambulance at the bottom of the Cliff

Ian Flatley

Director

Groundline Engineering

PO Box 1343

Bendigo

VICTORIA 3550

This submission provides structured reasons for the AER to place a greater level of importance on alternative technologies in order to meet the required output of the proposed capital expenditure.

Our submission asserts that at best, the REFCL is the equivalent of placing an advanced protection system into an aged and failing power supply network. ie like installing an RCD (Residual Current Device) into an existing house where the wiring is compromised and in need of replacement.

It is “the ambulance at the bottom of the cliff” as the poem at the bottom of this submission alludes to. In fact the current REFCL program is not so much an ambulance at the bottom of the cliff, it is the most expansive and sophisticated ambulance service equipped with the latest technology ready to act, but only for certain limited cases and types of problems. The REFCL program, totally ignores other existing methodologies that could act “as the fence at the top of the cliff” which are more cost effective, safer, and do not introduce additional hazards requiring further money, time and effort to overcome. Effectively eliminating the need for downstream protection and care.

The basic functional requirement of a REFCL (or GFN unit as the rest of the world knows the technology) is to mitigate harmful energy from either initiating a bushfire, or for public safety requirements. It is important to understand that his functional requirement is only initiated for three phase assets and when power line assets, or a sub component have failed or when flora, fauna or other foreign objects breach

The REFCL in its current form is only suitable for three phase systems that make up only a quarter of the rural Victorian power distribution system, whilst ignoring the wider single phase and SWER lines. REFCL only protects single phase faults on those three phase networks and claims of “reduce by 10 times the likelihood of a bushfire starting from a high-voltage powerline” are misleading.

The legislative instrument mandating the installation of REFCL’s into the Victorian distribution system is flawed, relying on outdated, onerous and misleading information. Alternative technology has moved faster than the REFCL development, and it is important to consider all current technologies offering better cost and safety effectiveness.

Following the devastating Black Saturday bushfires, the subsequent Royal Commission made a number of Recommendations, including Recommendation 27 which stated;

*Progressive replacement of all single-wire earth return (SWER) power lines in Victoria with aerial bundled cable, underground cabling or other technology that delivers greatly reduced bushfire risk. The replacement program should be completed in the areas of highest bushfire risk within 10 years and should continue in areas of lower bushfire risk as the lines reach the end of their engineering lives.*

*Progressive replacement of all 22-kilovolt (kV) distribution feeders with aerial bundled cable, underground cabling or other technology that delivers greatly reduced bushfire risk as the feeders reach the end of their engineering lives. Priority should be given to distribution feeders in the areas of highest bushfire risk.*

This recommendation was based on solid work by the royal commission, and this is not in dispute. What is contested here is the following efforts by various parties to attempt to comply with this recommendation by overstating the “other technology that delivers greatly reduced bushfire risk”. REFCL is sold as the single panacea to the issue of a failing power system, increased risk of bushfire starts and a lack of progress over the ten years since power lines were primarily responsible for the death of over 170 people in a single day.

Our submission contains information that has been largely withheld, such as dealing with aging infrastructure and the ever present threat of bushfire ignition through the use of open wire covered conductor technology. Such technology has been installed in recent years in South East Melbourne, has been operational for over a year with zero issues and if anything, improved reliability and line security outcomes.

The State Government of Victoria contributed to the research and development of this technology in Victoria, and the technology met or exceeded the required performance standard requirements. Current cost estimates put the tested covered conductor at a fraction of undergrounding or the REFCL regulatory impact statements content, upon what this REFCL application is built upon.

The REFCL program has not delivered tranche 1 in full as of the time of this submission. Costs for tranche 1 and 2 are currently sitting at $367M for installation at 29 stations, which is approx. double what was estimated in the original regulatory impact statement (based on 45 zone substations for an estimated total cost of $262.8M 2015 figures – ACIL Allen Consulting Regulatory Impact Statement)

Another Black Saturday, weather driven fire storm will occur, and despite the best efforts of many well intentioned people, committees and regulators, people will die, property will be destroyed and the environment will suffer. This will occur in areas so called protected due to voltage rises on aged infrastructure.

The Rules

National Electricity Rules require the AER in considering the application for a contingent project that;

1. In making an amendment of distribution determination for a contingent project, the National Electricity Rules require that “the AER must have regard to;

6.6A.2 (g)(4) the expenditure that would be incurred in respect of a contingent project by an efficient and prudent Distribution Network Service Provider in the circumstances of the Distribution Network Service Provider”;

6.6A.2 (g)(7) the relative prices of operating and capital inputs in relation to the contingent project.

