

# REVIEW OF THE VICTORIAN ELECTRICITY DISTRIBUTORS' GUARANTEED SERVICE LEVEL PAYMENT SCHEME

Draft Decision

November 2015

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# PREFACE

Victoria's electricity distributors are natural monopolies. The revenues they recover from their customers are regulated to ensure they are not able to exercise market power.

In regulating the electricity distributors' revenues, there is a link between the prices that customers pay and the service they receive – customers can pay more for a higher level of service, or pay less for a lower level of service. The challenge for the regulator is to ensure the balance between the price that is paid and the level of service received reflects the needs of the electricity distributors' customers.

The electricity distributors are subject to an incentive-based economic regulatory regime. If the electricity distributors are able to deliver a given level of service at a lower cost, they are able to retain the additional profits that they earn. To offset the risk that the electricity distributors will reduce service levels to earn additional profits, the regulatory framework includes a service incentive regime.

The service incentive regime comprises two parts. A service incentive factor provides an incentive to maintain average service levels, and is regulated by the Australian Energy Regulator (AER). A Guaranteed Service Level or GSL payments scheme provides payments directly to the worst served customers (in the case of reliability) or where certain levels of service are not met. The GSL payments scheme is set out in the Commission's Codes – the Electricity Distribution Code and the Public Lighting Code.

It is now timely to review the GSL payments scheme for the 2016-20 regulatory control period, as it has not been reviewed since 2005.

Data provided by the electricity distributors on their level of service over the 2010-14 period indicate that most customers received a good level of service. Most customers are supplied by electricity for more than 99.95 per cent of the year, are connected to

the electricity network by the agreed date, the electricity distributors meet with them at the agreed time, and have public lighting near their properties repaired on a timely basis.

However, there remain pockets of customers that are less well served. They may experience more interruptions or longer periods of time off supply. They may not be connected to the electricity network by the agreed date, the electricity distributors may not meet with them at the agreed time, or public lighting near their properties may not be repaired on a timely basis.

It may not be economically efficient to improve the level of service provided to these customers. It is appropriate that the electricity distributors continue to acknowledge that these customers receive a lower level of service and receive a GSL payment.

Much has changed since the GSL payments scheme was last reviewed. The AER has introduced a national GSL payments scheme, smart meters have been rolled out to most Victorian properties, two further studies on the value that customers place on reliability have been undertaken by the Australian Energy Market Operator, and the real value of the GSL payments has reduced.

While the broad architecture of the GSL payments scheme remains appropriate to provide an additional incentive for electricity distributors to improve the level of service for the worst served customers, a number of changes to the scheme are proposed in this paper to strengthen the incentives.

The most significant changes proposed are to reduce the level at which a GSL payment is made for the number of interruptions experienced in a year and to increase the nominal value of GSL payments that are made. The proposed increase in the value of GSL payments ensures that the real value of the GSL payments is maintained, and reflects the latest information available on the value that customers place on reliability.

Prior to the widespread installation of smart meters, there was little information available on the quality of supply experienced by customers. Now that most customers have smart meters installed, it is possible to collect more information on the quality of supply. This information can then be used to introduce a new GSL payment for the 2021-25 period, for those customers experiencing poor quality of supply.

Changes to the GSL payments scheme, and a new requirement to collect data on quality of supply, will be informed by submissions on the proposals in this Draft Decision. We expect that any changes made will commence from 1 January 2016.

# ACRONYMS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
DNSP	Distribution Network Service Provider
DPI	Distribution Price Index
GSL	Guaranteed Service Level
PBSP	Powerline Bushfire Safety Program
the Codes	Electricity Distribution Code (version 7) and the Public Lighting Code (published April 2005)
the Commission	Essential Services Commission of Victoria
the Department	Department of Economic Development, Jobs, Transport and Resources
VCR	Value of Customer Reliability

# CONTENTS

<b>PREFACE</b>	<b>II</b>
<b>ACRONYMS</b>	<b>V</b>
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 PURPOSE OF THIS PAPER	1
1.2 SCOPE OF REVIEW	2
1.3 STRUCTURE OF REPORT	2
<b>2 CONTEXT</b>	<b>4</b>
2.1 THE COMMISSION'S OBJECTIVE	4
2.2 WHAT IS A GSL PAYMENTS SCHEME?	5
2.3 WHY DO WE HAVE A GSL PAYMENTS SCHEME?	5
2.4 RELATIONSHIP TO THE AER'S REVENUE DETERMINATION	7
2.5 METHODOLOGY USED IN SETTING THE CURRENT GSL PAYMENTS SCHEME	8
2.6 NATIONAL GSL PAYMENTS SCHEME	11
<b>3 CURRENT SERVICE LEVELS</b>	<b>13</b>
3.1 DURATION OF UNPLANNED INTERRUPTIONS	13
3.2 FREQUENCY OF UNPLANNED SUSTAINED INTERRUPTIONS	16
3.3 FREQUENCY OF MOMENTARY INTERRUPTIONS	18
3.4 ON TIME FOR APPOINTMENTS	21
3.5 NEW CONNECTIONS	22
3.6 PUBLIC LIGHTING REPAIRS	22
<b>4 PROPOSED GSLS FOR THE NEXT REGULATORY CONTROL PERIOD</b>	<b>24</b>

<b>4.1 ARE THE MEASURES INCLUDED IN THE GSL PAYMENTS SCHEME APPROPRIATE?</b>	<b>25</b>
<b>4.2 ARE THE THRESHOLDS OR LEVELS OF THE GSL PAYMENTS SCHEME MEASURES APPROPRIATE?</b>	<b>32</b>
<b>4.3 ARE THE PAYMENT LEVELS OF THE GSL PAYMENTS SCHEME MEASURES APPROPRIATE?</b>	<b>47</b>
<b>4.4 ARE THE CRITERIA FOR EXCLUDING INTERRUPTIONS FROM THE RELIABILITY-BASED GSL PAYMENTS SCHEME MEASURES APPROPRIATE?</b>	<b>60</b>
<b>4.5 ESTIMATED IMPACT OF THE PROPOSED CHANGES TO THE VICTORIAN GSL PAYMENTS SCHEME</b>	<b>71</b>
<b>5 PROPOSED CHANGES TO REGULATORY INSTRUMENTS</b>	<b>74</b>
<b>5.1 PROPOSED AMENDMENTS TO THE ELECTRICITY DISTRIBUTION CODE</b>	<b>74</b>
<b>5.2 PROPOSED AMENDMENTS TO THE PUBLIC LIGHTING CODE</b>	<b>78</b>
<b>6 NEXT STEPS</b>	<b>79</b>
<b>6.1 CONSULTATION</b>	<b>79</b>
<b>6.2 FINAL DECISION</b>	<b>79</b>



# 1 INTRODUCTION

## 1.1 PURPOSE OF THIS PAPER

As part of the 2006-10 Electricity Distribution Price Review, the Essential Services Commission (the Commission) determined the Guaranteed Service Level (GSL) payments to be made by the Victorian electricity distributors to their customers during the 2006-10 regulatory control period. The requirement for the electricity distributors to make GSL payments was subsequently included in the Electricity Distribution Code and the Public Lighting Code (the Codes).

Following the transfer of economic regulation from the jurisdictional regulators to the Australian Energy Regulator (AER), the AER developed a Service Target Performance Incentive Scheme<sup>1</sup>, which included GSL payments that were to be made by each of the electricity distributors that were regulated by the AER, in the jurisdictions in which the scheme was applied.

During the 2011-15 Electricity Distribution Price Review, the Victorian Government raised a number of concerns about the AER's GSL payments scheme. Following discussions between the government, the AER and the Commission, the Victorian GSL payments scheme, as determined in 2005 and set out in the Codes, continued to apply during the 2011-15 regulatory control period.

The AER is currently in the process of determining the electricity distributors' revenue requirements for the 2016-20 regulatory control period. As no changes have been made to the AER's GSL payments scheme to address the concerns previously raised by the Victorian Government, the Victorian Government considers that the Victorian

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<sup>1</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme*, November 2009

GSL payments scheme, as set out in the Codes, should continue to apply to the Victorian electricity distributors during the 2016-20 regulatory control period.

Prior to the commencement of the 2016-20 regulatory control period on 1 January 2016, the Commission is reviewing the GSL payments scheme that applies to the Victorian electricity distributors to ensure that it continues to meet the Commission's objectives.

## **1.2 SCOPE OF REVIEW**

The review of the GSL payments scheme that applies to the Victorian electricity distributors will consider any changes that have occurred since the GSL payments scheme was last reviewed in 2005, and any changes that are expected to occur over the 2016-20 regulatory control period, to ascertain:

- whether the performance measures in the GSL payments scheme continue to be appropriate
- whether the thresholds or levels for the GSL payments scheme measures continue to be appropriate
- whether the payment levels for each of the GSL payments scheme measures continue to be appropriate
- whether the criteria for excluding certain events from the GSL payments scheme continue to be appropriate.

## **1.3 STRUCTURE OF REPORT**

This Draft Report is divided into six chapters:

- Chapter 1 contains the introduction.
- Chapter 2 sets out the context for the review.
- Chapter 3 presents the current levels of service provided by the Victorian electricity distributors.

- Chapter 4 presents the Commission’s analysis of the GSL payments scheme and the proposed changes to the scheme for the 2016-20 regulatory control period.
- Chapter 5 sets out the amendments required to the Codes to implement the GSL payments scheme proposed for the 2016-20 regulatory control period.
- Chapter 6 sets out the next steps for the review.

## 2 CONTEXT

This chapter provides the context for the review of the Victorian GSL payments scheme. It sets out:

- the Commission's objective, in section 2.1
- the definition of a GSL payments scheme, in section 2.2, and the rationale for having a GSL payments scheme in section 2.3
- the relationship between the Victorian GSL payments scheme and the AER's revenue determination for the Victorian electricity distributors in section 2.4
- the methodology used in setting the current Victorian GSL payments scheme in section 2.5
- the national GSL payments scheme in section 2.6.

### 2.1 THE COMMISSION'S OBJECTIVE

In reviewing the Victorian GSL payments scheme, the Commission must have regard to its objective. The Commission's objective, which is set out in section 8 of the *Essential Services Commission Act 2001*, is:

*... to promote the long term interests of Victorian consumers.*

In seeking to achieve this objective, the Commission must have regard to the price, quality and reliability of essential services.

The Commission must also have regard to other relevant matters, including<sup>2</sup>:

- efficiency in the industry and incentives for long term investment
- the benefits and costs of regulation
- consistency in regulation between States and on a national basis.

## 2.2 WHAT IS A GSL PAYMENTS SCHEME?

Under a GSL payments scheme, electricity distributors make payments directly to those customers who receive a level of service that is worse than a specific threshold or level.

The requirement for the electricity distributors to make GSL payments is set out in the Codes. The electricity distributors' licences, issued in accordance with section 20 of the *Electricity Industry Act 2000*, require that electricity distributors comply with all applicable provisions of the Codes.

The Commission may, under section 21 of the *Electricity Industry Act 2000*, amend the Codes.

## 2.3 WHY DO WE HAVE A GSL PAYMENTS SCHEME?

The provision of electricity distribution services is a natural monopoly. The revenues that can be earned by the electricity distributors for these services are therefore subject to an incentive-based economic regulatory regime. This regime gives the electricity distributors an incentive to reduce costs, which has the potential to affect service levels. The electricity distributors are therefore also subject to a service incentive regime to incentivise them to provide an economically efficient level of service.

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<sup>2</sup> Essential Services Commission Act 2001, section 8A

The service incentive regime comprises two elements:

- A **service incentive factor** that provides an incentive to deliver an economically efficient level of service by rewarding electricity distributors (through the price control) for improvements in their **average** performance relative to a target, and penalising them for deteriorations in the **average** performance. The rewards or penalties are paid or received by all customers through a reduction or increase in their distribution charges.
- A **GSL payments scheme** that makes payments directly to the worst served customers (in the case of reliability) and to those customers who do not receive a certain level of service (for example, not connecting customers by the agreed date).

The service incentive factor and the GSL payments scheme both provide an incentive for the electricity distributors to improve reliability. The service incentive factor encourages them to identify the least cost actions that will improve the average level of reliability. Reliability improvements for the worst served customers may not be prioritised under the service incentive factor. This may be because there are few customers on the feeder<sup>3</sup> and so any actions to improve reliability have an immaterial impact on the average reliability. Alternatively, there may be characteristics associated with that feeder which require relatively high cost actions to improve reliability.

The GSL payments scheme therefore provides an additional incentive for electricity distributors to improve the reliability for the worst served customers.

However, we recognise that it may not be efficient to improve the reliability for particular customers as the cost incurred to improve reliability for these customers is higher than the value of customer reliability.

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<sup>3</sup> A feeder is a powerline and associated equipment that an electricity distributor uses to distribute electricity to its customers.

## 2.4 RELATIONSHIP TO THE AER'S REVENUE DETERMINATION

The AER is currently determining the revenue that may be earned by the Victorian electricity distributors for the 2016-20 regulatory control period, which applies from 1 January 2016 to 31 December 2020. A Preliminary Determination was released by the AER on 29 October 2015, with a Substitute Determination expected to be released by the end of April 2016.

In making a revenue determination, the AER must:

- determine the operating expenditure that is forecast to be incurred during the regulatory control period
- consider the trade off between service level requirements and expenditure.

The forecast operating expenditure includes the payments that are expected to be made under the GSL payments scheme.

The electricity distributors have an incentive to at least maintain the level of performance so the GSL payments made do not exceed the forecast operating expenditure, and to improve performance, where it is economically efficient to do so, to reduce the GSL payments that are made.

The AER needs clarity on the GSL payments scheme that is to apply during the next regulatory control period, so that it can forecast the operating expenditure required by the electricity distributors. The Preliminary Determination is based on the current Victorian GSL payments scheme.

Any changes to the Victorian GSL payments scheme will take effect from 1 January 2016. The Substitute Determination that will be made by the end of April 2016 will consider the impact of any changes to the Victorian GSL payments scheme, with any adjustment required to the electricity distributors' revenues made over the 2017-20 period.

## 2.5 METHODOLOGY USED IN SETTING THE CURRENT GSL PAYMENTS SCHEME

In 2005, the Commission determined the current Victorian GSL payments scheme as part of the 2006-10 Electricity Distribution Price Determination. No changes were made to the Victorian GSL payments scheme in 2010 for the 2011-15 regulatory control period.

The parameters of the current Victorian GSL payments scheme are set out in Table 2.1. Each of the measures in the scheme is discussed in the following sections.

**TABLE 2.1 CURRENT VICTORIAN GSL PAYMENTS SCHEME PARAMETERS**

Measure	Threshold	Payment levels
Annual duration of unplanned interruptions	Level 1 – more than 20 hours	Level 1 - \$100
	Level 2 – more than 30 hours	Level 2 - \$150
	Level 3 – more than 60 hours	Level 3 - \$300
Annual frequency of unplanned sustained interruptions	Level 1 – more than 10	Level 1 - \$100
	Level 2 – more than 15	Level 2 - \$150
	Level 3 – more than 30	Level 3 - \$300
Annual frequency of momentary interruptions	Level 1 – more than 24	Level 1 - \$25
	Level 2 – more than 36	Level 2 - \$35
On time for appointments	More than 15 minutes late	\$20
New connections	Not by the date agreed	\$50 per day to a maximum of \$250
Public light repair	Not within 2 business days of notification	\$10

### 2.5.1 ANNUAL DURATION OF UNPLANNED INTERRUPTIONS

Prior to 2006, the electricity distributors were required to make GSL payments of \$80 to customers experiencing an interruption longer than 12 hours. The threshold was set on the basis of the reliability experienced by the worst served one per cent of customers.



In 2005, the Commission examined data on feeder performance data for the 2000-04 period. The Commission observed that there were very few interruptions longer than 12 hours and GSL payments were being made to far fewer than one per cent of customers. As stakeholders had expressed concern regarding the annual aggregate duration of interruptions, but not for individual interruptions shorter than 12 hours, the Commission replaced the long duration interruption measure with an annual duration of interruptions measure.

The threshold for the annual duration of interruptions measure was set at 20 hours so that GSL payments were made to approximately one per cent of the worst served customers, based on the feeder performance data for the 2000-04 period.

The Commission introduced a multi-level GSL payment (at 20, 30 and 60 hours) to reflect that the value of load not supplied increases as the duration of interruptions increases, and in response to concerns raised by stakeholders on outlier performance.

The Commission increased the payment level from \$80 to \$100 to enhance the incentive to improve reliability for those customers in pockets of poor reliability. The payment levels for the higher thresholds were set at \$150 and \$300. The Commission considered the value of customer reliability (VCR), as determined by the Australian Energy Market Operator (AEMO), to inform the payment levels while ensuring that, for most customers, the payment levels did not exceed the amount that a customer pays for distribution services.

## **2.5.2 ANNUAL FREQUENCY OF UNPLANNED SUSTAINED INTERRUPTIONS**

Prior to 2006, the electricity distributors were required to make GSL payments of \$80 to urban customers experiencing more than 9 sustained interruptions in a year, and to rural customers experiencing more than 15 sustained interruptions in a year. The thresholds were set on the basis of the reliability experienced by the worst served one per cent of customers.

In 2005, the Commission examined data on feeder performance data for the 2000-04 period. The Commission observed that GSL payments were made to far fewer than one per cent of customers.

Stakeholders commented that the same thresholds should apply to both urban and rural customers. As the proposed threshold was similar to the threshold that applied to urban customers during the 2001-05 period, the Commission applied the same threshold for the annual frequency of interruptions to all customers so that GSL payments would be made to approximately one per cent of the worst served customers, based on the feeder performance data for the 2000-04 period. The Commission reduced the threshold from 15 interruptions per year for rural customers to 10 interruptions per year for all customers.

For the same reasons as for the annual duration of interruptions measure, the Commission introduced a multi-level GSL payment (10, 15 and 30 interruptions) with the same payment levels (\$100, \$150 and \$300).

### **2.5.3 ANNUAL FREQUENCY OF MOMENTARY INTERRUPTIONS**

Prior to 2006, the GSL payments scheme did not include the annual frequency of momentary interruptions as there was insufficient data.

In 2005, the Commission considered that there was sufficient data to introduce a GSL payment for the annual frequency of momentary interruptions. The thresholds were set at 24 and 36 momentary interruptions to capture the one per cent of worst served customers.

The payment levels were set at \$25 and \$35 on the basis that the value a customer places on a sustained interruption is approximately nine times the value placed on a momentary interruption.<sup>4</sup>

### **2.5.4 OTHER GSL PAYMENTS SCHEME MEASURES**

Since the establishment of an independent regulatory regime in the mid 1990s, electricity distributors have been required to make payments to customers for:

- not being on time for an appointment

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<sup>4</sup> Essential Services Commission, *Electricity Distribution Price Review 2006-10, Final Decision Volume 1: Statement of Purpose and Reasons*, October 2005, page 107

- not connecting the customer on the agreed date
- not repairing public lights within two business days, when first notified by a neighbouring residence or business.

