

# PBSC Update

## Powercor REFCL Program

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December 2018  
Steven Neave  
GM Electricity Networks

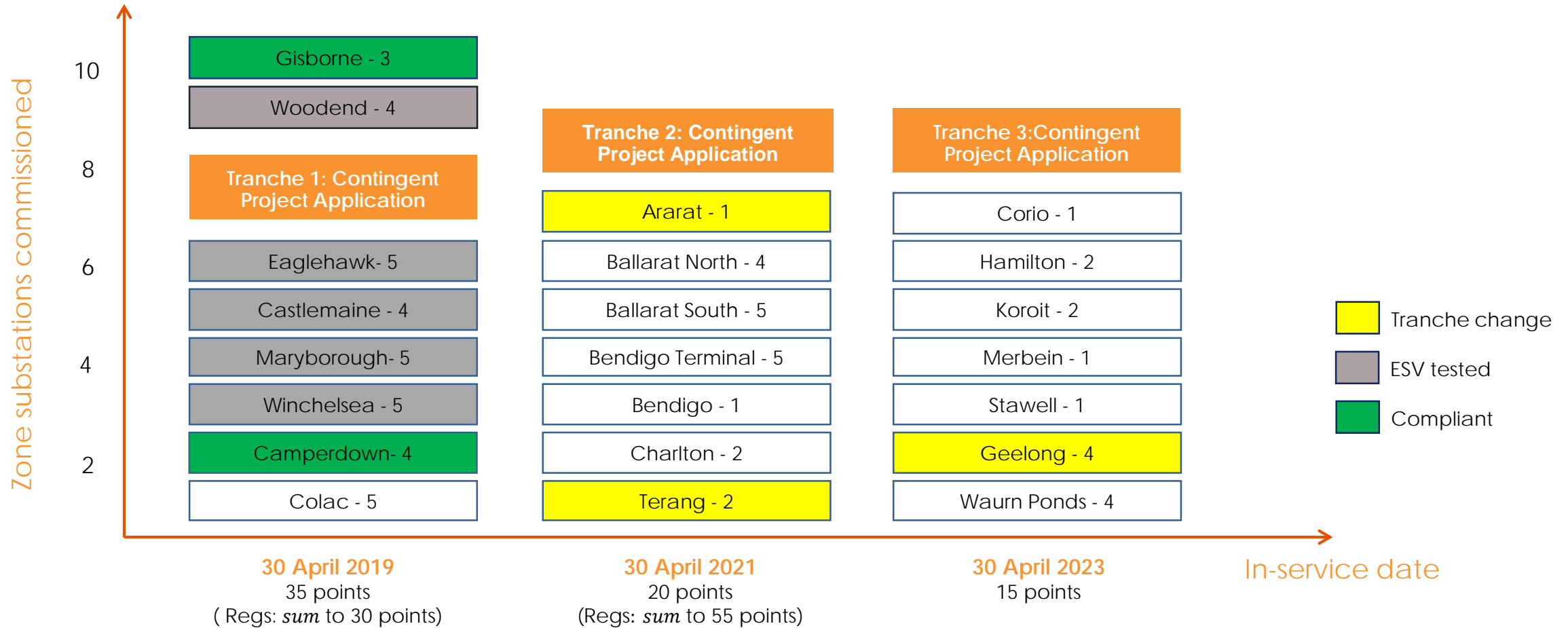


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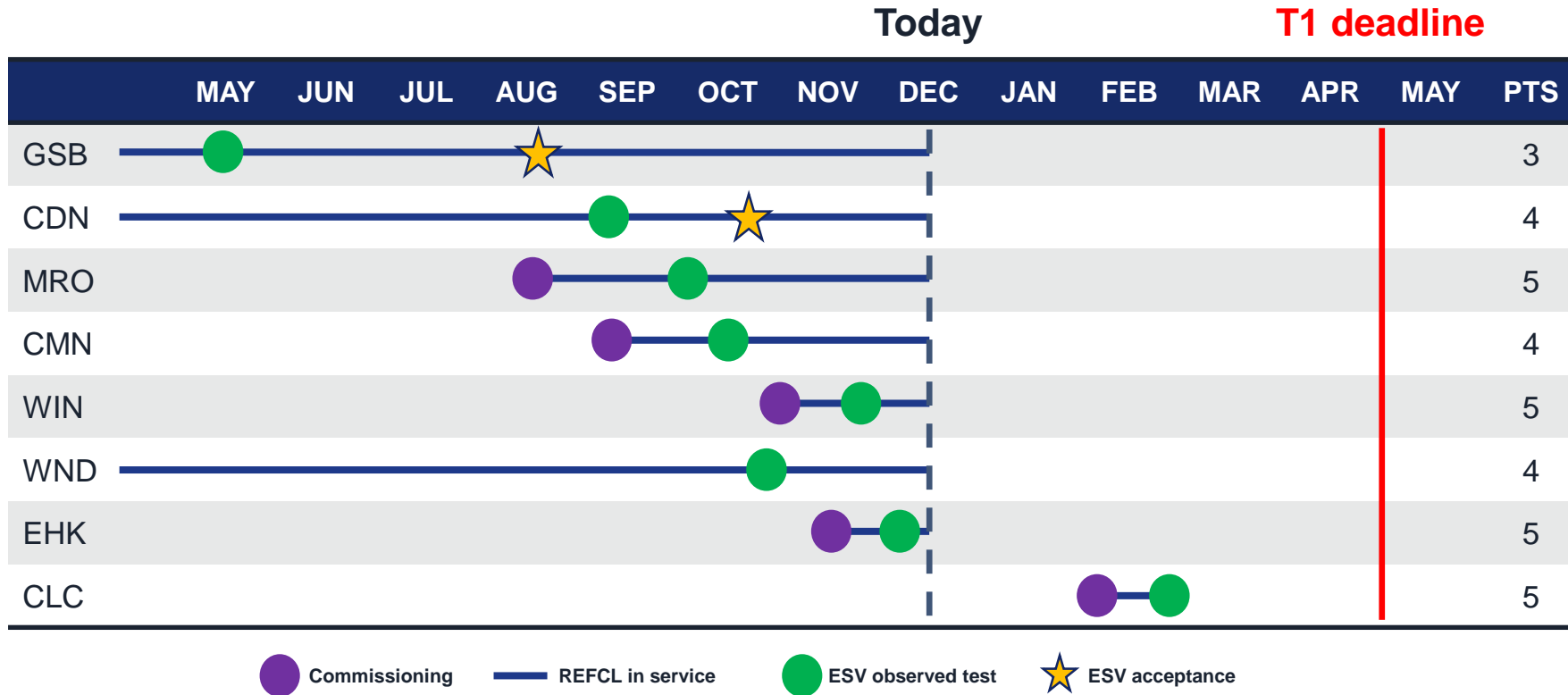
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# REFCL Timetable



# REFCL Deployment timetable – Tranche 1



Powercor has REFCLs at seven zone substations in service operating in *normal* mode as per our Bushfire Mitigation Plan.

# REFCL Implementation Update

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## Compliant zone substations

- Gisborne and Camperdown zone substations meet the definition of a *complying substation*

## Tested zone substations

- ESV-observed compliance tested has been conducted at Maryborough, Castlemaine, Woodend, Winchelsea and Eaglehawk
- Initial Capacity Test (ICT) reports have been submitted to ESV for Maryborough, Castlemaine and Woodend. The reports for Winchelsea and Eaglehawk will be submitted by Friday 14<sup>th</sup> December.
- Colac will be compliance-tested in early 2019



Testing on WIN011 27<sup>th</sup> November

# REFCL Performance update

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Testing at Castlemaine and Woodend has identified an issue with admittance measurements. This issue impacts the largest (capacitive) feeders. This is how the GFN confirms which feeder the fault is on during soft fault confirmation. The issue can cause a feeder to be incorrectly tripped, impacting reliability and fire performance.

- Swedish Neutral have acknowledged the issue
- They developed a hardware solution which was trialled at Winchelsea but did not improve performance. Swedish Neutral attended testing at Eaglehawk from Tuesday 4<sup>th</sup> to Thursday 6<sup>th</sup> December to observe and provide support.

