
REVIEW OF OPTIONS FOR IMPLEMENTATION OF A CUSTOMER SERVICE INCENTIVE SCHEME FOR ELECTRICITY CUSTOMERS

ISSUES PAPER

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Table of Contents

Overview.....	1
Introduction	1
Northern Territory experience	1
Approaches elsewhere	2
Developing a customer service incentive scheme for the Northern Territory	3
Introduction.....	4
Background.....	4
Service incentive schemes	5
Northern Territory experience	7
Purpose of this review.....	8
<i>Summary of the terms of reference and scope of review</i>	<i>9</i>
Service performance in the Northern Territory	10
Reporting of service performance	10
<i>2008-09 service performance.....</i>	<i>11</i>
Regulation of service performance	13
<i>Standards of Service Code.....</i>	<i>13</i>
<i>Electricity network regulation.....</i>	<i>14</i>
Casuarina outages.....	14
<i>Utilities Commission report and recommendations</i>	<i>15</i>
<i>Actual payments made by PWC.....</i>	<i>16</i>
Customer service schemes	18
Basis of service target incentive schemes	18
Practice and experience with schemes elsewhere.....	19
<i>South Australia</i>	<i>19</i>
<i>Queensland.....</i>	<i>20</i>
<i>Victoria</i>	<i>21</i>
<i>New South Wales.....</i>	<i>22</i>
<i>Western Australia.....</i>	<i>24</i>
<i>Tasmania</i>	<i>25</i>
<i>Australian Capital Territory.....</i>	<i>25</i>
<i>National</i>	<i>26</i>

Design of Customer Service Incentive Schemes.....	27
Guaranteed service level schemes.....	27
Types of service performance measures in a GSL scheme.....	27
<i>Reliability of supply measures</i>	28
<i>Quality of supply measures</i>	31
<i>Customer Service Measures</i>	31
<i>Eligible customers</i>	33
<i>Thresholds</i>	34
<i>Excluded events</i>	35
<i>Funding of a GSL scheme</i>	37
<i>Payment mechanisms</i>	38
Financial incentive scheme.....	40
<i>Types of service performance measures in a financial incentive scheme</i>	42
<i>Setting the incentive rate</i>	43
Implementation in the Northern Territory	44
Requirements of the Terms of Reference.....	44
Northern Territory specific issues affecting the design of a customer service incentive scheme.....	44
<i>PWC as a vertically integrated entity</i>	44
<i>Coverage</i>	45
<i>Firms subject to scheme</i>	45
<i>Data recording systems</i>	46
Financial incentive scheme in the Northern Territory.....	46
Appendix A	48
Terms of Reference.....	48
Appendix B	50
Index of Questions.....	50

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CHAPTER 1

Overview

Introduction

- 1.1 In November 2009, the Treasurer endorsed terms of reference for the Commission to undertake a review of options for the implementation of a customer service incentive scheme for electricity customers. The purpose of the review is to investigate and report on options for implementation of:
- a financial incentive scheme, by which the Power and Water Corporation (PWC) is rewarded or penalised through higher or lower electricity prices for service performance; and
 - a guaranteed service level scheme, by which individual customers receive payments if PWC does not meet minimum acceptable standards of service to those individual customers.

Northern Territory experience

- 1.2 In September and October 2008, a series of power outages occurred in the vicinity of the Casuarina zone substation (CZS) service area. These outages raised significant concerns about the reliability of the Northern Territory's electricity networks. As a result of these concerns, the Territory Government approved a reform program to strengthen regulatory oversight of the electricity supply industry and scrutiny of PWC. Part of this program of reform is the development of mechanisms to provide incentives to encourage PWC to improve service performance and to avoid very poor service performance.
- 1.3 In 2005, the Commission introduced the Electricity Standards of Service Code, which establishes standards of reliability, quality and customer service and requires PWC to regularly report actual service performance against specified service performance indicators.
- 1.4 In the 2009-10 to 2013-14 network price determination process, the Commission proposed to incorporate a financial incentive mechanism for the 2014-15 to 2018-19 network price Determination, on the basis that more time was needed to develop confidence in the measurement and monitoring of service performance in the Northern Territory. Current data constraints present too many problems to introduce a financial incentive scheme at an earlier stage. The Commission proposed a 'paper trial' of a financial incentive mechanism in the period prior to the 2014-15 to 2018-19 network price Determination.
- 1.5 Following the CZS outages in September and October 2008, the Minister for Essential Services indicated that the Commission would examine the possibility of PWC making payments to affected customers in recognition of poor service performance – commonly referred to as guaranteed service level or 'GSL' payments.