In 2005, the Commission maintained the GSL payments for not being on time for an appointment (\$20), not connecting the customer on the agreed date (\$50 per day to a maximum of \$250), and not repairing public lights within two business days (\$10). No stakeholders proposed an increase in the payment level for appointments or connections. Some stakeholders advocated for an increase in the payment level for public lighting, but this was not supported by the Commission as it considered that the market for public lighting was transitioning to a more contestable market.

## **2.6 NATIONAL GSL PAYMENTS SCHEME**

The AER's Service Target Performance Incentive Scheme includes a GSL payments scheme that is applied in those jurisdictions that do not have a jurisdictional GSL payments scheme. The national GSL payments scheme, which was developed based on the GSL payments schemes in each of the jurisdictions, is compared to the Victorian GSL payments scheme in Table 2.2.

**TABLE 2.2 NATIONAL GSL PAYMENTS SCHEME PARAMETERS**

<b>Measure</b>	<b>National GSL payments scheme</b>	<b>Comparison to the Victorian GSL payments scheme</b>
Annual duration of unplanned interruptions	Level 1 – more than 20 hours (\$100) Level 2 – more than 30 hours (\$150) Level 3 – more than 60 hours (\$300)	Same as the current Victorian scheme that has applied since 2006
Duration of interruption	CBD and urban feeders – more than 12 hours (\$80) Rural feeders – more than 18 hours (\$80)	Similar to the Victorian scheme that applied during the 2001-05 period
Annual frequency of unplanned sustained interruptions	CBD and urban feeders – more than 9 interruptions (\$80) Rural feeders – more than 15 interruptions (\$80)	Same as the Victorian scheme that applied during the 2001-05 period
Annual frequency of momentary interruptions	Not applicable	Included in the Victorian scheme from 2006
Notice of planned interruptions	Not within 4 business days of planned interruption (\$50)	Not included in the Victorian scheme
On time for appointments	Not applicable	Included in the Victorian scheme
New connections	Not by the date agreed (\$50 per day to a maximum of \$300)	The daily payment level is the same, but the maximum payment is \$50 higher than in the current Victorian scheme
Public light repair	Not within 5 business days of notification (\$25)	The threshold is lower in the Victorian scheme (2 business days) and the payment level is lower (\$10)

# 3 CURRENT SERVICE LEVELS

The majority of Victorian electricity customers receive a reliable supply of electricity. However, a small number of customers continue to experience a much larger number of interruptions or a longer period off supply than most customers.

The GSL payments scheme has been designed so that reliability-based payments are made to approximately one per cent of the worst served customers. Over the 2010-14 period, the electricity distributors made GSL payments to more than one per cent of customers that experienced more than 20 hours off supply in a year, to less than one per cent of customers that experienced more than 10 unplanned sustained interruptions in a year, and to approximately one per cent of customers that experienced more than 24 momentary interruptions in a year.

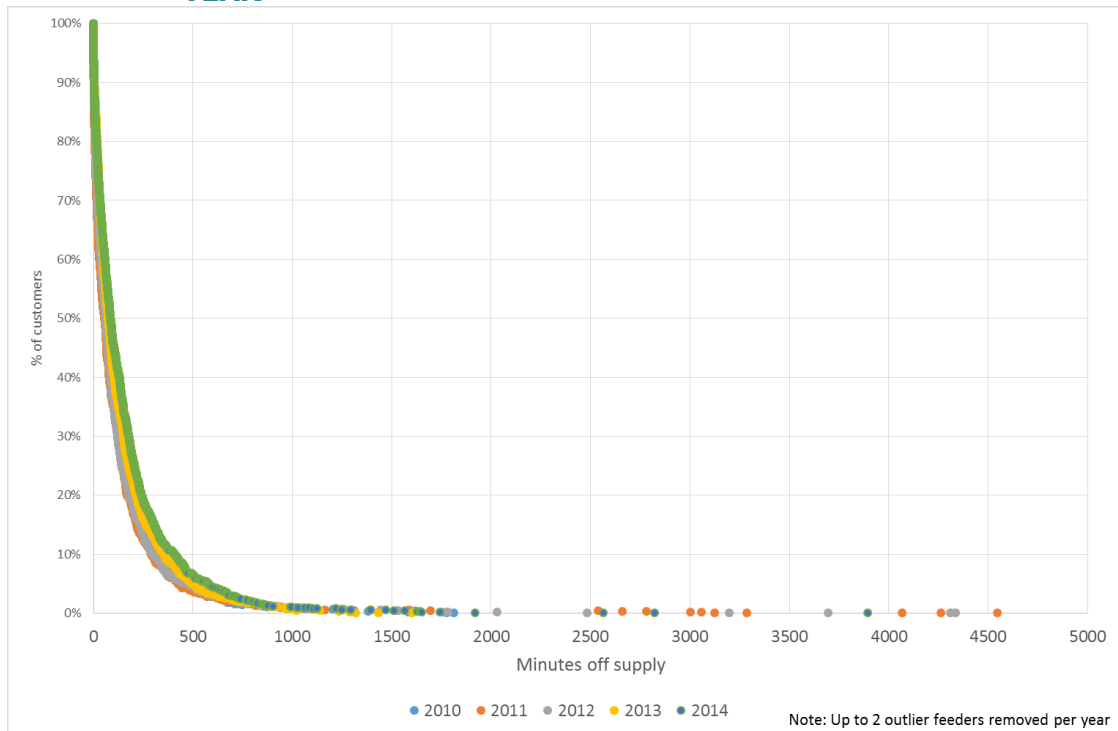
A small number of GSL payments were also made to customers where the electricity distributor was not on time for appointment, did not connect the customer by the agreed date, or did not repair a public light within two business days.

To enable the Commission to review the Victorian GSL payments scheme, the five Victorian electricity distributors provided feeder performance data and the number of GSL payments that were made, over the 2010-14 period. The data that was provided by the electricity distributors is summarised in this chapter.

## 3.1 DURATION OF UNPLANNED INTERRUPTIONS

The average duration of interruptions on each feeder for each year during the 2010-14 period, with no interruptions excluded, is illustrated in Figure 3.1. Figure 3.2 provides the same information for the worst served 10 per cent of customers. The performance for each customer on a feeder will vary around the average for that feeder.

**FIGURE 3.1 MINUTES OFF SUPPLY, ALL CUSTOMERS, NO EXCLUSIONS, BY YEAR**



**FIGURE 3.2 MINUTES OFF SUPPLY, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, BY YEAR**

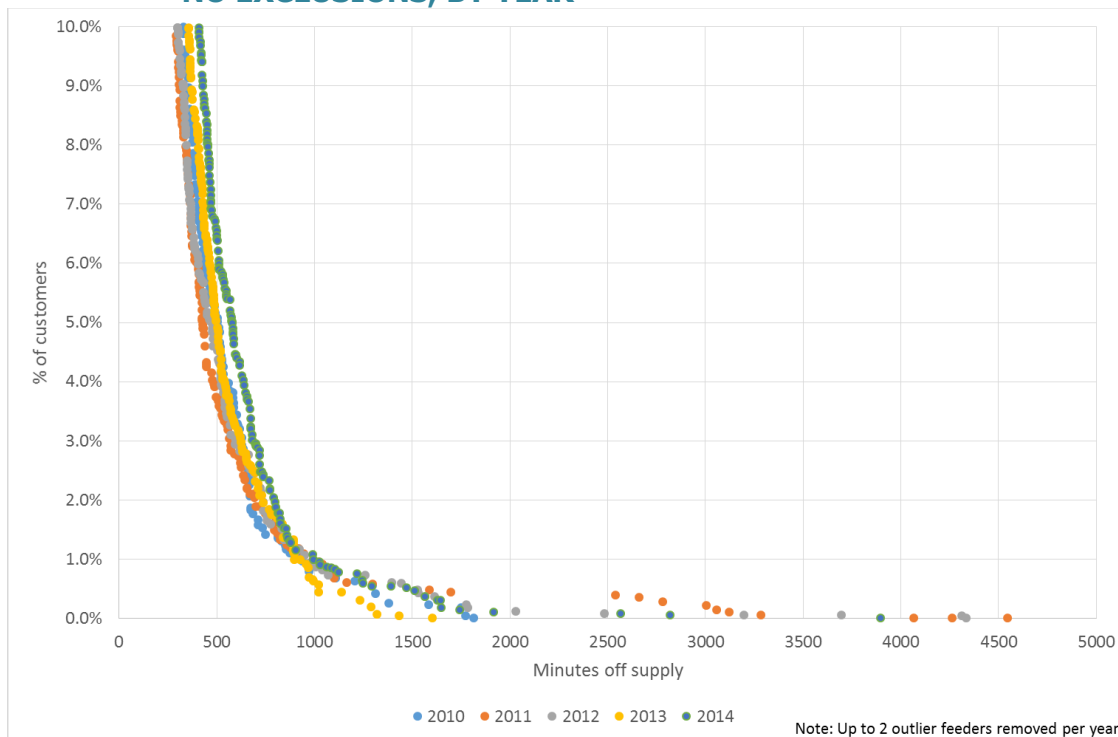
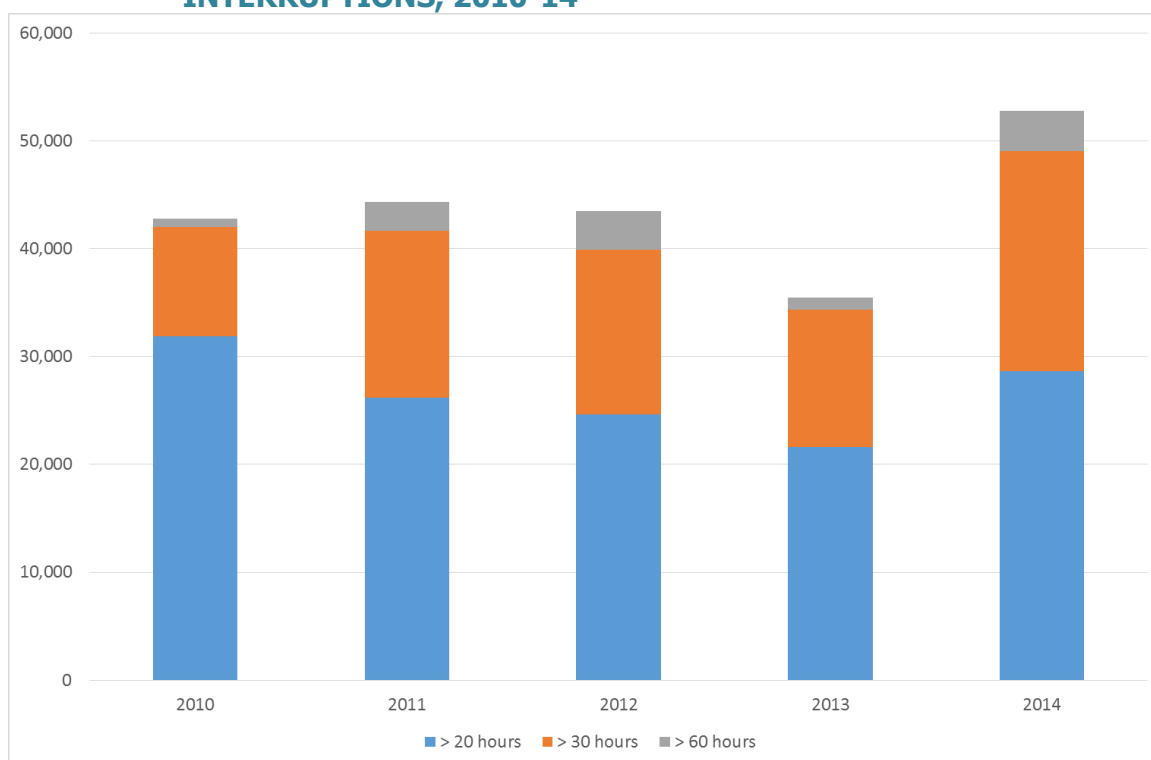


Figure 3.1 and Figure 3.2 indicate that the majority of customers experience less than 16 hours (960 minutes) off supply per year, but there is a long tail of customers experiencing significantly longer periods off supply. The existence of a “long tail” would indicate that there continue to be areas where it is not economically efficient to reduce the minutes off supply.

Figure 3.3 provides the number of customers that have been paid a GSL based on the duration of interruptions experienced during the year. Figure 3.3 indicates that GSL payments are currently being paid to more than one per cent of customers<sup>5</sup> (and fewer than two per cent of customers).

**FIGURE 3.3 NUMBER OF GSL PAYMENTS MADE, ANNUAL DURATION OF INTERRUPTIONS, 2010-14**

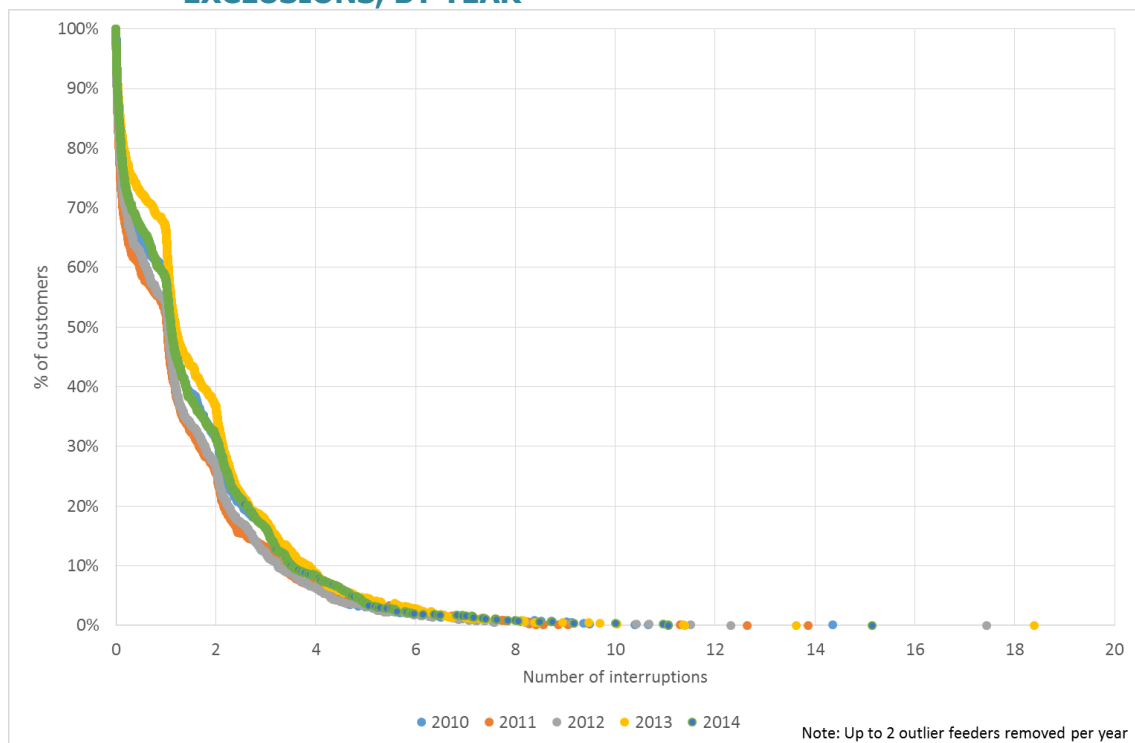


<sup>5</sup> There are currently around 2.7 million Victorian electricity distribution customers.

## 3.2 FREQUENCY OF UNPLANNED SUSTAINED INTERRUPTIONS

The average number of unplanned sustained interruptions on each feeder for each year during the 2010-14 period, with no interruptions excluded, is illustrated in Figure 3.4. Figure 3.5 provides the same information for the worst served 10 per cent of customers. The performance for each customer on a feeder will vary around the average for that feeder.

**FIGURE 3.4 NUMBER OF INTERRUPTIONS, ALL CUSTOMERS, NO EXCLUSIONS, BY YEAR**





**FIGURE 3.5 NUMBER OF INTERRUPTIONS, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, BY YEAR**

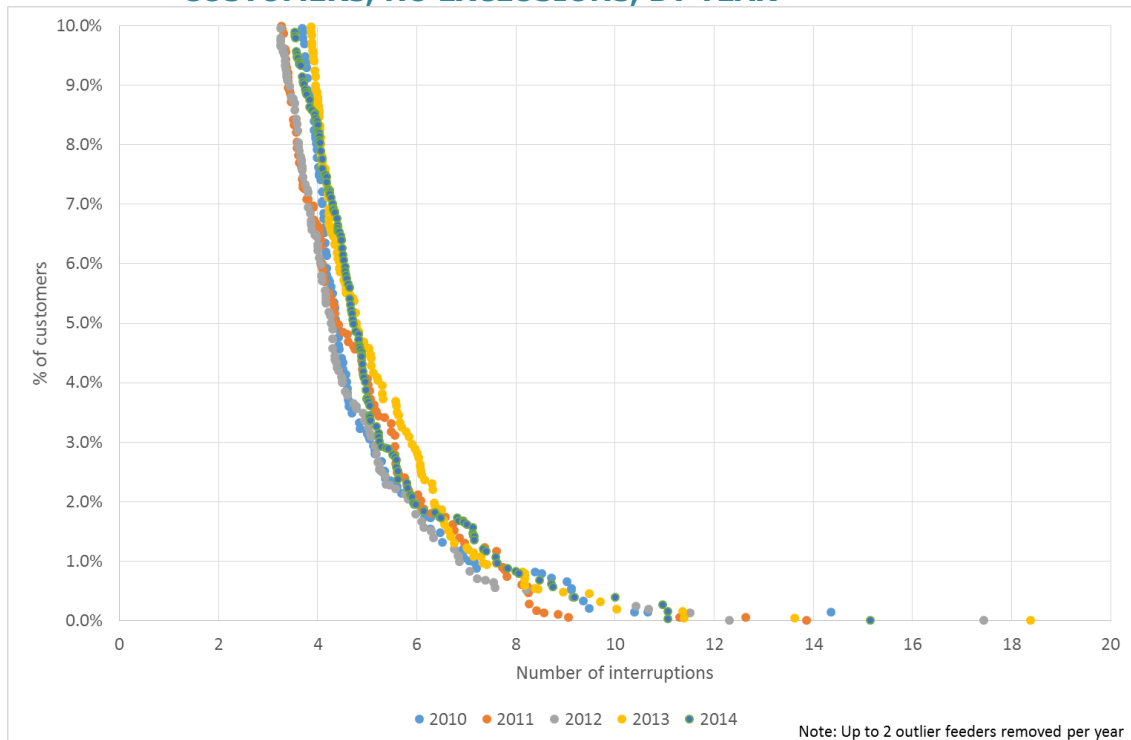
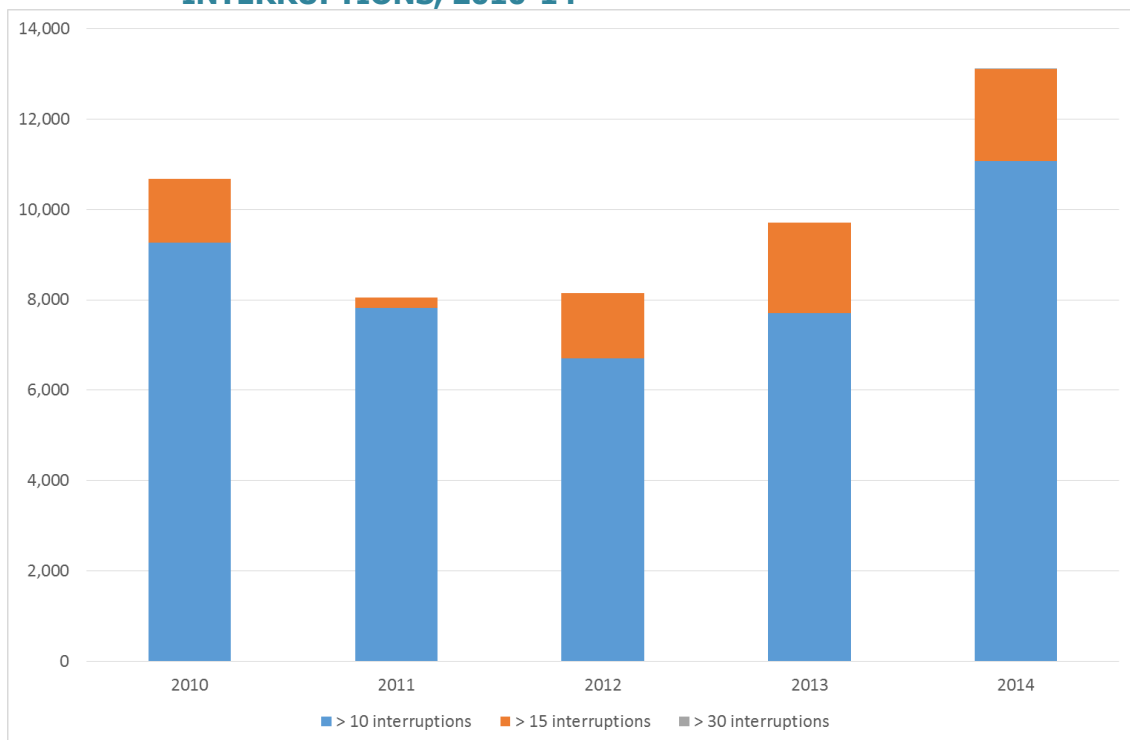


Figure 3.4 and Figure 3.5 indicate that the majority of customers experience fewer than 6 sustained interruptions per year, but there is a long tail of customers experiencing significantly more sustained interruptions. The existence of a “long tail” would indicate that there continue to be areas where it is not economically efficient to reduce the number of sustained interruptions.

