



APPLICATIONS FOR EXCLUSION FROM THE VICTORIAN SERVICE INCENTIVES FOR SUPPLY RELIABILITY

SUPPLY INTERRUPTIONS DUE TO:

- **THE 20 FEBRUARY 2008 WIDE-SCALE SUPPLY INTERRUPTION EVENT**
- **TRANSMISSION NETWORK INCIDENTS FEBRUARY-SEPTEMBER 2008**

Final Decision

3 April 2009

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1 Introduction

Four of the five Victorian electricity distribution businesses—Jemena Electricity Networks (Vic) Ltd,¹ Powercor Australia Ltd, SP AusNet² and United Energy Distribution Pty Ltd—applied to the Essential Services Commission of Victoria (ESCV) to exclude the 20 February 2008 wide-scale supply interruption event, and three other supply interruption events due to transmission network incidents between February and September 2008 from the supply reliability service incentive scheme under the ESCV's *Electricity Distribution Price Review 2006–10* (Price Review).

The ESCV published a draft decision on 17 December 2008, proposing to approve all the applications, and invited stakeholders to provide comments on the draft decision. The paper presents the final decision on the applications, covering the following supply interruption events:

- The 20 February 2008 wide-scale supply interruption event that occurred in Jemena's supply area
- Transmission network incidents between February and September 2008, specifically:
 - application by Powercor regarding an outage event at Red Cliffs Terminal Station on 22 February 2008
 - applications by Jemena and SP AusNet regarding an outage event at Thomastown Terminal Station on 31 July 2008
 - application by United Energy regarding an outage event at Ringwood Terminal Station on 3 September 2008.

1.1 The role of the Australian Energy Regulator (AER)

As part of the transition to national regulation of energy markets, the AER is exercising certain powers and functions previously undertaken by the ESCV. The new responsibilities are conferred on the AER by the operation of the *National Electricity (Victoria) Act 2005* (NEVA) in accordance with the *Trade Practices Act 1974* and the Australian Energy Market Agreement. The NEVA specifically confers economic regulatory functions, powers and duties on the AER.

The AER is making this final decision under the ESCV's 2006-10 Price Review and *Electricity Distribution Code* provisions for approving exclusions from the calculation of the S factor and the obligation to make supply reliability GSL payments respectively.

1.2 The ESCV's service (reliability) incentive scheme

The ESCV incorporated a service incentive scheme in the 2006-10 Price Review. The incentives of the scheme are in the form of:

¹ Prior to August 2008, Jemena was known as Alinta AE.

² The trading name of SPI Electricity Pty Ltd.

- A service term (S factor) in the price control formula, giving it the form of $(1+CPI)(1-X)S$.

If a distributor provides an average level of reliability above the target levels, then its distribution tariffs will rise in subsequent years. If reliability is worse than the target levels, the tariffs will fall.

- Guaranteed service level (GSL) payments to customers for low reliability.

Customers are entitled to receive a credit if they experience more than the specified number of sustained or momentary interruptions³ in a calendar year, or if they experience a cumulative supply interruption time longer than the specified number of hours.

Further information on the service incentive scheme is contained in the 2006-10 Price Review final decision papers available from the ESCV's website.⁴

1.3 Exclusions from the service incentive scheme

On application by distributors, the AER (previously the ESCV) may approve exclusions from the calculation of the S factor, and from the requirement to make certain GSL payments, for supply interruptions due to the following events:

- supply interruptions made at the request of the affected distribution customer
- load shedding due to a shortfall in generation, but not a shortfall in embedded generation that has been contracted to provide network support except where prior approval has been obtained from the ESCV or AER, where relevant
- supply interruptions caused by a failure of the shared transmission network
- supply interruptions caused by a failure of transmission connection assets, to the extent that the interruptions were not due to inadequate planning of transmission connections
- where prior written approval has been obtained from the ESCV or AER, load shedding due to a shortfall from demand side response initiatives
- supply interruptions on a day where the unplanned sustained interruption frequency, summed across all network types, exceeds set thresholds.

The Price Review requires that distributors apply to the AER (previously ESCV) for such exclusions within 30 business days of an event occurring, identifying:

- the relevant event
- the impact of the event on the distribution business's reliability performance

³ Supply interruptions shorter than one minute are classified as momentary interruptions.

⁴ At www.esc.vic.gov.au/public/Energy/Consultations/Electricity+Distribution+Price+Review+2006-10/Electricity+Distribution+Price+Review+2006-10.html

- the proposed extent of the exclusions
- reasons for the exclusions.

The Price Review also requires the AER (previously ESCV) to provide a statement of reasons on whether it proposes to approve the applications by the distributors, and to consult with stakeholders before making a final decision.

1.4 Review process

In developing the final decision, the AER has considered stakeholders' submissions to the ESCV's draft decision, which are discussed in section 3 of this paper.

