

# Powerline Bushfire Safety Committee

August 2019

Tom Hallam, GM Regulation and Network Strategy  
Mike Carter, GM Network Engineering

Commercial in confidence



# Agenda



## ▶ REFCL

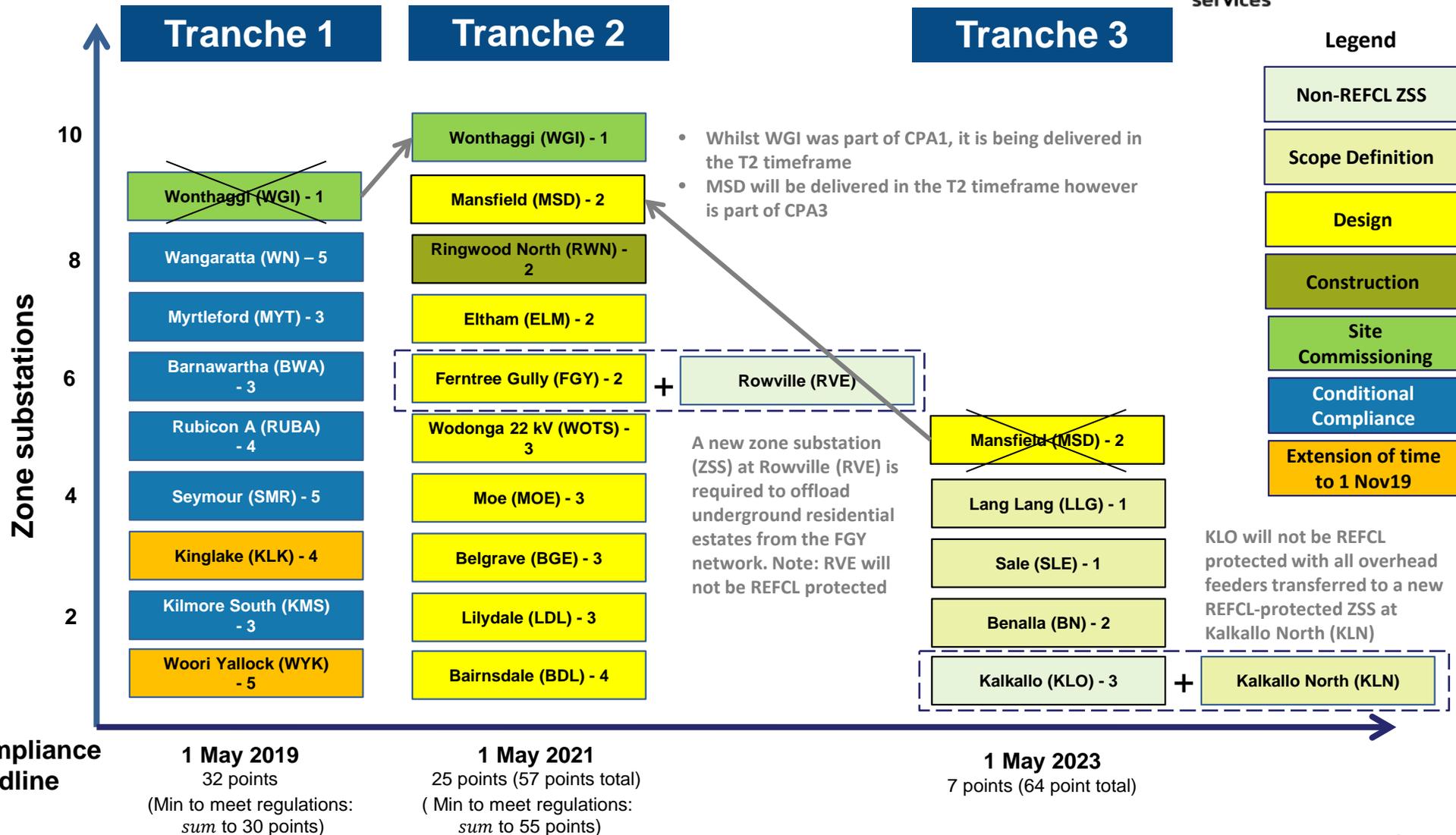
1. REFCL Timetable
2. Tranche 1 Compliance Update
3. Tranche 2 HV Customer readiness
4. Tranche 2 Roadmap
5. Tranche 3 Update