Figure 3.6 provides the number of customers that have been paid a GSL based on the number of sustained interruptions experienced during the year. Figure 3.6 indicates that GSL payments are being paid to fewer than one per cent of customers (and fewer than 0.5 per cent of customers).

**FIGURE 3.6 NUMBER OF GSL PAYMENTS MADE, ANNUAL NUMBER OF INTERRUPTIONS, 2010-14**

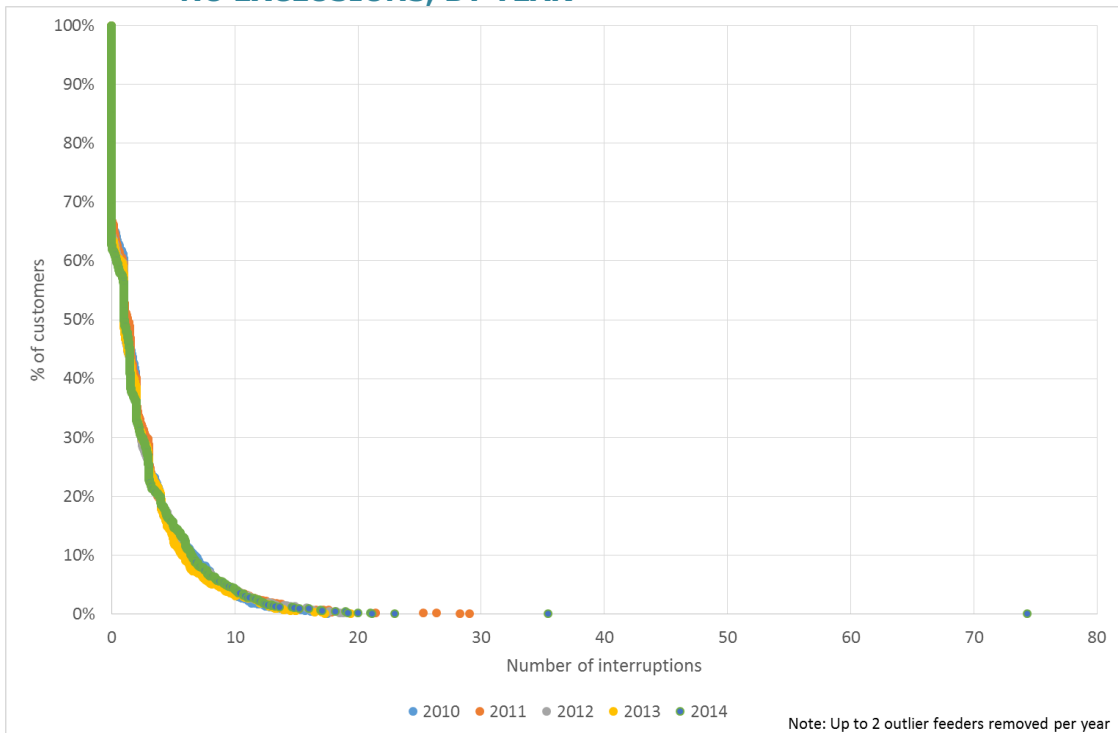


### 3.3 FREQUENCY OF MOMENTARY INTERRUPTIONS

The average number of momentary interruptions on each feeder for each year during the 2010-14 period, with no interruptions excluded, is illustrated in Figure 3.7.

Figure 3.8 provides the same information for the worst served 10 per cent of customers. The performance for each customer on a feeder will vary around the average for that feeder.

**FIGURE 3.7 NUMBER OF MOMENTARY INTERRUPTIONS, ALL CUSTOMERS, NO EXCLUSIONS, BY YEAR**



**FIGURE 3.8 NUMBER OF MOMENTARY INTERRUPTIONS, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, BY YEAR**

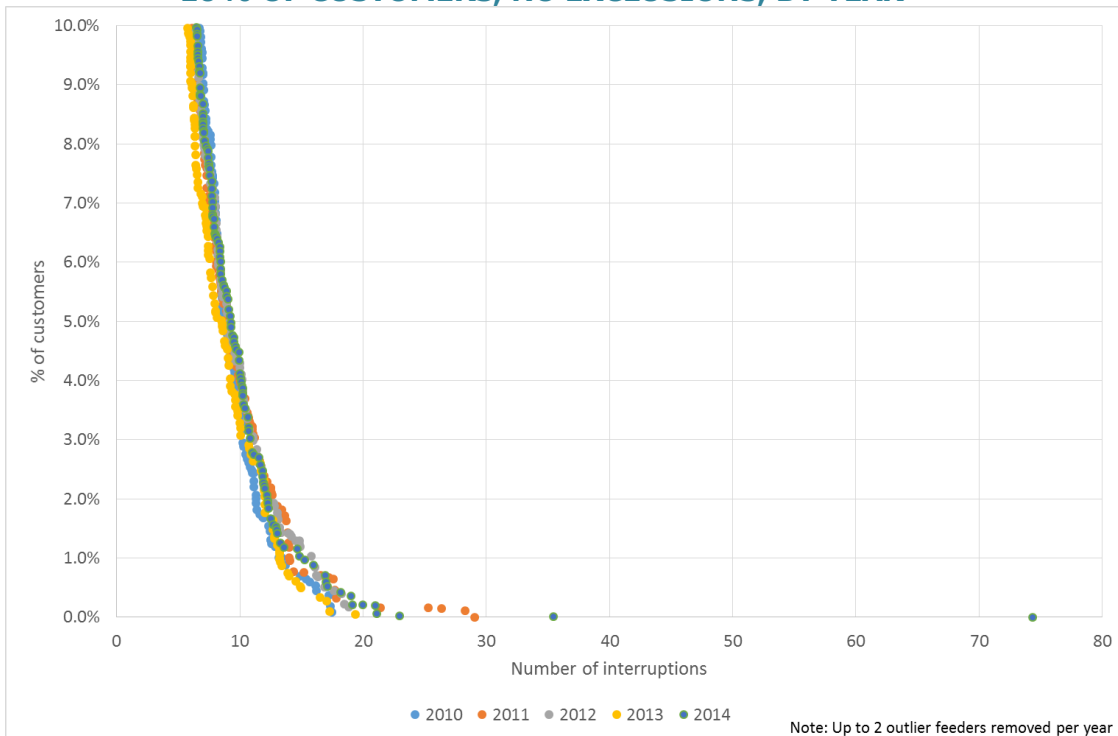
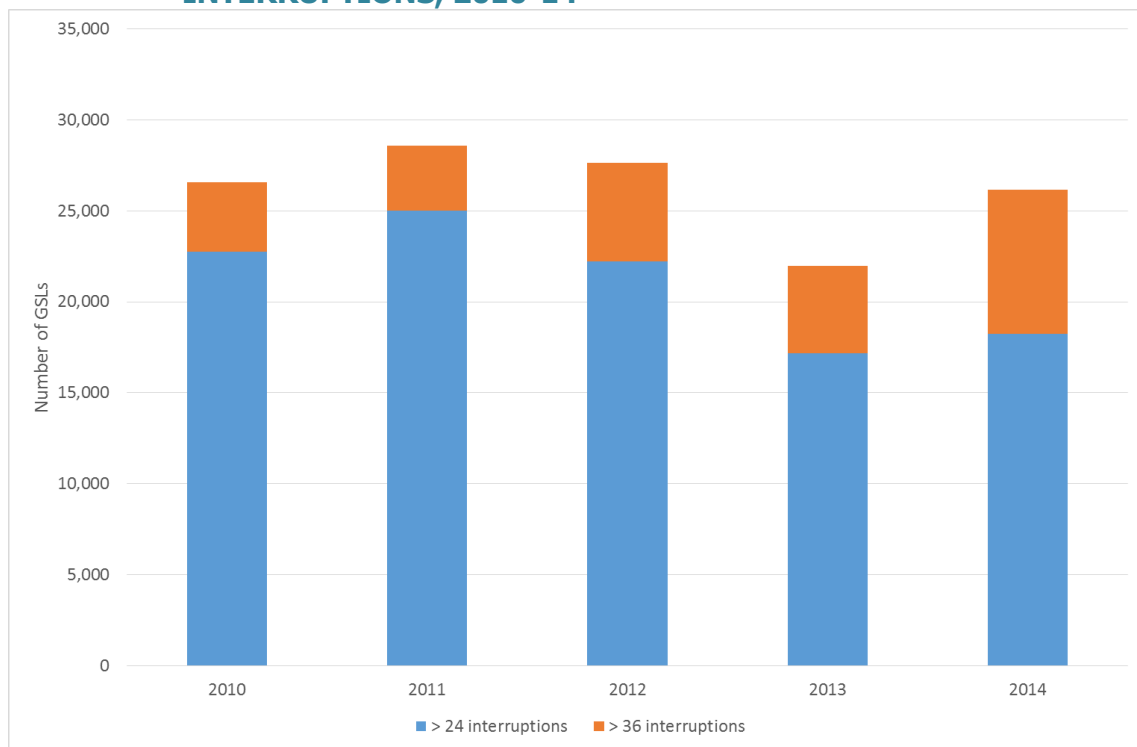


Figure 3.7 and Figure 3.8 indicate that the majority of customers experience fewer than 15 momentary interruptions per year, but there is a long tail of customers experiencing significantly more momentary interruptions. The existence of a “long tail” would indicate that there continue to be areas where it is not economically efficient to reduce the number of momentary interruptions.

The number of GSL payments that have been made over the last five years for a high number of momentary interruptions is provided in Figure 3.9, which indicates that GSL payments for momentary interruptions have been made to around one per cent of customers.

**FIGURE 3.9 NUMBER OF GSL PAYMENTS MADE, MOMENTARY INTERRUPTIONS, 2010-14**



### 3.4 ON TIME FOR APPOINTMENTS

The number of GSL payments that have been made for not being on time for appointments is illustrated in Figure 3.10.

**FIGURE 3.10 NUMBER OF GSL PAYMENTS MADE, NOT BEING ON TIME FOR AN APPOINTMENT, 2010-14**

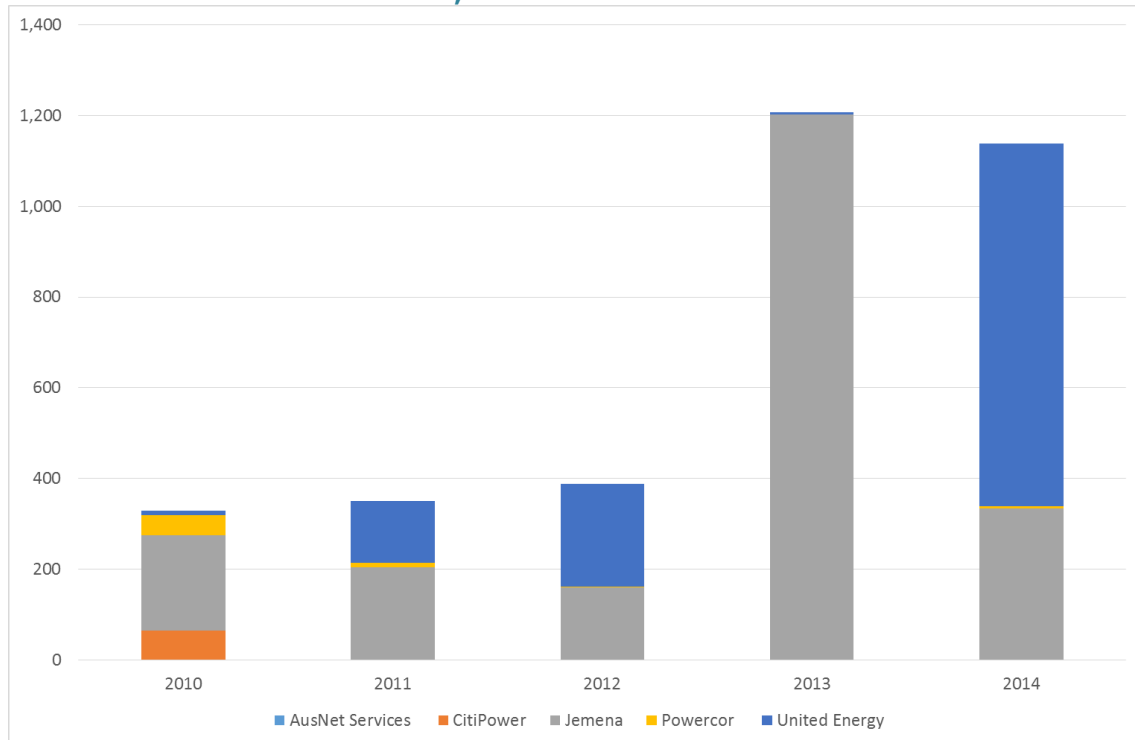


Figure 3.10 indicates that the number of GSL payments that have been made for not being on time for appointments has historically been low but increased significantly in 2013 and 2014. This increase is attributable to Jemena, in 2013, and United Energy, in 2014. The number of appointments made by Jemena increased significantly in 2013 due to the Advanced Metering Infrastructure (AMI) program. United Energy made payments in 2014 relating to appointments in the previous year.

By contrast, CitiPower and Powercor also had a high number of appointment times not being met due to the AMI program, but did not make GSL payments to their customers. The Commission will examine whether CitiPower and Powercor have been in breach of their obligation to make GSL payments under the Electricity Distribution Code.

### 3.5 NEW CONNECTIONS

The number of GSLs payments made over the 2010-14 period for not connecting customers by the agreed date is provided in Figure 3.11, which indicates that the number of payments has varied over the period, but declined from 2011 to 2014.

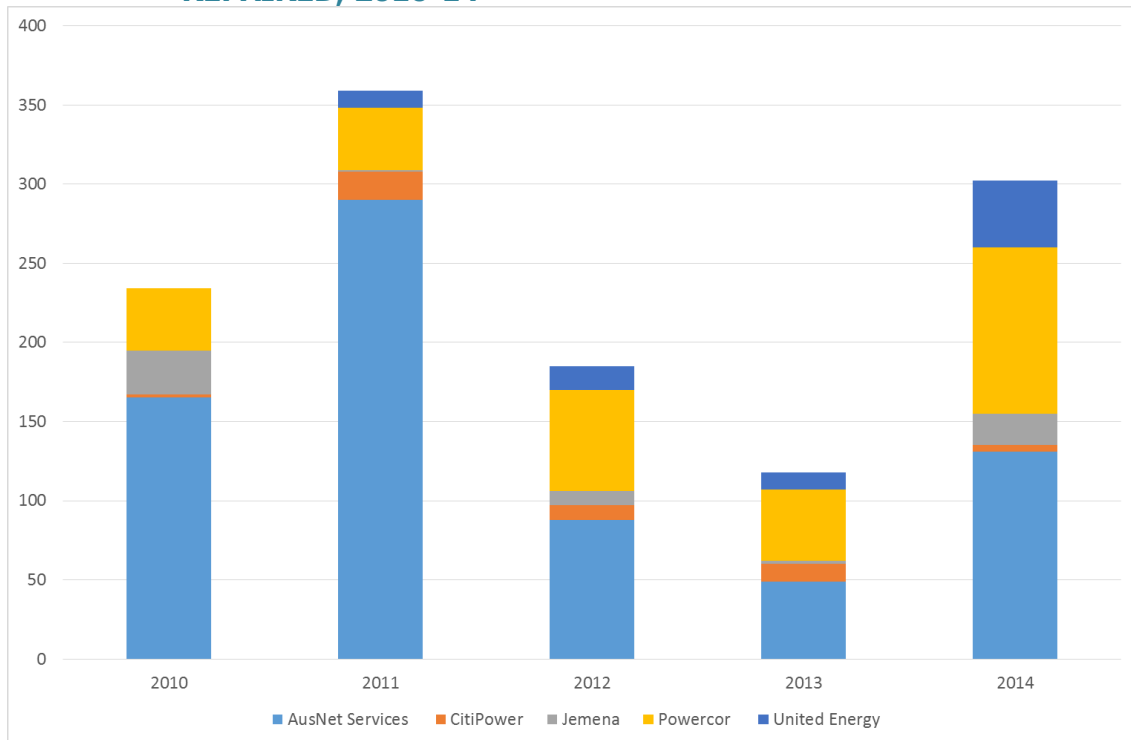
**FIGURE 3.11 NUMBER OF GSLs PAYMENTS MADE, CONNECTIONS NOT MADE BY AGREED DATE, 2010-14**



### 3.6 PUBLIC LIGHTING REPAIRS

The number of GSL payments made over the 2010-14 period for not repairing public lights on time is illustrated in Figure 3.12, which indicates that the number of payments has varied from year to year, largely due to variations in the number of payments made by United Energy.