This issue impacts large feeders on one aspect of the test: limiting the thermal energy to 0.1A<sup>2</sup>s (Part C ii).

Powercor continues to work with Swedish Neutral to resolve this.

# Tranche 1 HV Customers

Zone Sub	Feeder	Customer	Option	6MVA	3MVA	LV	Other	Status
Camperdown	CDN001	Fonterra	Transfer to adjacent station				Cobden	Complete
Castlemaine	CMN005	George Western Foods (Main Factory)	Shared Isolation Substation	1				In service
Castlemaine		George Western Foods (Secondary Factory)						
Castlemaine	CMN005	Flowserve (Hunter St)	Shared Isolation Substation	1				In service
Castlemaine		Flowserve (Parker St)						
Castlemaine	CMN004	AGL Hydro	TBA (temporary option in place)				TBA	Complete
Eaglehawk	EHK021	Keech Castings	Shared Isolation Substation	1				In service
Eaglehawk		Motherson Elastomers						
Eaglehawk	EHK031	Coliban Water 1	Single Isolation Substations		1			In service
Eaglehawk	EHK022	Coliban Water 2			1			
Eaglehawk	EHK022	Hofmann Engineering	Shared Isolation Substation		1			In service
Eaglehawk		Thales Australia						
Eaglehawk	EHK033	Southern Shorthaul Railroad	LV conversion			1		Complete
Eaglehawk	EHK033	Parmalat Australia	Single Isolation Substation		1			In service
Eaglehawk	EHK034	Bendigo Health Care	Single Isolation Substation	1				In service
Colac	CLC011	Regal Cream Products (East Fdr)	Single Isolation Substation	1				On site
Colac		Regal Cream Products (West Fdr)						
Colac	CLC011	AKD Softwoods (7-15 Forrest St)	Network hardening				Harden	
Colac	CLC003	AKD Softwoods (Warrowie Rd)	Single Isolation Substation		1			Delivered
Colac	CLC003	Australian Lamb Company	Single Isolation Substation		1			On site
Colac	CLC003	Regal Cream Products (Lot 2 Forrest St)	Single Isolation Substation		1			On site

# HV Customers

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Powercor attended and presented at a HV Customer reference group forum which was organised by Department of Environment, Land, Water and Planning (DELWP).

HV Customers expressed concern around the lack of technical information available on necessary equipment specifications.

In response ESV have prepared a technical guidance document for HV customers which Powercor and AusNet Services have contributed to.

Powercor has communicated dates that we require our tranche 2 HV Customers to be REFCL-ready. Some customers have expressed that they will be unable to meet 2019 commissioning dates, with the potential to impact upon the commissioning of tranche 2 REFCL sites.



# REFCL Commissioning timetable – Tranches 2 & 3

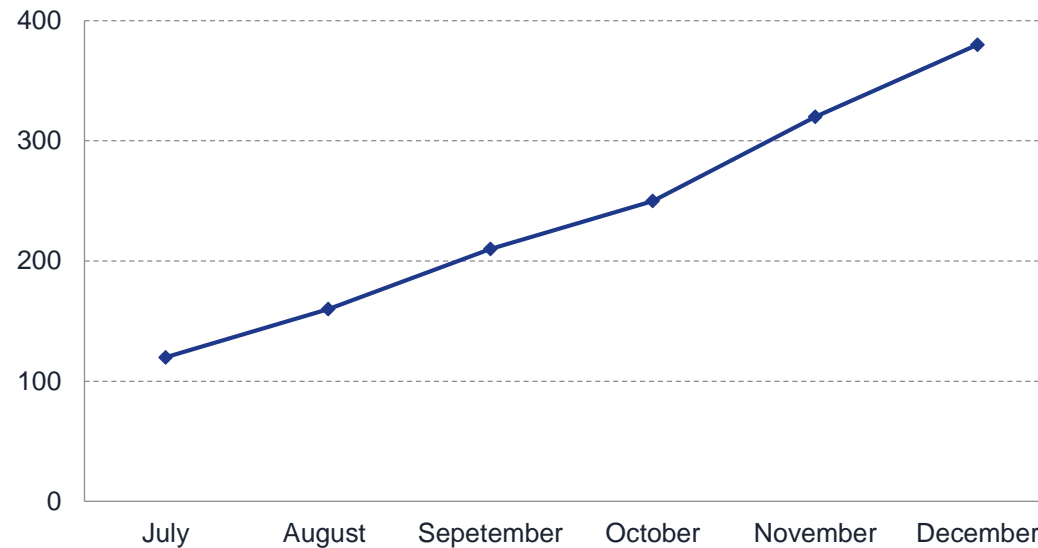
Zone Substation	HVC	2019				2020				2021				2022				2023	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Charlton	4		30 <sup>th</sup> Apr																
Ararat	1			30 <sup>th</sup> Sep															
Ballarat North	1				31 <sup>st</sup> Oct														
Bendigo	8					28 <sup>th</sup> Feb													
Ballarat South	4						30 <sup>th</sup> Apr												
Terang	1						30 <sup>th</sup> Jun												
Bendigo Terminal	4							30 <sup>th</sup> Aug											
Hamilton	1																		
Wauru Ponds	4																		
Geelong	1																		
Stawell	2																		
Koriot	4																		
Corio	6																		
Merbein	2																		