1.5 Structure of this paper

- Chapter 2 provides an overview of the supply interruption events and the ESCV's draft decision
- Chapter 3 provides an overview of the submissions received by the ESCV
- Chapter 4 sets out the AER's final decisions on the distributors' applications.

2 Summary of the supply interruption events and ESCV's draft decision

2.1 Summary of the supply interruption events

2.1.1 Wide-scale supply interruption event on 20 February 2008

Jemena advised that a significant number of its customers experienced power interruptions on 20 February 2008. The widespread interruptions were due to weather conditions that were conducive to pole fires.

A total of 37,035 customers experienced supply interruption on that day. This represents a daily unplanned sustained interruption frequency (UPSAIFI)⁵ of 0.123 for Jemena's network.

According to Jemena, light rain fell on 20 February 2008 after a sustained dry summer period and set off a spate of pole fires. To support its claim, Jemena quoted an article published by the Herald Sun on 20 February 2008 at 3:05 pm, which stated that:

"Tens of thousands of Victorian homes were blacked out today as drizzling rain mixed with dust sparked fires on power poles across the state...About 35,000 homes lost power at some point in the past 24 hours, as dozens of power poles were affected...Hoppers Crossing, Geelong, Bacchus Marsh and Werribee were the worst hit suburbs."

In the application, Jemena advised that:

- Pole fires are generally caused by a build up of air-borne particles on insulators. When moisture is added to this, usually in the form of light rain or fog, the particles may conduct electricity. This may cause arcing at the base of the insulator and when the current is large enough, results in ignition of the pole or crossarm. The factors which increase the likelihood of a pole fire are particles build-up on insulators and the 'dryness' of the pole and the crossarm. The greater the build-up of particles and the drier the pole, the more likely a fire is to occur.
- The Australian Government Bureau of Meteorology (BOM) has published a rainfall deficiency map using the "Rainfall Percentile Ranking" for the period February 2006 to March 2008. Jemena's distribution area is shown in the map as experiencing "Severe Deficiency". BOM notes that "... above to very much above average rainfall is needed in the rainfall deficient areas over the next six months just to elevate totals since March 2006 out of the lowest decile."

The application for exemption from the service incentive scheme was made within 30 business days of the supply interruption event on the grounds that the unplanned sustained interruption frequency (UPSAIFI), summed across all network types, for the

⁵ Unplanned supply interruption frequency (UPSAIFI) is a network performance measure. It is calculated as the sum of all unplanned sustained customer interruptions divided by the total number of distribution customers of the distributor.

24 hour period on 20 February 2008 exceeded the exclusion threshold of 0.120 set by the ESCV for Jemena.⁶

2.1.2 Supply interruption event at Red Cliffs Terminal Station (RCTS) on 22 February 2008

Powercor advised that, on 22 February 2008, SPI PowerNet (the transmission network service provider in Victoria) undertook tests of the load shedding equipment at RCTS. SPI PowerNet's testers inadvertently initiated a trip of the Group 2 Load Shed Scheme, resulting in the loss of supply to Powercor's Robinvale, Wemen and Ouyen Zone Substations. A total of 6,123 customers were affected. The outage occurred at about 9:18 am. All customer supplies were restored by 9:20 am.

The overall impact of the event on Powercor's performance indicators was:

- Rural Unplanned SAIDI 0.029 minutes-off-supply
- Rural Unplanned SAIFI 0.014 interruption per year
- Network Unplanned SAIDI 0.02 minutes-off-supply
- Network Unplanned SAIFI 0.009 interruption per year

The application for exemption from the service incentive scheme was made within 30 business days of the supply interruption event on the grounds that the supply interruptions were caused by a failure of transmission connection assets.

2.1.3 Supply interruption event at Thomastown Terminal Station (TTS) on 31 July 2008

Jemena and SP AusNet advised that the Thomastown–Somerton Switching Station–Somerton–Epping–Thomastown 66 kV loop circuit (TTS-SSS-ST-EPG-TTS) at Thomastown Terminal Station (TTS) was inadvertently de-energised on 31 July 2008.

According to the distributors, zone substation Somerton (ST) is supplied from TTS via the TTS-SSS-ST-EPG-TTS 66 kV loop. At the time of the incident, the supply system was abnormal. The TTS-EPG leg of the 66 KV loop was isolated for planned work by SPI PowerNet.

In accordance with accepted practices, the deadline blocking at ST on the EPG line was suppressed. The deadline blocking at Somerton Switching Station (SSS) on the ST line was also suppressed. A fault occurred on the TTS-SSS section of the 66 kV line and caused the line protection to operate at 11:12 am. The operation resulted in the loss of supply to SSS, ST and EPG. Somerton Power Station was not supplying any customers at the time of the incident.