**FIGURE 3.12 NUMBER OF GSLS PAYMENTS MADE – PUBLIC LIGHTS NOT REPAIRED, 2010-14**



## 4 PROPOSED GSLS FOR THE NEXT REGULATORY CONTROL PERIOD

The Commission has reviewed the Victorian GSL payments scheme through consideration of the following strategic issues:

- whether the appropriate measures are included in the GSL payments scheme
- whether the thresholds or levels of the GSL payments scheme measures are appropriate
- whether the payment levels for the GSL payments scheme measures are appropriate
- whether the criteria for excluding interruptions from the reliability-based GSL payments scheme measures are appropriate.

The Commission proposes that the GSL payments scheme for the 2016-20 regulatory control period requires the electricity distributors to make payments of:

- \$120, \$180 or \$360 where the customer experiences more than 20 hours, 30 hours or 60 hours of unplanned interruptions in a year
- \$80 where a customer experiences an unplanned interruption of more than 12 hours if supplied by a CBD or urban feeder, or more than 18 hours if supplied by a rural feeder
- \$120, \$180 or \$360 where the customer experiences more than 8, 12 or 24 unplanned sustained interruptions in a year
- \$30 or \$40 where a customer experiences more than 24 or 36 momentary interruptions in a year
- \$30 where an electricity distributor is more than 15 minutes late for an appointment
- \$70 per day up to a maximum of \$350 where a customer is not connected by the



agreed date

- \$25 where a neighbouring customer notifies that a public light, which is a distributor-owned public lighting asset, is faulty and it is not repaired within 2 business days.

The strategic issues identified with the Victorian GSL payments scheme are considered in this chapter. Section 4.1 considers whether the appropriate measures are included in the GSL payments scheme, section 4.2 considers whether the thresholds or levels of the GSL payments scheme are appropriate, section 4.3 considers whether the payment levels for each of the GSL payment scheme measures are appropriate and section 4.4 considers whether the criteria for excluding interruptions from the reliability-based GSL payment scheme measures are appropriate. The estimated impact of the proposed changes to the Victorian GSL payments scheme is provided in section 4.5.

In considering each of these strategic issues, the Commission considered the following options:

1. maintain the Victorian GSL payments scheme arrangement
2. adopt the national GSL payments scheme arrangement
3. modify the Victorian GSL payments scheme arrangement.

The Commission has considered the advantages and disadvantages of each of these options, having regard to its objectives, including the new objective to 'promote protections for customers'.

## **4.1 ARE THE MEASURES INCLUDED IN THE GSL PAYMENTS SCHEME APPROPRIATE?**

The measures that are included in the Victorian and national GSL payments schemes are compared in Table 2.2.

The Victorian GSL payments scheme includes two measures that are not included in the national scheme:

- the frequency of momentary interruptions

- on time for appointments.

The national scheme includes two measures that are not included in the Victorian GSL payments scheme:

- duration of individual interruptions
- notice of planned interruptions.

Each of these measures is considered in the following sections to assess whether there should be greater alignment between the Victorian and national GSL payments schemes.

In addition, two types of measures were considered in 2005 but not included in the GSL payments scheme – measures related to quality of supply and metering. These types of measures are also discussed.

#### **4.1.1 FREQUENCY OF MOMENTARY INTERRUPTIONS**

In 2005, the Commission included the frequency of momentary interruptions in the Victorian GSL payments scheme, following the establishment of “reliable and comprehensive measurement of momentary interruptions in the course of the 2001-05 period”<sup>6</sup> and in response to complaints from stakeholders about the number of momentary interruptions.

The Commission also recognised the trade off between the frequency of sustained and momentary interruptions – the number of sustained interruptions was decreasing with the installation of automatic circuit reclosers, which may increase the number of momentary interruptions.

The frequency of momentary interruptions is not included in the national GSL payments scheme as historical information on momentary interruptions was not available in some jurisdictions when the AER designed the national scheme.

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<sup>6</sup> Office of the Regulator-General, *Electricity Distribution Price Determination 2001-05, Volume 1: Statement of Purpose and Reasons*, September 2000, page 13

We propose that the frequency of momentary interruptions be retained in the Victorian GSL payments scheme as Victorian electricity distributors have been making GSL payments based on momentary interruptions for ten years, stakeholders have previously supported the inclusion of momentary interruptions in the GSL payments scheme, and the measure is included in the Victorian electricity distributors' service incentive factor.

#### 4.1.2 ON TIME FOR APPOINTMENTS

Victorian electricity distributors have been required to make GSL payments to customers when they are late for appointments since the establishment of the independent regulatory regime in the mid 1990s.

GSL payments for being late for appointments are not included in the national scheme as<sup>7</sup>:

*The AER considers that an 'appointment window' parameter would not be a robust parameter as it is difficult to measure and, for actual performance to be measured, relies on customers lodging complaints. The AER also notes that [Distribution Network Service Providers] DNSPs have incentives to maintain appointment times under jurisdictional Ombudsman schemes.*

Victorian electricity distributors measure whether they are on time for appointments, with more accurate measurement enabled by their investment in mobile technology.

Figure 3.10 indicates that there has been an increase in the number of GSL payments made where Victorian electricity distributors have been late for an appointment. This would indicate that the incentives under the jurisdictional Ombudsman scheme are not strong enough for the electricity distributors to maintain appointment times.

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<sup>7</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme, Final decision*, June 2008, page 26

There can be a significant cost for consumers when electricity distributors are late for an appointment. We therefore propose to retain the GSL payment for being late for appointments.

### 4.1.3 DURATION OF AN INDIVIDUAL INTERRUPTION

The AER used the various jurisdictional GSL payments schemes as the basis for developing the national GSL payments scheme. GSL payments were made on the duration of individual interruptions in some jurisdictions<sup>8</sup>, and on the annual duration of interruptions in others<sup>9</sup>. The AER included both of these measures in the national GSL payments scheme.

In 2005, the Commission changed the Victorian GSL payments scheme from payments based on the duration of an individual interruption to payments based on the annual duration of interruptions. The change was made as there were very few interruptions longer than 12 hours and therefore the Commission considered it more appropriate to consider the annual duration of interruptions rather than the duration of individual interruptions.

The data provided by the electricity distributors for the 2010-14 period indicates that there continue to be very few long interruptions. If the duration of an individual interruption is included in the GSL payments scheme to align with the national scheme, there are likely to be few payments made.

Nonetheless, we propose to include the duration of interruptions in the Victorian GSL payments scheme – it provides a stronger incentive to the electricity distributors to avoid long interruptions and aligns the Victorian GSL payments scheme with the national GSL payments scheme. As very few payments are likely to be made, the cost impact is immaterial.

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<sup>8</sup> Queensland, New South Wales and Tasmania

<sup>9</sup> New South Wales and Victoria

#### 4.1.4 NOTICE OF A PLANNED INTERRUPTION

The Electricity Distribution Code (section 5.5.1) currently requires that the electricity distributors provide four business days' notice of planned interruptions.

The electricity distributors are required to make a GSL payment where less than four business days' notice is provided of a planned interruption.

In its 2006-10 Electricity Distribution Price Determination, the Commission decided not to introduce a GSL payment for providing inadequate notice of a planned interruption.

*This is because firstly, customers do not appear to have a consistent view as to an appropriate notice period for planned interruptions; secondly, the customer's concern relates to receiving the notice rather than the distributor giving the notice, and this is difficult to measure; and thirdly, it has not been demonstrated that customers would value the introduction of this GSL payment.<sup>10</sup>*

While some customers prefer a long notice period of a planned interruption (up to two weeks) to enable them to prepare for the planned interruption, others prefer a shorter notice period (one or two days) so that they don't forget that there will be a planned interruption. The electricity distributors therefore need to be innovative to best meet their customers' needs on the timeframe and form of notice for planned interruptions. A penalty on the timeframe for providing notice may deter such innovation.

We therefore do not propose to introduce a GSL payments scheme measure based on the notice period for a planned interruption.

#### 4.1.5 QUALITY OF SUPPLY

Customers experience a poor quality of supply when they experience voltage surges or dips, where the voltage level supplied to the customer does not meet the required standards as set out in the Electricity Distribution Code.

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<sup>10</sup> Essential Services Commission, *Electricity Distribution Price Determination 2006-10, Volume 1: Statement of Purpose and Reasons*, October 2005, page 114

During 2005, the Commission considered whether to include a quality of supply measure in the Victorian GSL payments scheme. It concluded that the introduction of such a measure was infeasible as there was voltage monitoring on only a sample of feeders, rather than on all feeders, but flagged that the next review would consider introducing such a measure.

In designing the national scheme, the AER agreed that there are no direct measures of supply quality suitable for a service incentive scheme. However, it noted that:<sup>11</sup>

*... the need to measure quality of supply is increasing, as the dependence on electricity devices affected acutely by supply quality increases and customers' expectations for consistent quality of supply grows.*

The electricity distributors have now installed smart meters for most Victorian electricity customers. The functionality specification for smart meters requires that they be capable of recording undervoltage and overvoltage events.<sup>12</sup> All events of a period longer than a time setting are required to be able to be recorded.

The Electricity Distribution Code specifies the permitted voltage range to be 230V +10% and -6%, with a larger fluctuation permitted for periods less than 1 minute or less than 10 seconds.

The Commission currently has no quality of supply data on which to base the introduction of a GSL payments scheme measure. However, if the Commission introduced a requirement for the electricity distributors to collect and report on the number of events experienced by each customer where the undervoltage or overvoltage limits were exceeded for more than a minute, then quality of supply measures could be introduced into the GSL payments scheme for the 2021-25 regulatory control period.

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<sup>11</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme, Final decision*, June 2008, page 18

<sup>12</sup> AMI Functionality Specification, clause 3.8.2

The electricity distributors will incur costs measuring and recording quality of supply data. However, they are now required to be able to record the data in smart meters installed throughout the majority of Victoria

Consistent with our previous decisions we therefore propose to amend the Electricity Distribution Code to require electricity distributors to measure and record quality of supply data for those customers with a smart meter installed.

#### **4.1.6 METERING**

In 2005, the Commission considered including two metering-related measures in the Victorian GSL payments scheme, where:

- a special meter read is not undertaken on the scheduled read date for reasons within the control of the distributor
- a customer requests that a meter be tested and it fails the meter test.

With smart meters installed, special meter reads are now generally done remotely. There is therefore no strong rationale for introducing a measure for special meter reads.

In 2005, the Commission decided not to introduce a GSL payment where a meter failed a customer-requested test, as few meters fail such tests, the cost of the meter test is waived when a meter fails, and there is little effective action a distributor can take to reduce the number of failed meter tests.

With smart meters installed, metering data is collected daily and therefore customers are less likely to request a test of a meter that subsequently fails the test.

We therefore do not propose to introduce a metering-related measure into the Victorian GSL payments scheme.

#### 4.1.7 CONCLUSION

We propose to include the measures as set out in Table 4.1 in the Victorian GSL payments scheme for the 2016-20 regulatory control period.

**TABLE 4.1 PROPOSED VICTORIAN GSL PAYMENTS SCHEME MEASURES FOR THE 2016-20 REGULATORY CONTROL PERIOD**

<b>Measure</b>	<b>Change from current scheme</b>
Annual duration of unplanned interruptions	Retained
Duration of interruption	New – align with national GSL payments scheme
Annual frequency of unplanned sustained interruptions	Retained
Annual frequency of momentary interruptions	Retained
On time for appointments	Retained
New connections	Retained
Public light repair	Retained

#### 4.2 ARE THE THRESHOLDS OR LEVELS OF THE GSL PAYMENTS SCHEME MEASURES APPROPRIATE?

The thresholds or levels for each of the measures that are currently, or are proposed to be, included in the Victorian GSL payments scheme are provided in Table 4.2.

Table 4.2 compares the thresholds and levels for the Victorian and national GSL payments schemes and notes the factors that need to be considered in assessing whether the thresholds should be changed for the 2016-20 regulatory control period.



**TABLE 4.2 THRESHOLDS FOR GSL PAYMENTS SCHEME MEASURES**

Measure	Victorian scheme	National scheme	Factors to be considered
Annual duration of unplanned interruptions			<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> <li>• Impact of the Powerline Bushfire Safety Program (PBSP)</li> </ul>
Level 1	> 20 hours	> 20 hours	
Level 2	> 30 hours	> 30 hours	
Level 3	> 60 hours	> 60 hours	
Duration of interruption	N/A	CBD and urban feeders – 12 hours Rural feeders – 18 hours	<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> </ul>
Annual frequency of unplanned sustained interruptions		CBD and urban feeders –	<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> <li>• Impact of the PBSP</li> </ul>
Level 1	> 10 interruptions	9 interruptions	
Level 2	> 15 interruptions	Rural feeders –	
Level 3	> 30 interruptions	15 interruptions	
Annual frequency of momentary interruptions			<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> <li>• Impact of the PBSP</li> </ul>
Level 1	> 24 interruptions	N/A	
Level 2	> 36 interruptions		
On time for appointments	> 15 minutes late	N/A	<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> </ul>
New connections	Not connected on date agreed	Not connected on date agreed	<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> </ul>
Public light repair	Within 2 business days	Within 5 business days	<ul style="list-style-type: none"> <li>• Performance over the last 5 years</li> </ul>

The thresholds for each of the proposed GSL payments scheme measures are discussed in the following sections.

#### 4.2.1 ANNUAL DURATION OF UNPLANNED INTERRUPTIONS

In 2000 and 2005, the principle applied by the Commission in determining the threshold levels for reliability-based measures was that GSL payments should be made to the worst served one per cent of customers (the “one per cent” principle). This principle was determined based on the distribution of the reliability experienced by customers –

while the large majority of customers experience reasonably good reliability, a small proportion of customers (approximately one per cent) experience significantly worse reliability, with a “long tail” in the distribution.

In 2005, the Commission established the thresholds for the annual duration of unplanned interruptions by applying this principle, with increasing levels of payments as the time off supply increased (20 hours, 30 hours and 60 hours). The same thresholds were adopted in the national GSL payments scheme.

In assessing the threshold for the 2016-20 regulatory control period, we could continue to apply the “one per cent” principle. Alternatively, we could reduce the number of GSL payments by making payments to a smaller proportion of customers.

As illustrated in the distribution of the minutes off supply (Figure 3.1 and Figure 3.2), approximately one per cent of customers continue to experience significantly longer periods off supply than other customers. It is not economically efficient to reduce the minutes off supply for these customers. We therefore propose that the “one per cent” principle continue to apply.

Figure 3.1 and Figure 3.2 indicate that the threshold for the measure needs to decrease below 20 hours if GSL payments are paid to the worst served one per cent of customers. However, Figure 3.3 indicates that GSL payments are currently being paid to more than one per cent of customers (and fewer than 2 per cent of customers). This is likely to be because Figure 3.1 and Figure 3.2 are based on the average duration of interruptions per feeder rather than the duration of interruptions experienced by each customer. Some of the customers on each feeder will be experiencing better reliability than the average and others will be experiencing worse reliability than the average.

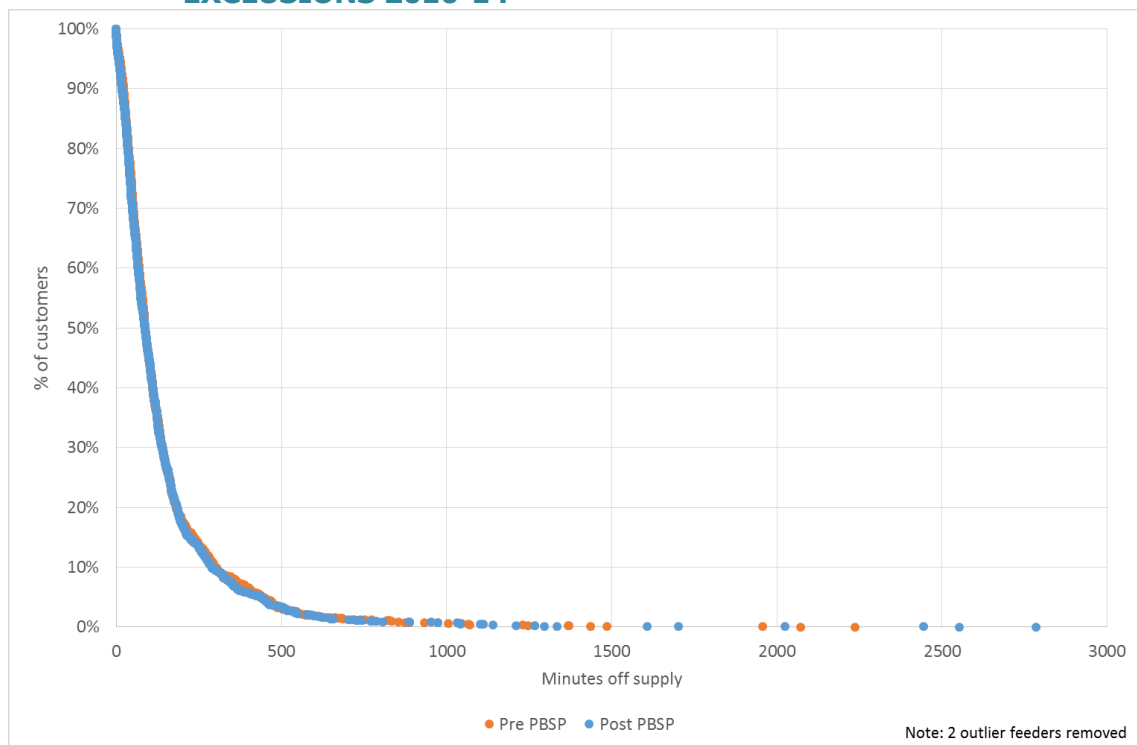
Following the 2009 Black Saturday bushfires, the Victorian Government, through the PBSP has funded the replacement of powerlines in the most dangerous areas of the state. It is proposing to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to require certain powerlines to be put underground or insulated at the end of their lives, and to enhance the network protection of polyphase powerlines with the installation of Rapid Earth Fault Current Limiters.

These measures are expected to improve the reliability experienced by those customers supplied by powerlines that have been replaced or supplied by polyphase

powerlines connected to a zone substation with a Rapid Earth Current Limiter installed. Based on information provided by the Department of Economic Development, Jobs, Transport and Resources (the Department), we estimate that powerline replacement will reduce the duration of interruptions on those powerlines replaced by 50 per cent and enhanced network protection for polyphase powerlines will reduce the duration of interruptions on those powerlines by 30 per cent for phase to earth faults.

The impact of these measures on the average duration of interruptions on each feeder is illustrated in Figure 4.1 for all feeders and in Figure 4.2 for the worst served 10 per cent of customers.