- 1.6 In December 2008, the Commission provided a report to the Territory Government with recommendations regarding GSL payments for those affected by the CZS. One-off, ex-gratia payments were made to affected customers, but no formal scheme was put in place.
- 1.7 The Commission further advised that, under current legislation, the Commission does not have the power to develop and implement an ongoing GSL scheme to apply generally throughout the Territory and that the responsibility for establishing a GSL scheme lies with the Territory Government.
- 1.8 The Commission outlined the actions needed to establish a GSL scheme in the Territory and advised that once the authority and rules for such a scheme were made, the Commission could be charged with administering the scheme.
- 1.9 This review is the outcome of the Commission's recommendations.

Approaches elsewhere

- 1.10 Firms operating in sectors with natural monopoly characteristics, such as electricity distribution networks, are subject to little or no competition, and have less incentive to provide good service as customers generally cannot move to an alternative provider. In the case of the electricity industry, governments or industry regulators typically monitor the performance of electricity network service providers to ensure they provide acceptable levels of service. In the Territory, this approach could be extended to the PWC generation and retail businesses, which also operate in an environment where they have no competitors.
- 1.11 The two most common approaches to performance incentive schemes adopted in Australia to provide network service providers with financial incentives to achieve a certain performance are:
 - financial incentive (also referred to as s-factor) schemes which establish financial incentives and penalties for network performance and are imposed through the network revenue or price regulation framework; and
 - GSL schemes which involve payments to customers when performance does not meet a defined standard of service.
- 1.12 Financial incentive schemes operate by allowing an increase in regulated network revenue if service improves and decreasing regulated network revenue if service performance falls or fails to meet specified targets, so that average network charges increase or decrease in line with service performance.
- 1.13 GSL schemes focus on the worst served customers, with payments made directly to those customers affected by a specific instance of poor service performance, such as a power outage.
- 1.14 All Australian jurisdictions except the Territory have established GSL schemes for electricity network service performance, although the services subject to penalty payments and the applicable payment levels vary widely.
- 1.15 Financial incentive schemes operate in Victoria, South Australia and Western Australia, while New South Wales ran a paper trial for the 2004-2009 regulatory period. Tasmania previously had a financial incentive scheme in place, but discontinued it for the 2008-2012 regulatory period due to a lack of consistent historical data. The

performance measures underlying the financial incentive schemes differ from state to state. There are no financial incentive schemes operating in Queensland or the Australian Capital Territory.

- 1.16 The legal authority and implementation mechanisms for the establishment of performance incentive schemes differ from state to state. The Australian Energy Regulator (AER) has a single service target performance incentive scheme which incorporates a financial incentive component and a GSL component. Currently, GSL schemes are imposed through industry codes or licence conditions in each jurisdiction, rather than through the AER scheme.

Developing a customer service incentive scheme for the Northern Territory

- 1.17 The purpose of this review is to recommend a course of action that will ensure electricity generation, networks and retail service standards are appropriate in the Territory, and give PWC, as the sole electricity service provider, the incentive to improve service performance.
- 1.18 The terms of reference require consideration of the merits of implementing a customer service incentive scheme for electricity generation, networks and retail services. Although customer service incentive schemes operating elsewhere in Australia are generally limited to distribution network service providers, no aspect of performance of the electricity supply industry is excluded for the purposes of this review.
- 1.19 Performance which could be subject to a GSL scheme include frequent outages or long outages (e.g. payment if a customer in an urban area experiences more than a defined number of outages in any year, or if supply is interrupted for more than a defined period). Performance which could be subject to a financial incentive scheme includes average frequency of outages, average duration of outages, and telephone answering time.
- 1.20 The matters in which the Commission has particular interest are:
- the types of performance that should be included in a possible Territory financial incentive scheme or GSL scheme, and the payment amounts and thresholds that might apply;
 - the degree to which PWC's existing systems can support a financial incentive scheme or GSL scheme and whether the costs involved in implementing systems improvements may outweigh the benefits;
 - whether a GSL scheme should apply to all customers or only to small customers, and how small customers should be defined;
 - whether a financial incentive scheme or GSL scheme should include outages related to generation;
 - funding and payments options;
 - what type of events (e.g. cyclones) should be excluded.