1. For the acceptance of a contingent project within a distribution determination the National Electricity Rules require that “the AER must determine that a proposed contingent project is a contingent project if the AER is satisfied that:

6.6A.1 (b)(1) the proposed contingent project is reasonably required to be undertaken in order to achieve any of the capital expenditure objectives;

6.6A.1 (b)(4) the trigger events in relation to the proposed contingent project which are proposed by the Distribution Network Service Provider in its regulatory proposal are appropriate.

The AER is able to review the original determination if it appears to have been misled.

6.13 Revocation and substitution of distribution determination for wrong information or error

(a) The AER may (but is not required to) revoke a distribution determination during a regulatory control period if it appears to the AER that the distribution determination is affected by a material error or deficiency of one or more of the following kinds:

(1) a clerical mistake or an accidental slip or omission;

(2) a miscalculation or mis description;

(3) a defect in form; or

(4) a deficiency resulting from the provision of false or materially misleading information to the AER

This submission primarily addresses the deficient and materially misleading information which has led to the contingent project being approved in the first place when considering the NER requirement which will have required at the time of determination that;

6.6A.1 (b)(1) the proposed contingent project “is reasonably required to be undertaken in order to achieve any of the capital expenditure objectives”

For the purposes of clause 6.13(a) of the NER rules, we submit that the contingent REFCL project as approved, failed consideration of the alternative technology that was withheld at the time of the original determination. Therefore the contingent REFCL project as approved (tranche 1) and this submission (tranche 2) comes within the scope of “a deficiency resulting from the provision of false or materially misleading information to the AER”.

We request that the AER rejects this Tranche 2 project as submitted and require the Victorian State Government and other stakeholders to re-visit the economic and political drivers that resulted in this REFCL application, Bushfire Mitigation Regulations 2013 as amended 2016, and the Electricity Safety Amendment (Bushfire Mitigation Civil Penalties Scheme) Act 2017.

We submit that;

1. the installation of REFCL devices and associated equipment imposes unnecessary and significant costs on Victorian electricity consumers being neither a prudent nor efficient method of mitigating bushfire risk from power lines on its own.
2. the installation of REFCL’s into the current infrastructure, introduces additional fire start risks into a system that have not been adequately assessed.
3. Cost effective alternatives such as the use of;
	1. Covered Conductor technology
	2. Prudent and cost effective replacement of aging infrastructure
	3. Improved and more effective inspection techniques
	4. Improved vegetation management
	5. Stand Alone Power Supply

that will meet the intended capital expenditure outcomes of the bushfire royal commission and community expectations that electricity supply is delivered safely and reliably. These alternate approaches, despite having been shown to be materially more effective than REFCL in mitigating bushfires, have been largely ignored and misled the AER in accepting the original REFCL contingent project.

These three points are discussed in further detail below;

(This next section is confidential as it contains additional proprietary and sensitive information outside of the wider public domain)

### The Ambulance Down in the Valley **Joseph Malins (1895)**

Written some One Hundred and Twenty Five Years ago, the poem is equally relevant to the point of mitigating the consequence of an event (in REFCL’s case – a failed power line asset) when the solution would be to seek to eliminate the problem in the first place (ie covered conductor or other alternative technologies such as that discussed in this submission).

 ‘Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
So the people said something would have to be done,
But their projects did not at all tally;
Some said, "Put a fence ’round the edge of the cliff,"
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart became full of pity
For those who slipped over the dangerous cliff;
And the dwellers in highway and alley
Gave pounds and gave pence, not to put up a fence,
But an ambulance down in the valley.

"For the cliff is all right, if you’re careful," they said,
"And, if folks even slip and are dropping,
It isn’t the slipping that hurts them so much
As the shock down below when they’re stopping."
So day after day, as these mishaps occurred,
Quick forth would those rescuers sally
To pick up the victims who fell off the cliff,
With their ambulance down in the valley.

Then an old sage remarked: "It’s a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they’d much better aim at prevention.
Let us stop at its source all this mischief," cried he,
"Come, neighbors and friends, let us rally;
If the cliff we will fence, we might almost dispense
With the ambulance down in the valley."

"Oh he’s a fanatic," the others rejoined,
"Dispense with the ambulance? Never!
He’d dispense with all charities, too, if he could;
No! No! We’ll support them forever.
Aren’t we picking up folks just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence,
While the ambulance works in the valley?"

But the sensible few, who are practical too,
Will not bear with such nonsense much longer;
They believe that prevention is better than cure,
And their party will soon be the stronger.
Encourage them then, with your purse, voice, and pen,
And while other philanthropists dally,
They will scorn all pretense, and put up a stout fence
On the cliff that hangs over the valley.

Better guide well the young than reclaim them when old,
For the voice of true wisdom is calling.
"To rescue the fallen is good, but ’tis best
To prevent other people from falling."
Better close up the source of temptation and crime
Than deliver from dungeon or galley;
Better put a strong fence ’round the top of the cliff
Than an ambulance down in the valley.