**FIGURE 4.1 AVERAGE MINUTES OFF SUPPLY, ALL CUSTOMERS, NO EXCLUSIONS 2010-14**



**FIGURE 4.2 AVERAGE MINUTES OFF SUPPLY, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, 2010-14**

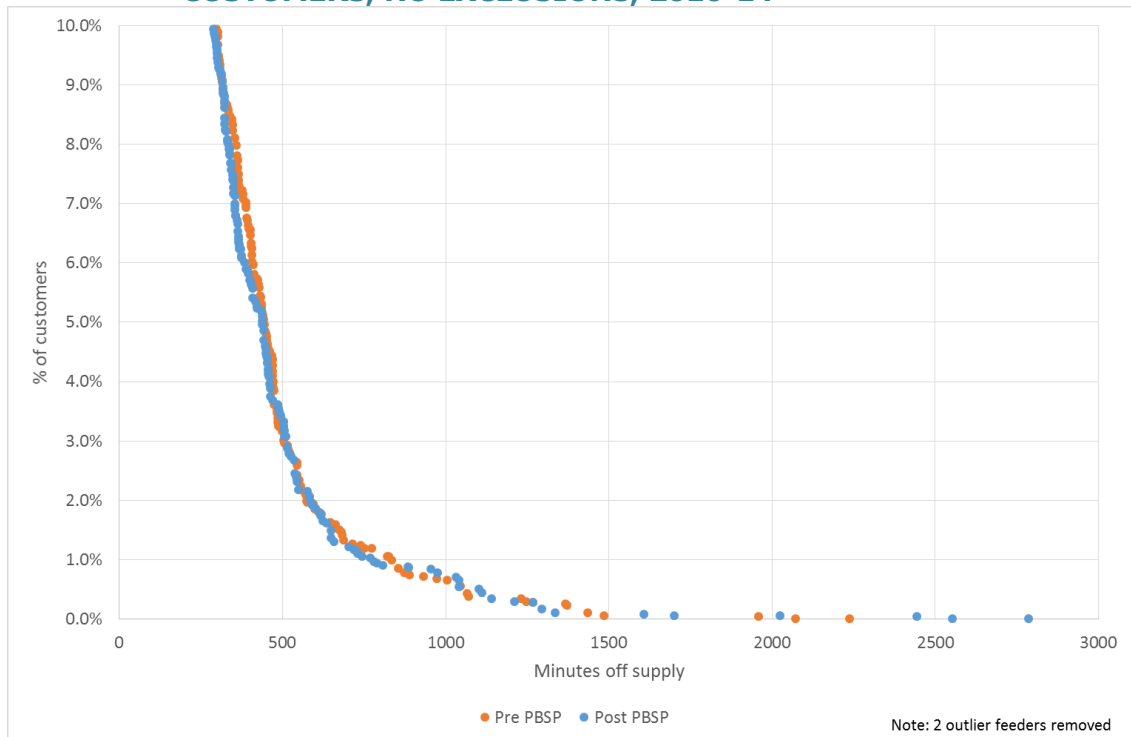


Figure 4.1 and Figure 4.2 indicate that the PBSP will significantly improve reliability for customers in areas that are subject to measures to reduce the bushfire risk during the 2016-20 period. These reliability improvements are localised and will not affect reliability for customers outside the areas targeted by the PBSP.

The PBSP measures are being implemented over a number of years extending beyond the upcoming (2016-20) regulatory period. Therefore, the number of customers experiencing an improvement in reliability in the targeted areas will increase between 2016-20 and then again in the next the regulatory period (2021-25).

We have made assumptions as to which powerlines will receive treatment during the 2016-20 regulatory control period based on information provided by the Department. We estimate that the average duration of interruptions experienced by the worst served one per cent of customers will improve from around 14 hours to around 13 hours.

However, GSL payments are currently made to more than one per cent of customers. We estimate that the duration of interruptions experienced by those at the threshold at which GSL payments are made is unchanged under the PBSP. We expect that the

feeders with performance at the threshold at which GSL payments are made, will not be subject to any treatment under the PBSP during the 2016-20 regulatory control period.

While the performance for some of the worst served customers will improve, the number of customers with reliability that exceeds the threshold for a GSL payment is expected to be unchanged.

We propose no change to the thresholds for GSL payments for the annual duration of interruptions for the 2016-20 regulatory control period. The thresholds are currently the same as those for the national scheme, and the number of GSL payments currently being paid is not less than one per cent of customers. That is, GSL payments will continue to be made to customers experiencing more than 20 hours, 30 hours or 60 hours of interruptions in a year.

#### **4.2.2 DURATION OF INTERRUPTION**

Under the national GSL payments scheme, electricity distributors are required to make GSL payments to customers experiencing an interruption exceeding 12 hours (CBD and urban feeders) and 18 hours (rural feeders).

There is currently no similar measure in the Victorian GSL payments scheme. As discussed previously, the Commission replaced this measure with the annual duration of interruptions measure in 2005 as very few long interruptions are experienced in Victoria.

We have proposed to include this measure in the Victorian GSL payments scheme for the 2016-20 regulatory control period, in part, for consistency with the national GSL payments scheme. Similarly, we propose that the threshold for the measure is the same as for the national measure (12 hours for CBD and urban feeders and 18 hours for rural feeders).

### 4.2.3 ANNUAL FREQUENCY OF UNPLANNED SUSTAINED INTERRUPTIONS

In 2005, the Commission established the thresholds for the annual frequency of unplanned sustained interruptions by applying the “one per cent” principle, with increasing levels of payment as the number of interruptions increases (10 interruptions, 15 interruptions and 30 interruptions).

The thresholds adopted in the national GSL payments scheme are the same as those for the Victorian GSL payments scheme in the 2001-05 period – 9 interruptions for CBD and urban feeders and 15 interruptions for rural feeders.

In 2005, the Commission changed the thresholds in the Victorian GSL payments scheme as:

- stakeholders queried why there were different thresholds for urban and rural customers
- reliability had improved so that fewer GSL payments were being made
- the distributors had each proposed reductions in the thresholds.

In assessing the threshold for the 2016-20 regulatory control period, we could continue to apply the “one per cent” principle. Alternatively, we could reduce the number of GSL payments by making payments to a smaller proportion of customers.

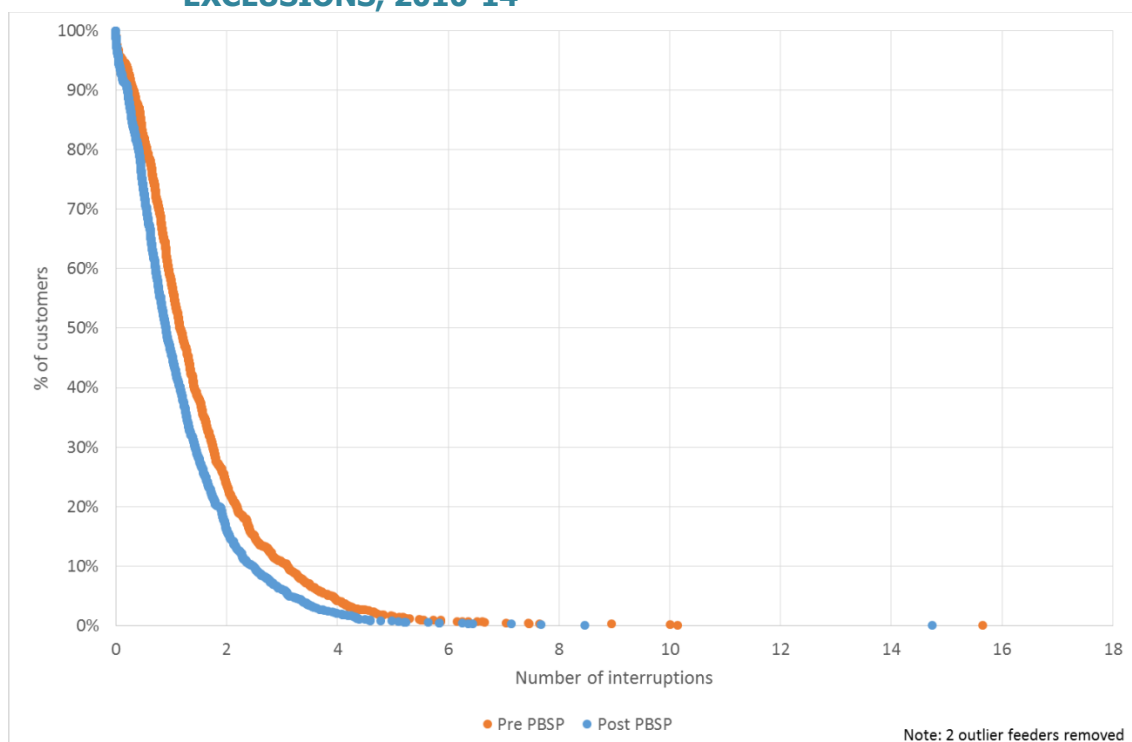
Figure 3.4 and Figure 3.5 indicate that approximately one per cent of the worst served customers continue to experience far more sustained interruptions than other customers. It is not economically efficient to reduce the number of sustained interruptions for these customers. We therefore propose that the “one per cent” principle continue to apply.

As discussed above, the Victorian Government, through the PBSP, has funded the replacement of powerlines in the most dangerous areas of the state and is proposing to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to require certain powerlines to be put underground or insulated at the end of their lives, and to enhance the network protection of polyphase powerlines with the installation of Rapid Earth Fault Current Limiters.

Based on information provided by the Department, we have estimated that powerline replacement will reduce the number of sustained interruptions on these powerlines by 50 per cent and enhanced network protection for polyphase powerlines will reduce the number of sustained interruptions on those powerlines by 30 per cent for phase to earth faults.

The impact of these measures on the average number of sustained interruptions on each feeder is illustrated in Figure 4.3 for all feeders and in Figure 4.4 for the worst served 10 per cent of customers.

**FIGURE 4.3 AVERAGE NUMBER OF INTERRUPTIONS, ALL CUSTOMERS, NO EXCLUSIONS, 2010-14**



**FIGURE 4.4 AVERAGE NUMBER OF INTERRUPTIONS, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, 2010-14**

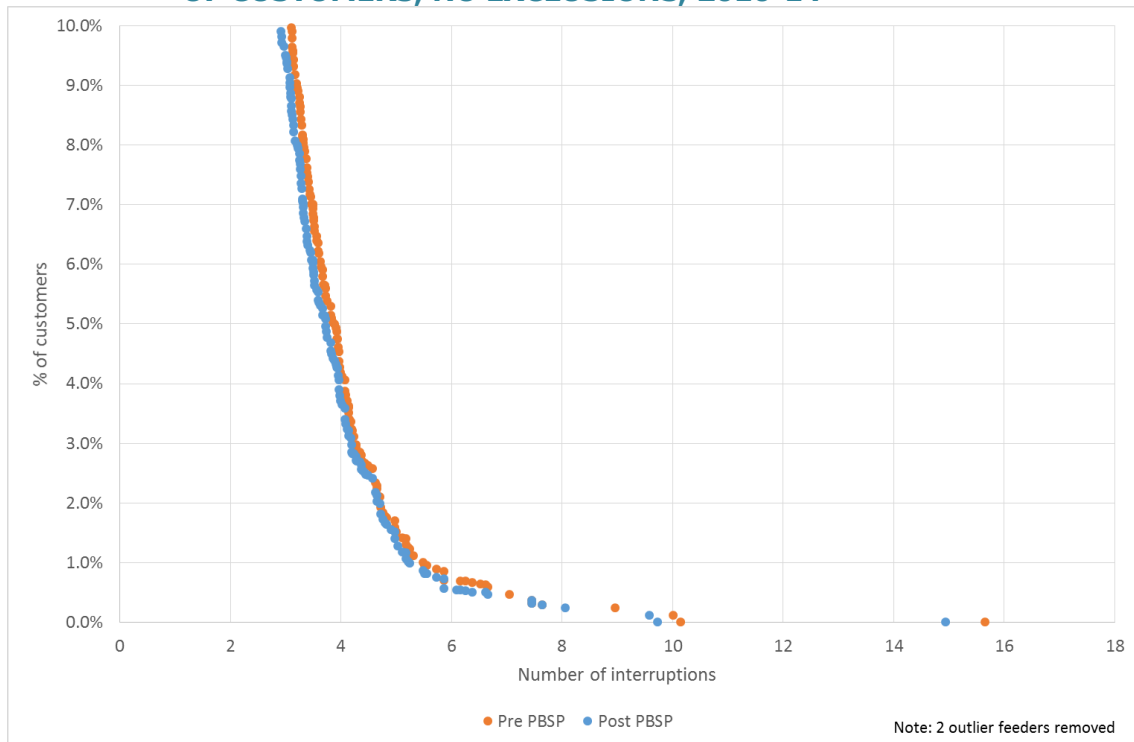


Figure 4.3 and Figure 4.4 indicate that the PBSP will significantly improve reliability for customers in areas that are subject to measures to reduce the bushfire risk during the 2016-20 period. As discussed previously, these reliability improvements are localised and will not affect reliability for customers outside the areas targeted by the PBSP.

The PBSP measures are being implemented over a number of years extending beyond the upcoming (2016-20) regulatory period. Therefore, the number of customers experiencing an improvement in reliability in the targeted areas will increase between 2016-20 and then again in the next the regulatory period (2021-25).

We estimate that the number of sustained interruptions experienced by the worst served one per cent of customers will decrease from 5.48 to 5.2.

We propose to reduce the thresholds for the payment of GSLs as a relatively small number customers experience a significantly greater number of sustained interruptions than other customers, and the number of GSLs being paid is currently well below one per cent of customers. Based on the number of sustained interruptions experienced over the last five years, and the improvement estimated with the PBSP, we propose to



retain the three levels, with the levels decreased from 10 to 8 interruptions, 15 to 12 interruptions and 30 to 24 interruptions, for the 2016-20 regulatory control period.

#### 4.2.4 ANNUAL FREQUENCY OF MOMENTARY INTERRUPTIONS

In 2005, the Commission established the thresholds for the annual frequency of momentary interruptions by applying the “one per cent” principle, with a higher level of payment as the number of interruptions increases (24 interruptions and 36 interruptions).

There is no similar measure in the national GSL payments scheme.

In assessing the threshold for the 2016-20 regulatory control period, we could continue to apply the “one per cent” principle. Alternatively, the number of GSL payments could be reduced by making payments to a smaller proportion of customers.

We propose to continue to apply the “one per cent” principle as there continue to be approximately one per cent of customers that receive a significantly higher number of momentary interruptions than others, and for whom it is not economically efficient to reduce the number of momentary interruptions.

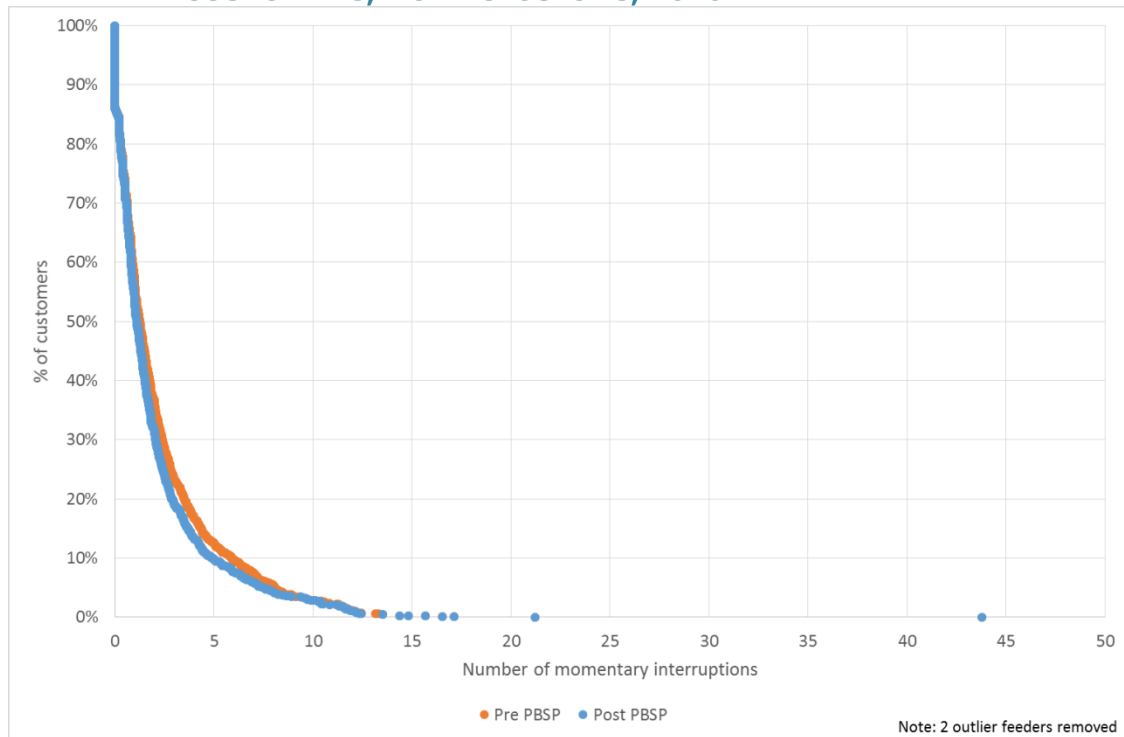
Figure 3.9 indicates that GSL payments are currently being paid to approximately one per cent of customers. While Figure 3.7 and Figure 3.8 indicate that the threshold for the measure needs to decrease below 24 interruptions if GSL payments are to continue to be paid to the worst served one per cent of customers, Figure 3.9 indicates that GSL payments are currently being paid to around one per cent of customers. This is likely to be because Figure 3.7 and Figure 3.8 are the average number of momentary interruptions per feeder, rather than the number of momentary interruptions experienced by each customer, and the number of momentary interruptions experienced by each customer will vary around the average.

As discussed above, the Victorian Government, through the PBSP, has funded the replacement of powerlines in the most dangerous areas of the state and is proposing to amend the *Electricity Safety (Bushfire Mitigation) Regulations 2013* to require certain powerlines to be put underground or insulated at the end of their lives, and to enhance the network protection of polyphase powerlines with the installation of Rapid Earth Fault Current Limiters.

We estimate that sections of powerlines replaced will experience no momentary interruptions and enhanced network protection for polyphase powerlines will eliminate momentary interruptions on those powerlines for phase to earth faults.

The impact of these measures on the average number of momentary interruptions on each feeder is illustrated in Figure 4.5 for all feeders and in Figure 4.6 for the worst served 10 per cent of customers.