The circuit breakers controlling the 66 kV loop at TTS are designed to reclose following the initial protection operation under fault conditions. Should the reclose

⁶ Refer to Table 2.1 of the *Electricity Distribution Price Review 2006-10 Final Decision – Volume 2 Price Determination*. The same exclusion thresholds are stated in clause 6.3.4 of the *Electricity Distribution Code* for exclusions of supply reliability GSL payments.

operation be successful, the customers supplied from ST would have experienced a momentary interruption of 3-second duration. On this occasion, the circuit breaker at the TTS end of the line, which is owned and operated by SPI PowerNet, did not attempt a reclose due to a faulty control relay. SPI PowerNet manually restored supply to zone substation ST via the previously isolated leg of the loop at 11:18 am. This was possible because at the time of the incident the planned work on the section of the loop was already completed and was ready to be put back into service.

Jemena patrolled the TTS-SSS section of the 66 kV line and was unable to identify a cause of the fault. At 1:32 pm, Jemena restored the TTS-SSS leg of the 66 kV loop, thus restoring the loop to system normal. The successful restoration of the 66 kV line without requiring any corrective action means that the original fault, which caused the supply interruption was momentary.

Subsequent testing by SPI PowerNet confirmed that the auto reclose control relay was faulty.

A total of 43,007 customers (13,956 Jemena and 29,051 SP AusNet) experienced between six to 17 minutes of supply interruption. The overall impact of the supply interruption event on the distributors' performance indicators was:

- network unplanned SAIDI — 0.28 and 0.656 minutes-off-supply for Jemena and SP AusNet respectively
- network unplanned SAIFI — 0.046 and 0.048 interruption per year for Jemena and SP AusNet respectively.

The applications for exemption from the service incentive scheme were made within 30 business days of the supply interruption event on the grounds that the supply interruptions were caused by a failure of transmission connection assets.

2.1.4 Supply interruption event at Ringwood Terminal Station (RWTS) on 3 September 2008

United Energy advised that, at 4:58 pm on 3 September 2008, a three phase fault developed on SPI PowerNet's RWT25 22 kV feeder. The feeder protection relay failed to operate correctly due to an incorrect setting, resulting in the operation of the backup 22 kV No.2 busbar over-current protection relay.

The operation of the 22 kV No.2 busbar over-current protection caused all circuit breakers on the busbar to open and de-energised the 22 kV Nos.2 and 3 busbars. This resulted in the loss of supply to United Energy's feeders RWT24, RWT28 and RWT31.

Correct settings have since been applied to the RWT25 feeder protection relay by SPI PowerNet.

The incident resulted in a loss of supply to 7,548 customers for about 10 minutes. The overall impact of the event on United Energy's performance indicators was:

- network unplanned SAIDI — 0.13 minutes

- network unplanned SAIFI — 0.0123 interruptions.

The application for exemption from the service incentive scheme was made within 30 business days of the supply interruption event on the grounds that the supply interruptions were caused by a failure of transmission connection assets.

2.2 ESCV's draft decision

The ESCV released its draft decision on 17 December 2008, approving all the applications by the distributors to exclude the four supply interruption events, as discussed in section 2.1, from the calculation of the S factor and the obligation to make supply reliability GSL payments, because the supply interruption events met the relevant exclusion criteria. The reasoning for the draft decision can be found on the ESCV's website.⁷ In summary:

- The 20 February 2008 wide-scale supply interruption event that occurred in Jemena's supply area was approved on the basis that the level of supply interruptions on that day represented a level of unplanned sustained interruption frequency, summed across all network types, exceeded the exclusion thresholds.
- The following transmission network incidents, between February and September 2008, were approved on the basis that the supply interruptions were caused by a failure of the transmission connection assets and that the interruptions were not due to inadequate planning of the transmission connections:
 - the outage event at Red Cliffs Terminal Station on 22 February 2008 affecting Powercor's customers
 - the outage event at Thomastown Terminal Station on 31 July 2008 affecting Jemena's and SP AusNet's customers
 - The outage event at Ringwood Terminal Station on 3 September 2008. affecting United Energy's customers.

⁷ At <http://www.esc.vic.gov.au/public/Energy/Consultations/Applications+for+exclusions+from+financial+incentives+for+supply+reliability+2007/>

3 Submissions received

Jemena, United Energy, CitiPower and Powercor made submissions to the draft decision. All distributors advised that they agreed with the ESCV's assessment of their applications and the draft decision to exclude the supply interruption events from the service incentive scheme.

4 Final decision

The AER has not received any information that would lead it to amend ESCV's draft decision. Hence, the AER confirms ESCV's decision to approve the supply interruption events as listed in section 2.2 for exclusion from the calculation of the S factor and from the obligation to make guaranteed service level payments for low reliability.