## ▶ Other bushfire mitigation programs

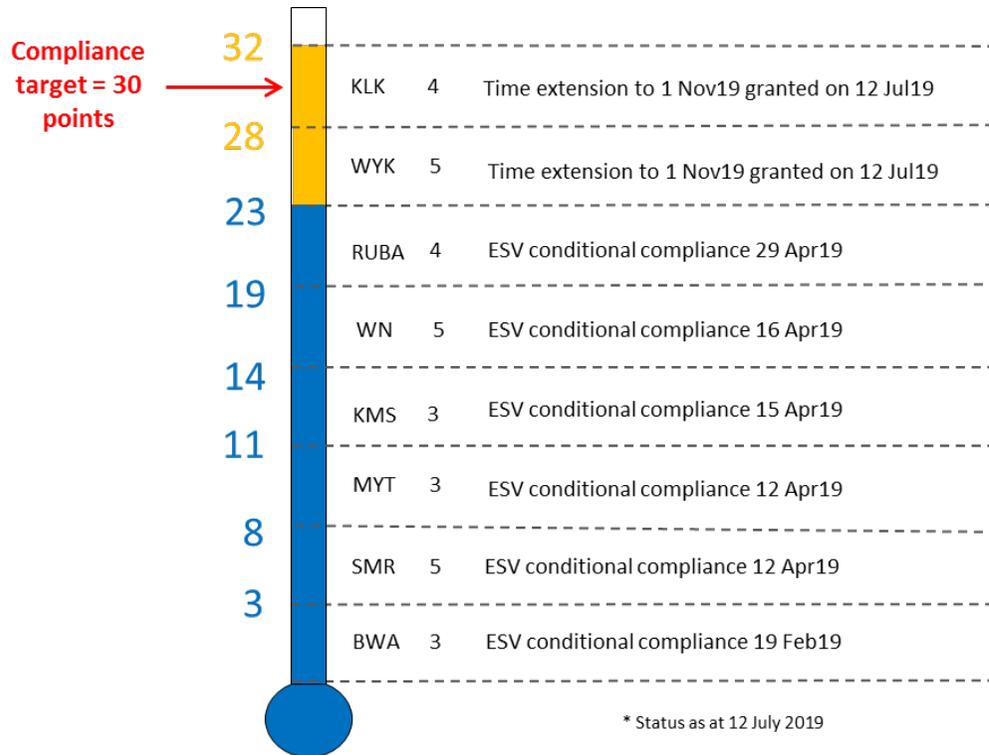
6. ACR Program
7. Powerline Replacement
8. Electric Line Construction Areas

# 1. REFCL Program

## Overview as at 31 July 2019



## 2. Tranche 1 Compliance Update



Legend	
<span style="color: blue;">■</span>	Points conditionally approved
<span style="color: yellow;">■</span>	Time extension to 1 Nov19

- ▶ Time extension from 1 May 2019 to 1 November 2019 for Woori Yallock (WYK) and Kinglake (KLK) was granted by ESV on 12 July 2019
  - Harmonic issues at WYK and KLK will be addressed by the implementation of 22 kV capacitor banks in early 2020
  - Options to resolve the damping issue at KLK are being assessed
  - A plan to achieve compliance at WYK and KLK was provided to ESV on 26 July 2019
- ▶ REFCL performance issues
  - A new release of software, SVN526, tested at KLK and BWA has shown improvements in performance, addressing the anomalous results encountered in Tranche 1 compliance testing
  - ESV-observed annual compliance testing will commence at Barnawartha (BWA) on 19 August 2019 using the latest software