**FIGURE 4.5 AVERAGE NUMBER OF MOMENTARY INTERRUPTIONS, ALL CUSTOMERS, NO EXCLUSIONS, 2010-14**



**FIGURE 4.6 AVERAGE NUMBER OF MOMENTARY INTERRUPTIONS, WORST SERVED 10% OF CUSTOMERS, NO EXCLUSIONS, 2010-14**

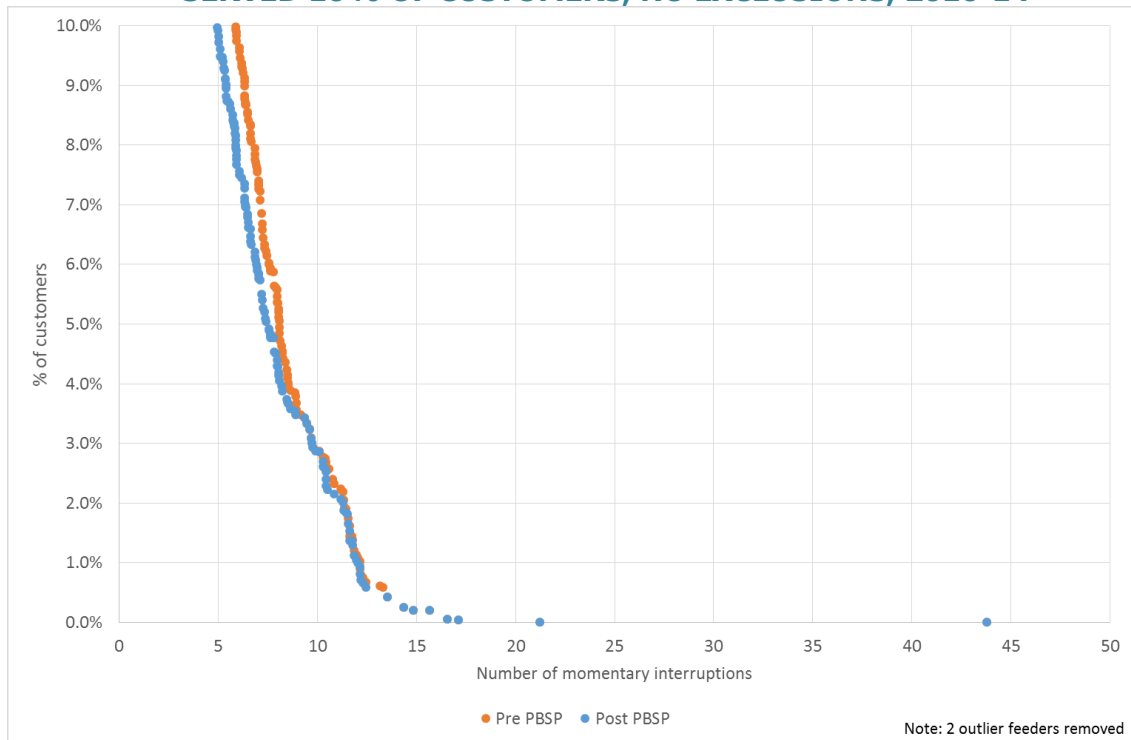


Figure 4.5 and Figure 4.6 indicate that the PBSP will significantly improve reliability for customers in areas that are subject to measures to reduce the bushfire risk during the 2016-20 period. As discussed previously, these reliability improvements are localised and will not affect reliability for customers outside the areas targeted by the PBSP.

The PBSP measures are being implemented over a number of years extending beyond the upcoming (2016-20) regulatory period. Therefore, the number of customers experiencing an improvement in reliability in the targeted areas will increase between 2016-20 and then again in the next the regulatory period (2021-25).

We estimate that the number of momentary interruptions experienced by the worst served one per cent of customers will remain unchanged at 12.1.

We propose that Victorian electricity distributors continue to be required to make payments to customers that experience more than 24 or 36 momentary interruptions in a year as, with these thresholds in place, electricity distributors are currently making payments to around one per cent of customers.

#### 4.2.5 ON TIME FOR APPOINTMENTS

The electricity distributors are required to make payments to customers when they are more than 15 minutes late for appointments.

In 2005, the Commission applied a window within which an appointment was to be made by the electricity distributor. By no later than 5pm on the day prior to an appointment, the electricity distributor must specify an appointment window of:

- no greater than 2 hours where the customer or its representative is required, or chooses, to be in attendance
- no greater than one day where the customer or its representative is not required, and does not choose, to be in attendance.

The number of GSL payments that have been made for being late for appointments over the 2010-14 period was provided in Figure 3.10, which indicates that the number of GSL payments is not high, although there has been a recent increase due to the AMI Program.

The threshold could be reduced so that the electricity distributors are required to make GSL payments when they are 5 or 10 minutes late. However, this reduces the flexibility for the electricity distributors in scheduling appointments and therefore increases their costs.

We propose to retain the current threshold for on time appointments (15 minutes late) to retain sufficient flexibility for the electricity distributors in scheduling appointments.

#### 4.2.6 NEW CONNECTIONS

The threshold for making payments for not connecting customers (on the agreed date) is consistent between the Victorian and national GSL payments schemes.

As the threshold for the new connections measure is the same in both the Victorian and national GSL payments schemes, and the number of GSLs paid has been declining, there is no strong rationale to change the threshold. We therefore propose to retain the current threshold for the new connections measure (on the agreed date).

#### 4.2.7 PUBLIC LIGHT REPAIR

The threshold for making payments for not repairing public lights is two business days in the Victorian GSL payments scheme and five business days in the national GSL payments scheme. Under both schemes the payment is made to the occupier of the immediately neighbouring residence or business.

The number of GSL payments that have been made over the 2010-14 period for not repairing public lights on a timely basis is illustrated in Figure 3.12. Figure 3.12 indicates that the number of GSLs payments has varied from year to year, but does not provide a strong rationale to relax the threshold from two business days, which has been in place since the establishment of an independent regulatory regime, to five business days, consistent with the national GSL payments scheme. It is likely that any such relaxation would be criticised by stakeholders.

We therefore propose to retain the current threshold for the repair of public lights (two business days).

## 4.2.8 CONCLUSION

We propose that the thresholds (levels) for each of the measures in the Victorian GSL payments scheme be as summarised in Table 4.3 for the 2016-20 regulatory control period.

**TABLE 4.3 PROPOSED THRESHOLDS FOR GSL PAYMENTS SCHEME MEASURES**

Measure	Proposed threshold	Change from current threshold
Annual duration of unplanned interruptions		
Level 1		
Level 2	> 20 hours	No change
Level 3	> 30 hours > 60 hours	
Duration of interruption	CBD and urban feeders – 12 hours Rural feeders – 18 hours	New – align with national GSL payments scheme
Annual frequency of unplanned sustained interruptions		Reduce thresholds so that payments made to approx. worst served 1 per cent of customers
Level 1	> 8 interruptions	
Level 2	> 12 interruptions	
Level 3	> 24 interruptions	
Annual frequency of momentary interruptions		
Level 1	> 24 interruptions	No change
Level 2	> 36 interruptions	
On time for appointments	> 15 minutes late	No change
New connections	Not connected on date agreed	No change
Public light repair	Within 2 business days	No change

### 4.3 ARE THE PAYMENT LEVELS OF THE GSL PAYMENTS SCHEME MEASURES APPROPRIATE?

The payment levels for each of the measures that are currently, or are proposed to be, included in the Victorian GSL payments scheme are provided in Table 4.4. Table 4.4 compares the payment levels for the Victorian and national GSL payments schemes and notes the factors that need to be considered in assessing whether the payment levels should be changed for the 2016-20 regulatory control period.

**TABLE 4.4 PAYMENT LEVELS FOR GSL PAYMENTS SCHEME MEASURES**

Measure	Victorian scheme	National scheme	Factors to be considered
Annual duration of unplanned interruptions			<ul style="list-style-type: none"> <li>• Change in value of customer reliability (VCR)</li> <li>• VCR for different categories of customers and different duration of interruptions</li> <li>• Change in average consumption level of customers</li> <li>• Alignment with national scheme</li> </ul>
Level 1	\$100	\$100	
Level 2	\$150	\$150	
Level 3	\$300	\$300	
Duration of interruption	N/A	\$80	<ul style="list-style-type: none"> <li>• Alignment with national scheme</li> </ul>
Annual frequency of unplanned sustained interruptions			
Level 1	\$100	\$80	<ul style="list-style-type: none"> <li>• Relativity to payment levels for duration of interruptions</li> </ul>
Level 2	\$150		
Level 3	\$300		
Annual frequency of momentary interruptions			
Level 1	\$25	N/A	<ul style="list-style-type: none"> <li>• Relativity to payment levels for frequency of sustained interruptions</li> </ul>
Level 2	\$35		
On time for appointments	\$20	N/A	<ul style="list-style-type: none"> <li>• Distribution Price Index (DPI)</li> </ul>
New connections	\$50 per day \$250 max.	\$50 per day \$300 max.	<ul style="list-style-type: none"> <li>• DPI</li> <li>• Alignment with national scheme</li> </ul>
Public light repair	\$10	\$25	<ul style="list-style-type: none"> <li>• DPI</li> <li>• Alignment with national scheme</li> </ul>

The payment levels for each of the proposed GSL payments scheme measures are discussed in the following sections.

### **4.3.1 ANNUAL DURATION OF UNPLANNED INTERRUPTIONS**

In 2005, the Commission set the payment levels for the annual duration of unplanned interruptions in the Victorian GSL payments scheme at \$100, \$150 and \$300.

The Commission was informed by the value of customer reliability (VCR), which was rounded to \$30 per kWh for the purposes of estimating the payment levels, and the ratio of customers' willingness to pay for reductions in the duration of interruptions compared to the willingness to pay for reductions in the number of interruptions. The ratio of the willingness to pay varies depending on the type of feeder, and is approximately one to one.<sup>13</sup>

The AER set the payment levels for the annual duration of unplanned interruptions in the national GSL payments scheme to be the same as those in the Victorian GSL payments scheme.

Approximately every five years, the Australian Energy Market Operator (AEMO) estimates the VCR. The VCRs are used by the electricity distributors to justify investment in their networks. The VCR has been used to inform the payment levels of reliability-based measures in service incentive mechanisms to align payments to customers with the electricity distributors' investment decision-making criteria.

AEMO's latest study (for 2014-15) revealed the VCRs for various customer segments as set out in Table 4.6.

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<sup>13</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service Target Performance Incentive Scheme*, November 2009, clause 3.2.2(f)



**TABLE 4.5 VALUE OF CUSTOMER RELIABILITY BY CUSTOMER SEGMENT, 2014 STUDY**

Customer segment	Value of VCR (\$ per kWh at March 2014)	Value of VCR (\$ per kWh at June 2015)
Victoria – aggregate excluding direct connect customers	39.50	40.29
Victoria – aggregate including direct connect customers	32.62	33.27
Victoria – residential customers	24.76	25.25
National – small agricultural customers	54.87	55.96
National – small commercial customers	57.13	58.27
National – small industrial customers	69.66	71.05

Source: Australian Energy Market Operator, *Value of Customer Reliability – Application Guide, Final Report*, December 2014; Australian Bureau of Statistics, 6401.0- Consumer Price Index, Australia, Jun 2015, All Groups, Weighted average of eight capital cities

Table 4.6 indicates that the VCR varied substantially between different customer segments in the 2014 study, with the VCR lower for residential customers than for other customer segments.

Direct connect customers are those large business customers that are supplied with electricity directly from the transmission network and are not connected to the distribution network. As GSL payments are only paid to customers that are connected to the distribution network and are supplied by the electricity distributors, the VCR for direct connect customers is not relevant to estimating the payment levels for GSLs. The aggregate VCR excluding direct connect customers is therefore more relevant to assessing the payment levels than the aggregate VCR including direct connect customers. This is consistent with the approach adopted by the AER.<sup>14</sup>

The VCR also varies depending on the time of day, season, and the duration of an interruption. The range of VCR for residential customers for different lengths of interruptions is set out in Table 4.6.

<sup>14</sup> For example, refer to Australian Energy Regulator, *Preliminary Decision, United Energy distribution determination 2016 to 2020, Attachment 11 – Service target performance incentive scheme*, October 2015, page 11-16

**TABLE 4.6 AVERAGE VICTORIAN RESIDENTIAL VCR BY LENGTH OF INTERRUPTION**

<b>Length of interruption</b>	<b>Residential VCR (\$ per kWh at March 2014)</b>	<b>Residential VCR (\$ per kWh at June 2015)</b>
0 to 1 hours	8.60 – 28.14	8.77 – 28.70
1 to 3 hours	36.02 – 36.79	36.74 – 37.52
3 to 6 hours	24.12 – 26.17	24.60 – 26.67
6 to 12 hours	16.54 – 18.79	16.87 – 19.16

Source: Australian Energy Market Operator, Value of Customer Reliability – Application Guide, Final Report, December 2014; Australian Bureau of Statistics, 6401.0- Consumer Price Index, Australia, Jun 2015, All Groups, Weighted average of eight capital cities

If it is assumed that the worst served customers, who are most likely to receive GSL payments, generally experience interruptions of duration between 3 and 6 hours, then the average VCR for residential customers (\$25.25) is of the same order of magnitude as the VCR for the worst served residential customers experiencing interruptions of 3 to 6 hours (\$24.60-\$26.67). We have therefore assumed that the VCR for all worst served customers experiencing interruptions of 3 to 6 hours is the same as the average VCR.

The VCR varies from study to study depending on the methodology and timing of the study. Any assessment of VCR by a study participant is subject to the most recent experience of that participant. Participants whose most recent experience is of a reliable supply relative to the longer term experience may tend to undervalue reliability. Participants whose most recent experience is of an unreliable supply relative to the longer term experience may tend to overvalue reliability.

The average value of VCR for Victoria estimated by AEMO (or its predecessors) in 1997, 2002, 2007 and 2014 is provided in Table 4.8.

**TABLE 4.7 AVERAGE VICTORIAN VCR ESTIMATED IN 1997, 2002, 2007 AND 2014**

<b>Study</b>	<b>VCR (\$ per kWh in nominal dollars)</b>	<b>VCR (\$ per kWh in June 2015 dollars)</b>
1997	\$28.89	\$46.42
2002	\$29.60	\$41.54
2007	\$47.85	\$58.65
2014 (excluding direct connect customers)	\$39.50	\$40.29
<b>AVERAGE OF 1997, 2002 AND 2014</b>		<b>\$42.75</b>

Table 4.8 indicates that the VCR estimated in 1997, 2002 and 2014 was relatively consistent (in 2015 dollars). The average value of VCR estimated in 2007 was significantly higher than in any other year due to very high values in the agricultural and commercial sectors. AEMO attributed the decline in the VCR for these sectors from 2007 to 2014 on the “increased electricity costs since 2007-08 and the implementation of energy efficiency savings in these sectors”<sup>15</sup>.

On balance, we propose to use the long run average of the VCRs estimated in each of the surveys in assessing the payment level for the annual duration of interruptions, to minimise any variations from study to study based on the study methodology and the participants’ most recent reliability experience. However, we propose to exclude the results from the 2007 survey as it is an outlier relative to the other three studies.

The Victorian and national GSL payments schemes currently have the same payment levels for all distribution customers, regardless of the type of customer. That is, the payment levels for residential customers are the same as the payment levels for business customers. The administrative costs associated with differentiating payments by customer type will be higher than the administrative costs associated with a single payment level for all customers.

<sup>15</sup> Australian Energy Market Operator, *Value of customer reliability review, Final report*, September 2014, page 1

GSL payments are not intended to compensate customers for loss suffered as a result of poor service. Rather, they are intended to be an acknowledgement of poor service<sup>16</sup> and provide an incentive for the electricity distributors to improve service. For this reason, we propose to continue to apply the same payment level for all customers, and that the payment levels for the annual duration of interruptions continue to be informed by the average Victorian VCR.

The actual value of energy not served when an interruption occurs is a function of the energy that would have otherwise been consumed by the customer, and the VCR. The average energy consumed by residential customers has fallen from around 6,000 kWh per annum in 2005 to around 5,000 kWh per annum in 2015.

The value of energy not supplied to a customer with a VCR of \$30 per kWh (value used in 2005) consuming 6,000 kWh per annum (average energy consumption in 2005) that loses supply for 20 hours is \$405. In 2005, this type of calculation informed a GSL payment level of \$100 for those experiencing more than 20 hours off supply per annum, increasing to \$300 for those experiencing more than 60 hours off supply per annum.

The value of energy not supplied to a customer with a VCR of \$42.75 per kWh (average over the 1997, 2002 and 2014 studies) consuming 5,000 kWh per annum (average energy consumption in 2015) that loses supply for 20 hours is \$488. This is an increase of approximately 20 per cent relative to 2005.

To retain the same relativity of GSL payments to average VCR, the payment levels for the annual duration of interruptions could be increased by 20 per cent from \$100 to \$120, \$150 to \$180 and \$300 to \$360. Alternatively, the current payment levels could be retained at the same levels as the national GSL payments scheme, which were set based on the current levels in the Victorian GSL payments scheme.

We propose to increase the payment levels for the duration of interruptions to \$120, \$180 and \$360 to reflect the latest information on the VCR and to retain the relativity of GSL payments to average VCR.

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<sup>16</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme*, November 2009, clause 6.3.3(a)

### 4.3.2 DURATION OF INTERRUPTIONS

Under the national GSL payments scheme, the electricity distributors are required to make a payment of \$80 to customers experiencing an interruption exceeding 12 hours (CBD and urban feeders) and 18 hours (rural feeders).

There is currently no similar measure in the Victorian GSL payments scheme.

For consistency with the national GSL payments scheme we have proposed that this measure be included in the Victorian GSL payments scheme for the 2016-20 regulatory control period. Similarly, we propose that the payment level for the measure be the same as for the national measure (\$80).

### 4.3.3 ANNUAL FREQUENCY OF UNPLANNED SUSTAINED INTERRUPTIONS

In 2005, the Commission set the payment levels for the annual number of unplanned sustained interruptions in the Victorian GSL payments scheme at the same level as the payment levels for the annual duration of unplanned interruptions (\$100, \$150 and \$300).

The payment levels were set at the same level as customers' willingness to pay for reductions in the duration of interruptions is similar to their willingness to pay for reductions in the number of interruptions.

As this ratio continues to be used in the national Service Target Performance Incentive Scheme<sup>17</sup>, we propose that the payment levels for the annual frequency of unplanned sustained interruptions continue to be the same as for the annual duration of unplanned interruptions.

We have proposed to increase the payment levels for the annual duration of unplanned interruptions from \$100 to \$120, \$150 to \$180 and \$300 to \$360. We therefore also

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<sup>17</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme*, November 2009, clause 3.2.2(f)

propose to increase the payment levels for the annual frequency of unplanned sustained interruptions from \$100 to \$120, \$150 to \$180 and \$300 to \$360.

#### 4.3.4 ANNUAL FREQUENCY OF MOMENTARY INTERRUPTIONS

In 2005, the Commission set the payment levels for the annual number of momentary interruptions in the Victorian GSL payments scheme (\$25 and \$35) based on the ratio between the value of a sustained interruption to the value of a momentary interruption of 9 to 1<sup>18</sup>.

The national Service Target Performance Incentive Scheme implies that the value that is placed on a momentary interruption is 8 per cent of the value that is placed on a sustained interruption.<sup>19</sup> We propose to value momentary interruptions at 8 per cent of the value of sustained interruptions, consistent with the national Service Target Performance Incentive Scheme.

We have proposed to increase the payment level for the number of sustained interruptions from \$100 to \$120 and to decrease the threshold from 10 to 8. The proposed value of a single sustained interruption under the GSL payments scheme is \$15 (the payment level of \$120 divided by the threshold of 8).