# SWER ACR status

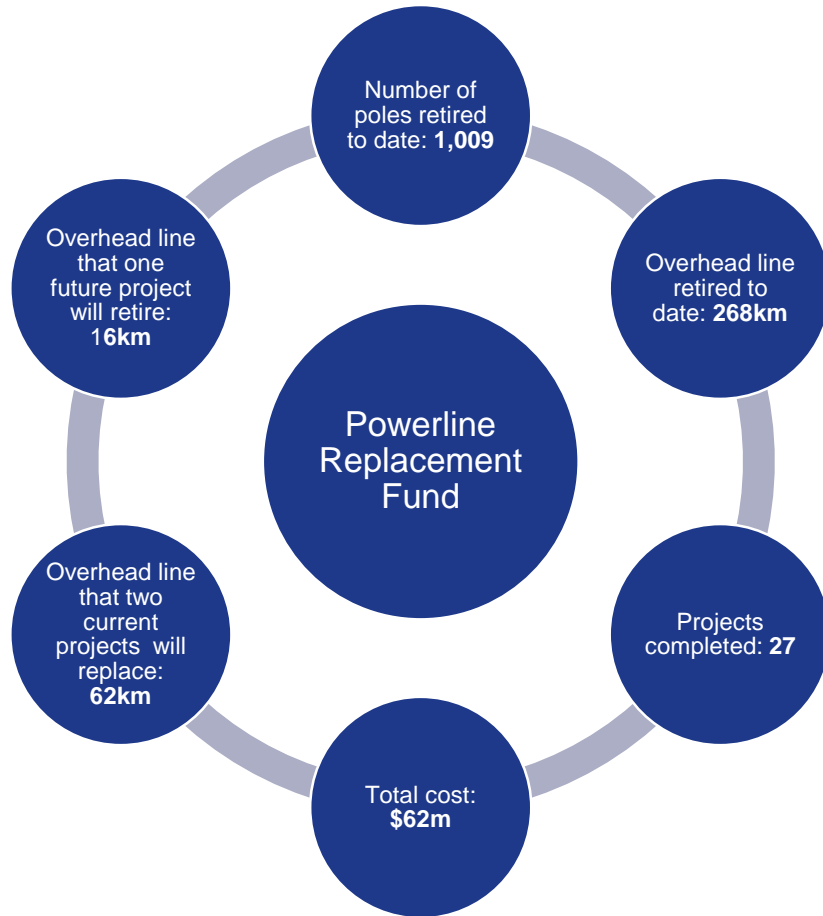
A total of 1,045 SWER systems are to be protected with new functionality ACRs



We have committed to install 350 ACRs this year. We are currently forecasting to exceed that and install approximately 380 ACRs.



# Powerline Replacement



## Commentary

- Negotiations continue with ESV around the use of hybrid underground.
- To date, Powercor has retired 268km of bare wire as part of the Powerline Replacement Fund project.