# 3. Tranche 2 HV Customer Readiness

## Key issues and risks



HV Customer	Connection points overview				Status	Current status	Next steps
Metro Trains Melbourne (MTM)	<b>ZSS</b>	<b>MTM Connections</b>	<b>REFCL Readiness Date</b>	<b>Points</b>	<b>RED</b>	<ul style="list-style-type: none"> <li>MTM have advised they are unable to meet the T2 compliance deadline of 1 May 2021</li> </ul>	<ul style="list-style-type: none"> <li>Time extension request to be drafted for the four (4) impacted zone substations, totalling 8 compliance points once MTM have confirmed their schedule following the ordering of long lead items</li> </ul>
	Belgrave (BGE)	Upwey	30 April 2020	3			
	Ferntree Gully (FGY)	Ferntree Gully	31 May 2020	2			
	Eltham (ELM)	Eltham Montmorency Wattle Glen	30 June 2020	2			
	Lilydale (LDL)	Lilydale Mooroolbark	31 July 2020	3			
Australian Defence Force (ADF)	<b>ZSS</b>	<b>ADF Connections</b>	<b>REFCL Readiness Date</b>	<b>Points</b>	<b>AMBER</b>	<ul style="list-style-type: none"> <li>Meeting held with ADF representatives on 22 July 2019 where ADF confirmed they are progressing with the implementation of their REFCL solutions</li> <li>However, ADF noted the constraints in the market place may impact their ability to meet the required REFCL readiness dates for Tranche 2</li> </ul>	<ul style="list-style-type: none"> <li>Regular REFCL readiness status updates to be provided by ADF</li> </ul>
	Wodonga Terminal Station (WOTS)	<ul style="list-style-type: none"> <li>East Bandiana</li> <li>North Bandiana</li> <li>South Bandiana</li> <li>Latchford Barracks</li> </ul>	30 June 2020	3			



# 5. REFCL Tranche 3 Update



- ▶ **AER assessment of the Tranche 3 contingent project application (CPA3) is underway**
  - › Date for the decision is on or before 17 October 2019
  
- ▶ **The Kalkallo (KLO) REFCL solution is the contentious issue in the CPA3**
  - › KLO supplies 3 (soon to be 4) Jemena 22 kV feeders in a high growth area
  
- ▶ **A workshop was held at the AER offices on 2 August 2019 with representatives from the AER, ESV, DELWP, Jemena, AusNet Services and WSP to discuss the KLO REFCL solution**
  - › Six (6) shortlisted options were discussed and it was agreed that the following two options be costed and provided to the AER for consideration:
    - Construction of a new two (2) REFCL ZSS at Kalkallo North (KLN), the KLO overhead feeders to be transferred to KLN, KLO not to be REFCL protected and supply underground cable only
    - Implementation of two (2) REFCLs at KLO, installation of isolating transformers on underground feeders to reduce capacitance on KLO
  
- ▶ **Technical exemptions are required for both options**

## 6. ACR Program

### ➤ Completed December 2015

Fire Consequence Level	# Devices Highest Risk Areas	# Devices Remaining Risk Areas
TFB/Code Red	165	900

## 7. Powerline Replacement

### Powerline Replacement Fund

- 1,680km in 'codified' areas
- 147km replaced; cost \$70.9M
- 25.3km in progress; cost \$11.4M
- Scheduled completion Nov 2019

### AusNet Services' Program

- Conductor condition good
- Risk Based Modelling
  - Vegetation
  - Reliability
- No contingent projects identified
- ~\$500-600M investment

## 8. Electric Line Construction Areas



The table below indicates the change in volumes (km) of bare and insulated powerline between 1 May 2018 and 30 April 2019.

Total HV Electric Line Volumes	At 1 May 2018	At 30 April 2019	Progress over Reporting Period
Bare construction in ELCA	Route km	Route km	Route km
Polyphase	816.51	786.55	(29.96)
SWER	646.68	644.47	(2.21)
Covered or underground construction in ELCA	Route km	Route km	Route km
Polyphase	264.39	296.25	31.86
SWER	0.43	5.05	4.62

As at the 30 April 2019 the percentage of total route kilometres of all bare conductors remaining within Electric Line Construction Areas is 83%.

The table below indicates the planned change in volumes (km) of bare and insulated powerline between 1 May 2019 and 30 April 2020.

Total HV Electric Line Volumes	At 1 May 2019	At 30 April 2020	Progress over Reporting Period
Bare construction in ELCA	Route km	Route km	Route km
Polyphase	786.55	786.55	-
SWER	644.47	621.56	(22.91)
Covered or underground construction in ELCA	Route km	Route km	Route km
Polyphase	296.25	296.25	-
SWER	5.05	28.48	23.44

The planned percentage of total route kilometres of bare conductor remaining within Electric Line Construction Areas as at 30 April 2020 is forecast to be 81%.

Source: 2019 Compliance Report under Section 120P of the Electricity Safety Act 1998 submitted to ESV on 30 July 2019