If a sustained interruption is valued under the GSL payments scheme at \$15, then the value of a momentary interruption is 8 per cent of \$15, or \$1.20. On this basis, the value of 24 and 36 momentary interruptions is \$28.80 and \$43.20, respectively.

We propose to round these values so that the payment level for 24 momentary interruptions increases from \$25 to \$30 and the payment level for 36 momentary interruptions increases from \$35 to \$40 for the 2016-20 regulatory control period.

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<sup>18</sup> Essential Services Commission, *Electricity Distribution Price Review, Final Decision Volume 1: Statement of Purpose and Reasons*, October 2005, page 107

<sup>19</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme*, November 2009, clause 3.2.2(j)

### 4.3.5 ON TIME FOR APPOINTMENTS

The payment level for being late for appointments was set at \$20 in 2000 and has not increased since. As a result, the real value of payments has declined substantially.

To retain the relative value of the GSL payment, the Commission proposes to increase payment level by an index based on the increase in distribution charges (the distribution price index or DPI).

We have constructed the DPI by considering the X-factors that applied to the electricity distributors' price controls from 2001 to 2015 and the Consumer Price Index that applied over the same period. As metering services were removed from distribution services in 2006, we have used the X factor that applied to distribution and metering services in 2006. For all other years, we have used the X factor that applied to distribution services only. We have constructed a weighted average DPI index based on the distributors' forecast 2015 revenue.

The DPI for each electricity distributor varies over a wide range. Assuming an index of 100 in 2000, the index in 2015 varies from 112.1 to 138.6, with a weighted average of 125.8.

If the payment level for on time appointments is increased by DPI from June 2000 to June 2015, it is increased to between \$22.42 and \$27.72.

We propose to increase the payment level for on time appointments in line with the upper range of the DPI, rounded up to the nearest five dollars to reflect the inaccuracy associated with determining the payment level.

We therefore propose to increase the payment level for on time appointments from \$20 to \$30 for the 2016-20 regulatory control period.



#### 4.3.6 NEW CONNECTIONS

The payment level for not making connections by the agreed date was set under the Victorian GSL payments scheme at \$50 per day in 2005 to a maximum of \$250. This was unchanged from the payment level that was set in 2000. As a result, the real value of payments has declined substantially.

The payment level under the national GSL payments scheme is \$50 per day to a maximum of \$300.

The payment level under the Victorian GSL payments scheme would increase to between \$56.04 and \$69.29 per day to a maximum of between \$280 and \$346 if the 2000 payment level is indexed by DPI.

For the reasons discussed in section 4.3.5, we propose to increase the payment level for not making connections by the agreed date from \$50 per day to \$70 per day, with the maximum increased from \$250 to \$350, for the 2016-20 regulatory control period.

#### 4.3.7 PUBLIC LIGHT REPAIR

The payment level for not repairing public lights was set under the Victorian GSL payments scheme at \$10 in 2000 and remained unchanged in 2005. The payment level is \$25 under the national GSL payments scheme.

In 2005, some stakeholders supported an increase in the payment level for not repairing public lights to \$20, while other stakeholders were of the view that the measure was anomalous as the activity is contestable.

The Commission was of the view that the market for the repair of public lighting was not effectively competitive but there was the potential for the market to become more competitive during the 2006-10 regulatory control period. As a high proportion of public lights were maintained by the electricity distributors, the Commission decided that the measure should be retained in the Victorian GSL payments scheme. However, as it

considered that the market was transitioning to become more contestable, the Commission did not support an increase in the payment level.<sup>20</sup>

Since 2005, there has continued to be debate on the effectiveness of competition in the public lighting market. In its 2016-20 distribution determination the AER distinguished between the competitive market for new public lighting assets, and the market for legacy public lighting assets, which are on installed on the electricity distributors' assets, that is not effectively competitive due to safety restrictions that apply around the electricity distributors' assets. As a result, the AER classified:

- distributor-owned public lighting assets, which have monopoly characteristics, as a regulated service that is regulated separately from distribution use of system services
- new public lighting (including greenfield sites), which have substantial scope for contestable provision, as a negotiated service.

As there is now greater clarity as to which public lighting assets have transitioned, or are likely to transition, to a contestable market and which are not, there can be greater clarity as to the payment levels that apply where public lights are not repaired within two business days.

We propose that the minimum regulated payment level for not repairing new public lighting (including greenfield sites) on a timely basis be set at zero. When negotiating with an electricity distributor for the provision of this service, customers with these lights should also negotiate the payment level for not repairing public lights on a timely basis.

We further propose that a non-zero payment level be set for not repairing distributor-owned public lighting assets on a timely basis. For consistency with the national GSL payments scheme, we propose to increase the payment level from \$10 to \$25.

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<sup>20</sup> Essential Services Commission, *Electricity Distribution Price Review, Final Decision Volume 1: Statement of Purpose and Reasons*, October 2005, page 113

### 4.3.8 CONCLUSION

The Commission proposes that the payment levels for each of the proposed measures in the Victorian GSL payments scheme be as summarised in Table 4.8 for the 2016-20 regulatory control period.

**TABLE 4.8 PROPOSED PAYMENT LEVELS FOR GSL PAYMENTS SCHEME MEASURES**

Measure	Proposed payment level	Change from current payment level
Annual duration of unplanned interruptions		
Level 1	\$120	Increase to reflect the increase in VCR
Level 2	\$180	
Level 3	\$360	
Duration of interruption	\$80	New – align with national GSL payments scheme
Annual frequency of unplanned sustained interruptions		
Level 1	\$120	Increase to reflect the increase in VCR
Level 2	\$180	
Level 3	\$360	
Annual frequency of momentary interruptions		
Level 1	\$30	Increase in line with change in threshold and payment level for frequency of sustained interruptions, and ratio of value of momentary interruptions to sustained interruptions
Level 2	\$40	
On time for appointments	\$30	Increase in line with DPI
New connections	\$70 per day \$350 max.	Increase in line with DPI
Public light repair		
Distributor-owned public lighting assets	\$25	Increase to align with national GSL payments scheme
New public lighting (including greenfield sites)	\$0	Actual payment level to be negotiated

#### **4.4 ARE THE CRITERIA FOR EXCLUDING INTERRUPTIONS FROM THE RELIABILITY-BASED GSL PAYMENTS SCHEME MEASURES APPROPRIATE?**

When assessing the reliability-based GSL payments that are to be made, certain events are generally excluded. These events are those that are outside the control of the electricity distributor, such as the failure of the transmission system, and extreme events, to avoid creating an incentive to “gold plate” the distribution network to mitigate these types of events.

The exclusion criteria for reliability-based GSL payments under the Victorian scheme and the national scheme are summarised in Table 4.10.

Each of these exclusion criteria are discussed in the following sections.

**TABLE 4.9 EXCLUSION CRITERIA FOR RELIABILITY-BASED GSL PAYMENTS SCHEME MEASURES**

<b>Exclusion criterion</b>	<b>Victorian scheme</b>	<b>National scheme</b>
Shortfall in generation	Load shedding due to a shortfall in generation, but excluding a shortfall in embedded generation that has been contracted to provide network support, except where prior approval has been obtained from the Commission	Load shedding due to a generation shortfall
Other load shedding		Automatic load shedding due to the operation of underfrequency relays following the occurrence of a power system under-frequency condition  Load shedding at the direction of AEMO or a system operator
Shared transmission network	Supply interruptions caused by a failure of the shared transmission network	Load interruptions caused by a failure of the shared transmission network
Transmission connection assets	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	Load interruptions caused by a failure of transmission connection assets except where the interruptions were due to inadequate planning of transmission connections and the distributor is responsible for transmission connection planning
Demand response	Where prior approval has been obtained from the Commission, load shedding due to a shortfall in demand response initiatives	
Exercise of legislative obligation, right or discretion		Load interruptions caused by the exercise of any obligation, right or discretion imposed upon or provided for under jurisdictional electricity legislation or national electricity legislation applying to a distributor
Major event day	Supply interruptions on a day where the unplanned interruption frequency exceeds a particular threshold	An event may also be excluded where daily average minutes off supply for the distributor's network exceeds the major event day boundary

#### 4.4.1 SHORTFALL IN GENERATION

Interruptions caused by a shortfall in generation are excluded under the Victorian and national GSL payments schemes. However, under the Victorian scheme, a shortfall in embedded generation that has been contracted to provide network support is not excluded, except where prior approval has been obtained from the Commission.

In 2005, the Commission initially concluded that interruptions caused by embedded generation should not be excluded from the GSL payments scheme.

*The Commission was of the view that distributors should be accountable for delivering targeted reliability, including when seeking to address required network augmentations by entering into network support agreements with generators. Customers' reliability should not be negatively affected by how the distributor chooses to augment its network.<sup>21</sup>*

In response to concerns that this would provide a disincentive to install embedded generation to provide network support, the Commission included an exclusion criterion for embedded generation where prior approval had been obtained. When seeking approval, proponents are required to demonstrate that the customers likely to have been impacted have been appropriately identified and agreed to an exclusion over a defined period.

We propose to continue to exclude, from the GSL payments scheme, interruptions caused by a shortfall in embedded generation that has been contracted to provide network support where prior approval has been obtained from the Commission. This will support the Victorian Government's commitment to removing any regulatory barriers to the development of embedded (or distributed) generation.<sup>22</sup>

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<sup>21</sup> Essential Services Commission, *Electricity Distribution Price Review, Final Decision Volume 1: Statement of Purpose and Reasons*, October 2005, page 126

<sup>22</sup> Victorian Government, *Victoria's Renewable Energy Roadmap*, August 2015

#### **4.4.2 OTHER LOAD SHEDDING**

The national GSL payments scheme includes two exclusion criteria relating to load shedding that are not included in the Victorian GSL payments scheme:

- automatic load shedding due to the operation of underfrequency relays following the occurrence of a power system under-frequency condition
- load shedding at the direction of AEMO or a system operator.

To more closely align the Victorian GSL payments scheme with the national GSL payments scheme, we propose to include these additional exclusion criteria in the Victorian GSL payments scheme.

#### **4.4.3 SHARED TRANSMISSION NETWORK**

Both the Victorian and national GSL payments scheme exclude interruptions caused by a failure of the shared transmission network. We propose to retain this exclusion criterion in the Victorian GSL payments scheme.

#### **4.4.4 TRANSMISSION CONNECTION ASSETS**

Both the Victorian and national GSL payments scheme generally exclude interruptions caused by a failure of transmission connection assets, although they differ slightly in terms of the transmission connection assets that are not excluded.

The Victorian GSL payments scheme does not exclude interruptions caused by a failure of transmission connection assets, to the extent that the interruptions were due to inadequate planning of transmission connections. The national GSL payments scheme does not exclude interruptions caused by a failure of transmission connection assets where the interruptions were due to inadequate planning of transmission connections and the distributor is responsible for transmission connection planning.

We expect that the events that would be excluded under both definitions would be similar. We therefore propose to align the exclusion for transmission connection assets in the Victorian GSL payments scheme with the exclusion for transmission connection assets in the national GSL payments scheme.

#### 4.4.5 DEMAND RESPONSE

Where prior approval has been obtained from the Commission, the Victorian GSL payments scheme excludes interruptions (load shedding) that are required when initiatives to reduce demand (demand response) are not delivered.

When seeking approval from the Commission for this exclusion, proponents are required to demonstrate that the customers likely to have been impacted by the failure of the demand response initiative have been appropriately identified and agreed to an exclusion over a defined period.

The Commission originally included this exclusion criterion in the Victorian GSL payments scheme, as a trial, due to:

- The tension between trialling demand side response initiatives and the operation of the service incentive mechanisms (including the GSL payments scheme).
- The importance of demand side initiatives to reduce peak demand which will in turn reduce expenditure required to provide the capacity for these peak demands for a relatively short period each year.

The national GSL payments scheme does not include a similar exclusion criterion. The AER specifically chose not to include a similar exclusion criterion on the basis of a report on demand management by the Australian Energy Market Commission (AEMC).

*In its report, the AEMC noted that the current service incentive arrangements for distribution networks do not provide a barrier to demand side participation. The AEMC stated that service incentive schemes allow DNSPs to appropriately compare levels of reliability and continuity of supply with likely penalties or benefits.<sup>23</sup>*

In submissions to the AER, AusNet Services was of the view that the AER had not considered the early stages of development of the demand management industry. Energy Response submitted that the absence of a demand response exclusion

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<sup>23</sup> Australian Energy Regulator, *Victorian electricity distribution network service providers, Distribution determination 2011-2015, Final decision*, October 2010, page 726



criterion acted as a disincentive to electricity distributors considering demand response initiatives.

The AEMC's statement relies on the electricity distributors having perfect foresight into the impact of demand response initiatives on reliability and continuity of supply. Reliance on demand response initiatives to meet peak demand is relatively immature with little experience for the electricity distributors to confidently assess likely levels of reliability and continuity of supply. Accordingly, they will generally conservatively estimate the likely penalties.

In the absence of such an exclusion, an option is for the electricity distributors to pass through any rewards or penalties incurred as a result of demand response initiatives to the demand response provider. However, as indicated by Energy Response's submission to the AER, demand response providers consider this to be a barrier to the provision of demand response initiatives.

No approvals have been sought from the Commission to exclude demand response initiatives from the GSL payments scheme. This may indicate that either the perceived risk that there will be a shortfall in demand response initiatives is considered to be low, or there have been no demand response initiatives. As interruptions due to a shortfall in demand response initiatives cannot be excluded from the national Service Target Performance Incentive Scheme, for the purposes of the service incentive scheme, it is most likely that electricity distributors continue to be reluctant to rely on demand response initiatives to meet peak demand.

As the demand response industry continues to be relatively immature, we propose to continue to exclude interruptions caused by a shortfall in demand response initiatives from the GSL payments scheme, where prior approval has been obtained from the Commission.

#### **4.4.6 EXERCISE OF LEGISLATIVE RIGHT, OBLIGATION OR DISCRETION**

The national GSL payments scheme excludes load interruptions caused by the exercise of any obligation, right or discretion imposed upon or provided for under jurisdictional electricity legislation or national electricity legislation applying to a

distributor. The Victorian GSL payments scheme does not include a similar exclusion criterion.

The AER has used this provision to exclude supply interruptions due to the suppression of the auto-recloser system under an approved Electricity Safety Management Scheme.<sup>24</sup> Interruptions are only excluded where the cause of the fault cannot be identified. AusNet Services has had a number of events excluded from the Service Target Performance Incentive Scheme under this exclusion criterion.

The electricity distributor has a high degree of influence as to which events are or are not excluded as it is based on the settings of the auto recloser and its assessment as to whether the cause of the fault can be identified. The suppression of auto reclosers is now standard practice and therefore does not provide an appropriate basis for excluding interruptions.

Given the way in which this exclusion criterion has been exercised, we do not propose to include this exclusion criterion in the Victorian GSL payments scheme.

#### **4.4.7 MAJOR EVENT DAY**

The major difference between the exclusion criteria in the Victorian GSL payments scheme and the national GSL payments scheme is the exclusion for abnormal events, commonly referred to as the Major Event Day exclusion.

Under both schemes, interruptions that occur on a Major Event Day are excluded. However, while the Victorian GSL payments scheme determines a day to be a Major Event Day when the number of interruptions exceeds a threshold, the national GSL payments scheme determines a day to be a Major Event Day when the duration of interruptions exceeds a threshold.

As part of the 2005 review of the GSL payments scheme, the Commission adopted a quantitative Major Event Day exclusion criterion based on the number of interruptions

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<sup>24</sup> Australian Energy Regulator, *Victorian electricity distribution network service providers, Distribution determination 2011-2015, Final decision*, October 2010, page L

rather than the duration of interruptions as it considered that frequency, rather than duration, was a better indicator that a large number of events had occurred which would stretch the distributors' resources to restore supply.<sup>25</sup> The Commission considered that an exclusion criterion based on the duration of interruptions could wrongly exclude events where there was a poor response by the electricity distributors.

In 2005, the Commission determined the quantitative Major Event Day threshold for each electricity distributor by considering:

- a lognormal distribution of the distributors' daily average number of interruptions over the 2000-04 period, with a threshold that was 2.7 standard deviations from the mean
- the impact of storms in February 2005
- a 1 in 5 year event based on a complex function to model each of the distributor's daily average number of interruptions over the 2000-04 period.

By contrast, the national GSL payments scheme adopted a quantitative duration-based Major Event Day exclusion criterion based on the US Institute of Electrical and Electronics Engineers Standard IEEE1366-2003. The development of the standard was the culmination of a significant amount of research in the United States on the use of statistical criteria for exclusions of reliability for supply reporting. The standard proposes the use of a 2.5 beta exclusion method based on the daily duration of interruptions.

The AER's rationale for using the standard was that it supported the comparison of network performance between Australian and international distribution businesses.<sup>26</sup>

As part of the revenue determination for the 2011-15 regulatory control period, the quantitative exclusion criterion for Powercor and AusNet Services was set, by the AER, based on 2.8 beta from the mean, rather than the standard 2.5 beta. By increasing the number of beta, the number of interruptions excluded is reduced which increases the

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<sup>25</sup> Essential Services Commission, *Electricity Distribution Price Review, Final Decision Volume 1: Statement of Purpose and Reasons*, October 2005, page 123

<sup>26</sup> Australian Energy Regulator, *Electricity distribution network service providers, Service target performance incentive scheme, Issues Paper*, November 2007, pages 24-25

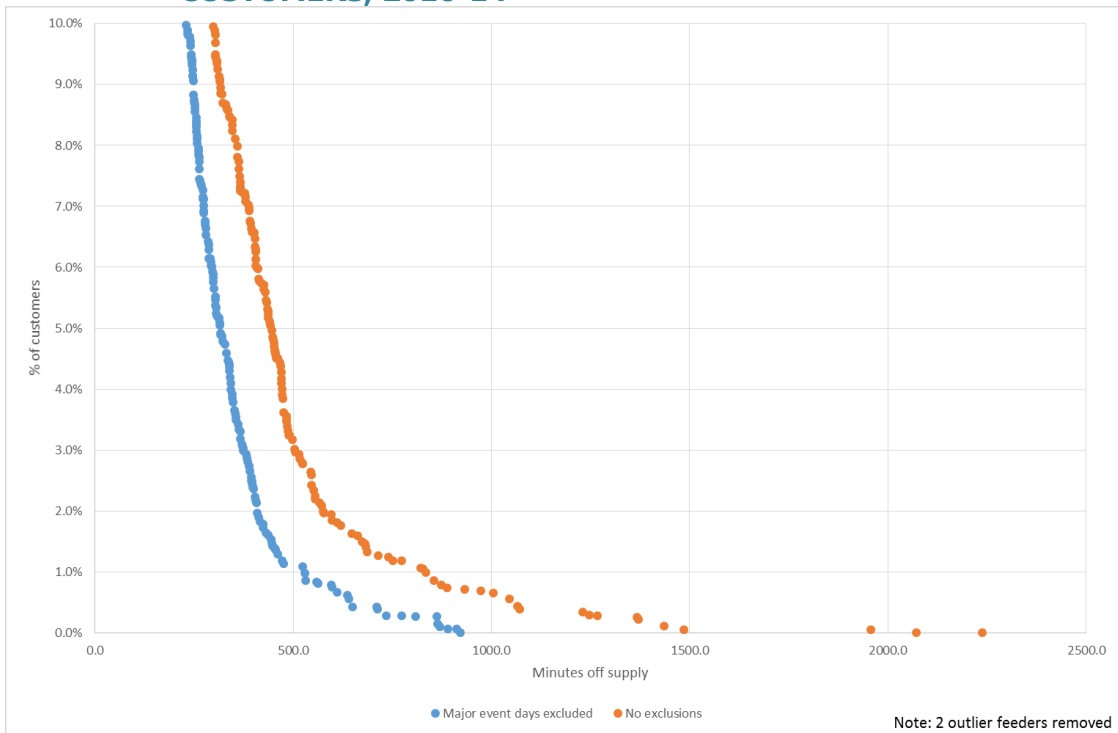
incentives to improve supply reliability. However, by adopting a different beta value to other electricity distributors, the network performance of Powercor and AusNet Services cannot be directly compared to other electricity distribution businesses, which undermines the rationale provided by the AER for using this approach to assessing Major Event Days.

In setting the Major Event Day threshold in 2005, the Commission was aiming to exclude only abnormal events, that is, around one event per five year period, on average. Under the national regime, up to five days per year have been excluded from the service incentive mechanisms.

While the AER's approach to assessing Major Event Days may provide a useful basis for comparing reliability performance across Australian and international electricity distribution businesses, it is not necessarily the most appropriate basis for making GSL payments to the worst served customers to acknowledge poor reliability as a relatively high number of days are excluded each year.

The impact of the high number of exclusions under the national definition is illustrated in Figure 4.7 and Figure 4.8. Figure 4.7 and Figure 4.8 compare the average duration and frequency of interruptions on each feeder over the 2010-14 period for the worst served 10 per cent of customers, with and without exclusions as defined under the national GSL payments scheme.

**FIGURE 4.7 AVERAGE MINUTES OFF SUPPLY, WORST SERVED 10% OF CUSTOMERS, 2010-14**



**FIGURE 4.8 AVERAGE NUMBER OF INTERRUPTIONS, WORST SERVED 10% OF CUSTOMERS, 2010-14**

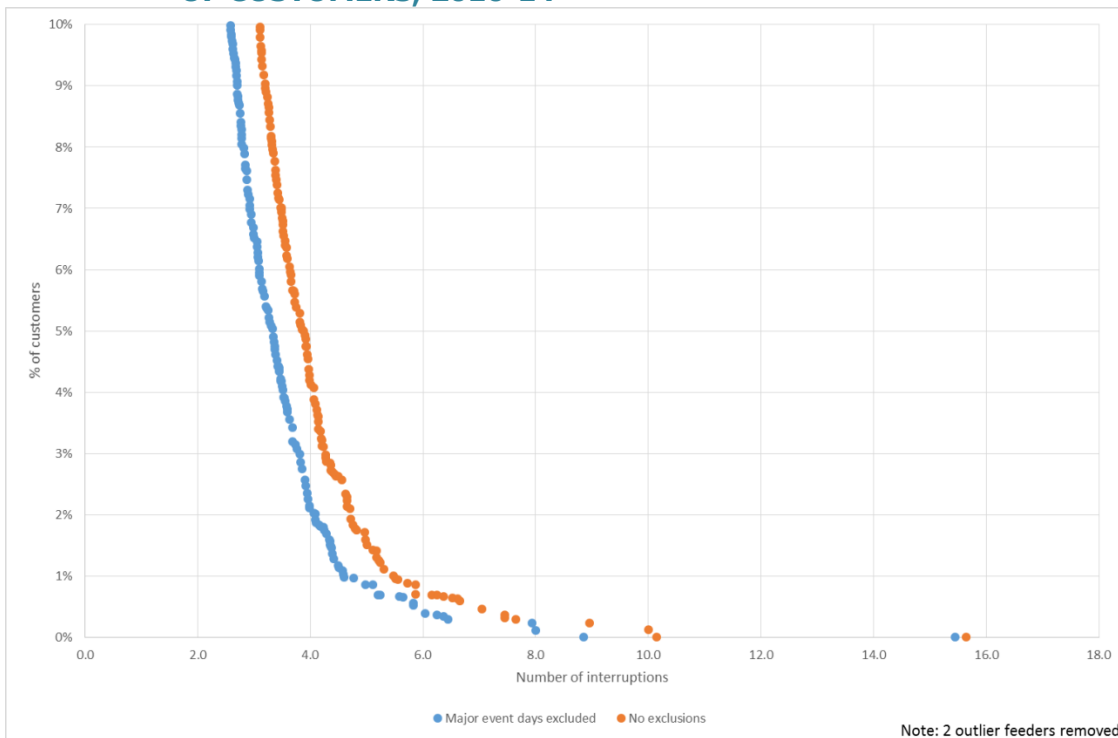


Figure 4.7 and Figure 4.8 indicate that the duration and frequency of interruptions for the worst served customers is substantially better when Major Event Days under the national definition are excluded.

If the Major Event Day for the Victorian GSL payments scheme is changed to align with the national definition, the thresholds (levels) for the GSL payments would need to be substantially reduced. A communications campaign would also be needed to educate customers as to why they are not eligible for a GSL payment even though they may have experienced many interruptions or long periods of time off supply.

We therefore do not propose to align the definition of a Major Event Day between the Victorian and national GSL payments schemes. We will retain the existing definition of a Major Event Day based on the frequency of interruptions.

#### 4.4.8 CONCLUSION

The Commission proposes that the criteria for excluding interruptions from the Victorian GSL payments scheme be as summarised in Table 4.11 for the 2016-20 regulatory control period.

**TABLE 4.10 PROPOSED EXCLUSION CRITERIA FOR RELIABILITY-BASED GSL PAYMENTS SCHEME MEASURES**

	<b>Proposed exclusion criteria</b>	<b>Change from current scheme</b>
Shortfall in generation	Load shedding due to a shortfall in generation, but excluding a shortfall in embedded generation that has been contracted to provide network support, except where prior approval has been obtained from the Commission	No change
Other load shedding	Automatic load shedding due to the operation of underfrequency relays following the occurrence of a power system under-frequency condition	New – align with national GSL payments scheme
	Load shedding at the direction of AEMO or a system operator	New – align with national GSL payments scheme
Shared transmission	Supply interruptions caused by a failure of	No change

network	the shared transmission network	
Transmission connection assets	Load interruptions caused by a failure of transmission connection assets except where the interruptions were due to inadequate planning of transmission connections and the distributor is responsible for transmission connection planning	Change to align with national GSL payments scheme
Demand response	Where prior approval has been obtained from the Commission, load shedding due to a shortfall in demand response initiatives	No change
Major event day	Supply interruptions on a day where the unplanned interruption frequency exceeds a particular threshold	No change

## 4.5 ESTIMATED IMPACT OF THE PROPOSED CHANGES TO THE VICTORIAN GSL PAYMENTS SCHEME

On average, the five electricity distributors have paid \$7.5 million per annum in GSL payments over the 2010-14 period (in nominal dollars). This compares with an operating expenditure allowance of \$5.4 million per annum (in 2010 dollars) for the 2011-15 regulatory control period.

We have proposed the following changes to the Victorian GSL payments scheme that we expect will, if implemented, increase the amount that will be paid to customers over the 2016-20 regulatory control period:

- increase the payment levels for the number and frequency of sustained unplanned interruptions from \$100 to \$120, \$150 to \$180 and \$300 to \$360
- include a new measure (duration of an interruption) with a \$80 payment level – although we expect that the payments made will be negligible
- reduce the thresholds for the annual frequency of interruptions – we expect the number of payments will increase so they are paid to approximately one per cent of customers each year

- increase the payment levels for momentary interruptions from \$25 to \$30 and from \$35 to \$40
- increase the payment level for on time appointments from \$20 to \$30
- increase the payment level for new connections from \$50 to \$70 per day with the maximum increased from \$250 to \$350
- increase the payment level for public lighting from \$10 to \$25.

We estimate that these changes will increase the GSL payments to \$11.2 million per annum. This represents around 0.5 per cent of the revenue that is forecast to be earned by the electricity distributors over the 2016-20 regulatory control period, compared to 0.5 per cent for the 2006-10 regulatory control period and 0.3 per cent for the 2011-15 regulatory control period<sup>27</sup>.

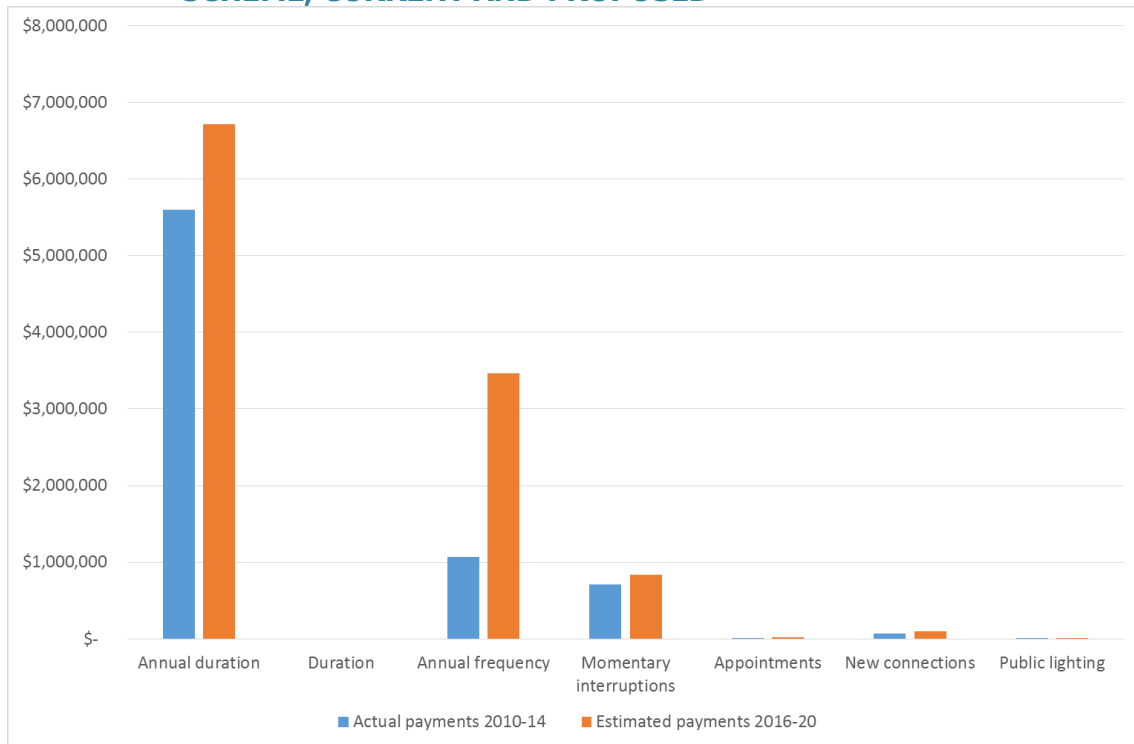
The estimated payments for each measure are illustrated in Figure 4.9.

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<sup>27</sup> The percentage decreased from 0.5 per cent to 0.3 per cent for the 2011-15 regulatory control period because the payment thresholds and payment levels were unchanged from the 2006-10 regulatory control period, but the electricity distributors' revenues increased significantly.



**FIGURE 4.9 AVERAGE ANNUAL PAYMENTS UNDER THE GSL PAYMENTS SCHEME, CURRENT AND PROPOSED**



The AER has recently made a determination of the revenues to be earned by the Victorian electricity distributors in 2016. The determination did not include consideration of the expected additional costs associated with the proposed GSL payments scheme that will apply from 1 January 2016. We expect that the AER will consider these costs in making its Substitute Determination for the 2016-20 regulatory control period in April 2016.

# 5 PROPOSED CHANGES TO REGULATORY INSTRUMENTS

We propose to amend the Codes to vary the GSL payments that electricity distributors are required to make to their customers. The proposed marked up amendments to the Codes are set out in this chapter.

## 5.1 PROPOSED AMENDMENTS TO THE ELECTRICITY DISTRIBUTION CODE

We propose to amend clause 6.1.1 of the Electricity Distribution Code to increase the GSL payment to be made to customers when the electricity distributor is late for an appointment.

6.1.1 Where a **distributor** makes an appointment with a **customer**, if the **distributor** is more than 15 minutes late for the appointment, the **distributor** must pay the **customer** ~~\$20~~\$30.

We propose to amend clause 6.2 of the Electricity Distribution Code to increase the GSL payment to be made to customers when the electricity distributor does not connect a customer by the agreed date.

6.2 Where a **distributor** does not **supply** electricity to a **customer's supply address** on the day agreed with the **customer**, the **distributor** must pay to the **customer** ~~\$50~~\$70 for each day that it is late, up to a maximum of ~~\$250~~\$350.

We propose to amend clauses 6.3.1 and 6.3.2 of the Electricity Distribution Code to increase the GSL payment to be made to customers when they experience long periods of time off supply or many interruptions.

6.3.1 A **distributor** must make a **supply restoration payment** to a **customer** of:

- (a) ~~\$100~~\$120 where the **customer** experiences more than 20 hours of unplanned **sustained interruptions** per year; or
- (b) ~~\$150~~\$180 where the **customer** experiences more than 30 hours of unplanned **sustained interruptions** per year; or
- (c) ~~\$300~~\$360 where the **customer** experiences more than 60 hours of unplanned **sustained interruptions** per year; and
- (d) \$80 where the **customer** is supplied by a **CBD feeder** or an **urban feeder** and experiences an unplanned **sustained interruption** of **more than 12 hours**; or
- (e) \$80 where the **customer** is supplied by a **short rural feeder** or a **long rural feeder** and experiences an unplanned **sustained interruption** of more than 18 hours;

not counting the period of an event to which clause 6.3.3 or 6.3.4 applies.

6.3.2 A **distributor** must make a **low reliability payment** to a **customer** of:

- (a) ~~\$100~~\$120 where the **customer** experiences more than ~~408~~408 unplanned **sustained interruptions** per year; or
- (b) ~~\$150~~\$180 where the **customer** experiences more than ~~4512~~4512 unplanned **sustained interruptions** per year; or
- (c) ~~\$300~~\$360 where the **customer** experiences more than ~~3024~~3024 unplanned **sustained interruptions** per year; and
- (d) ~~\$25~~\$30 where the **customer** experiences more than 24 **momentary interruptions** per year; or

- (e) ~~\$35~~\$40 where the **customer** experiences more than 36 **momentary interruptions** per year;

not counting the period of an event to which clause 6.3.3 or 6.3.4 applies.

We propose to amend clause 6.3.4 of the Electricity Distribution Code to include two exclusion criteria that are included in the national GSL payments scheme and to amend the “transmission connection assets” exclusion criterion to align with the national GSL payments scheme.

6.3.4 Also despite clauses 6.3.1 and 6.3.2, on application from a **distributor** the **Commission** will excuse the **distributor** from making a **supply restoration payment** or a **low reliability payment** if the **Commission** is satisfied that the obligation to make the payment arises from an **event** which relates to:

- (a) **load** shedding due to a shortfall in generation, but excluding a shortfall in **embedded generation** that has been contracted to provide network support, except where prior approval has been obtained from the **Commission**;
- (aa) automatic **load** shedding due to the operation of under frequency relays following the occurrence of power system under-frequency condition;
- (ab) **load** shedding at the direction of **AEMO** or a **system operator**;
- (b) **supply interruptions** caused by a failure of the shared transmission network;
- (c) **supply interruptions** caused by a failure of **transmission connection** assets, ~~to except where the extent that the~~ **interruptions** were ~~not~~ due to inadequate planning of **transmission connections** and the **distributor** is responsible for **transmission connection** planning;
- (d) **supply interruptions** where the unplanned **interruption** frequency exceeds the threshold as set out in the following table:

<b>DISTRIBUTION BUSINESS</b>	<b>Daily unplanned interruption frequency threshold (effective 1 January 2011)</b>
Jemena Electricity Networks (Vic) Ltd	0.120
CitiPower Pty	0.066
Powercor Australia Ltd	0.3110
<del>SPL</del> AusNet Electricity Services Pty Ltd	0.190
United Energy Distribution Pty Ltd	0.100

- (e) where prior approval has been obtained from the **Commission**, load shedding due to a shortfall in demand response initiatives.

In addition, we propose to amend clause 4.2.6 of in the Electricity Distribution Code to require the electricity distributors to monitor and report on quality of supply, for customers with smart meters.

4.2.6 A **distributor** must monitor and record:

- steady state **voltages** and **voltage** variations at each zone substation in its **distribution system** which are outside the limitations specified in Table 1; and
- steady state **voltages** and **voltage** variations of a duration of more than one minute which are outside the range of steady state **voltages** specified in Table 1 at the extremity of one feeder supplied from each of those zone substations; and
- for each **customer** that has a meter installed under the Advanced Metering Infrastructure program, the number of times that the **voltage**

supplied to that **customer** is outside the range of steady state voltages specified in Table 1, for a duration of more than a minute.

We will also make a number of consequential amendments to the Electricity Distribution Code:

- delete definitions for NEMMCO and VENCORP
- add definition for AEMO – AEMO means the Australian Energy Market Operator Limited ACN 072 101 327
- replace reference to NEMMCO with a reference to AEMO in clauses 4.1.1 and 5.3(d), and in the definitions for market customer, system operator, and wholesale market
- delete reference to VENCORP in clause 5.3(d).

## 5.2 PROPOSED AMENDMENTS TO THE PUBLIC LIGHTING CODE

We propose to amend clause 2.5 of the Public Lighting Code to increase the GSL payment to be made to customers when public lighting is not repaired on a timely basis.

Where a **distributor** does not repair a public light within 2 **business days** of a **fault report** or a period otherwise agreed between the **distributor** and the person, it must pay the first person who reported the fault a minimum of ~~\$10~~\$25 if:

- (a) that person is the occupier of an immediately neighbouring residence or is the proprietor of an immediately neighbouring business; and
- (b) the public light is a distributor-owned public lighting asset for which the operation, maintenance, repair and replacement is regulated by the Australian Energy Regulator as an alternative control service under Chapter 6 of the National Electricity Rules.

# 6 NEXT STEPS

## 6.1 CONSULTATION

Readers are invited to examine this report and provide comment, preferably in electronic format, by **4 December 2015**.

Submissions can be emailed to **GSLreview@esc.vic.gov.au**.

You can also send comments by mail, marked Submission to GSL Review to:

Essential Services Commission  
Level 37, 2 Lonsdale Street  
Melbourne Victoria 3000.

The Commission can also be contacted on 03 9032 1300.

The Commission's normal practice is to make all submissions publicly available on its website. Please identify clearly any confidential or commercially sensitive information that you do not wish to be disclosed publicly.

## 6.2 FINAL DECISION

The Commission's final decision on the GSL review, and the amended Electricity Distribution Code and Public Lighting Code, will be published by the end of December 2015.

The proposed amendments will apply from 1 January 2016.