CHAPTER 2

Introduction

Background

- 2.1 The electricity supply industry in the Northern Territory is regulated by the *Electricity Reform Act*, *Electricity Networks (Third Party Access) Act*, *Utilities Commission Act* and associated legislation. This statutory framework was introduced on 1 April 2000.
- 2.2 The statutory framework is primarily focused on regulating the activities of electricity industry participants and customers in the Darwin-Katherine, Alice Springs and Tennant Creek power systems – referred to as the market systems. Key elements of the statutory framework are:
- third party access to the Darwin-Katherine, Alice Springs and Tennant Creek electricity networks;
 - staged introduction of retail contestability, with all customers to become contestable from 1 April 2010; and
 - an independent economic regulator, the Utilities Commission, to regulate monopoly electricity services, licence market participants and enforce regulatory standards for market conduct and service performance.
- 2.3 Electricity supply in regional and remote centres of the Territory is mainly managed by the Territory Government and the service provider through a contract for service model.¹ Three mining townships (Nhulunbuy, Alyangula and Jabiru) are each provided with electricity by the associated mining firm.
- 2.4 In the three market systems, the Power and Water Corporation (PWC) is currently the sole electricity retailer and main electricity generator, with almost 91 per cent of generation capacity.² Although there are privately owned generators operating in the Darwin-Katherine and Alice Springs systems, these suppliers generate electricity under contract for PWC rather than selling directly to an electricity retailer. PWC provides the fuel used for electricity generation and takes all electricity generated.³

¹ The regional and remote systems include: 72 communities and around 500 outstations, where essential services are provided through the Territory Government Indigenous Essential Services (IES) program; three mining towns; and eight remote towns.

² The Power and Water Corporation is a Northern Territory Government owned corporation established in June 2002 under the *Government Owned Corporations Act* and *Power and Water Corporation Act*.

³ These generators are located at Pine Creek (between Darwin and Katherine), Shoal Bay (at the Darwin City Council dump) and Brewer Estate (in Alice Springs).

- 2.5 PWC is also the network service provider and responsible for system control.⁴ The Darwin-Katherine, Alice Springs and Tennant Creek networks are not interconnected, and are separated by long distances. The networks have 730 kilometres (km) of high voltage transmission lines and 7 378 km of low voltage distribution lines, with 74 365 customers connections.⁵ This equates to a customer density of 9.2 connections per line km.⁶
- 2.6 In contrast, the customer density of a selection of other networks in Australia is:
- 4.1 connections per line km for the western New South Wales distribution network operated by Country Energy, which has over 190 000 km of distribution lines with 786 000 customer connections;⁷
 - 9.3 connections per line km for the South Australian distribution network operated by ETSA Utilities, which has over 86 276 km of distribution lines with 803 000 customer connections;⁸ and
 - 10.2 connections per line km for the Tasmanian distribution network operated by Aurora Energy which, as a distributor, has 25 050 km of distribution lines with 255 000 customer connections.⁹
- 2.7 The three main networks operated by PWC have fewer customer connections than interstate distribution networks, and the shorter network length means the customer density is comparable to an urban network. However, the distance between the three networks, the radial construction of the networks, the high incidence of storm activity including lightning strikes, high winds and torrential rain in the Top End, and the behaviour of fruit bats in roosting on power lines have countervailing adverse implications for network reliability and capital and maintenance expenditure.

Service incentive schemes

- 2.8 Standards of service are an important feature in any industry. However, firms operating in sectors with natural monopoly characteristics, such as electricity distribution networks, are subject to little or no competition, and have less incentive to provide good service as customers generally cannot move to an alternative provider. In the case of the electricity industry, governments or industry regulators typically monitor the

⁴ The System Controller has the function of monitoring and controlling the operation of the power system to ensure the system operates reliably, safely and securely in accordance with the System Control Technical Code. The System Control function is held by the PWC System Control unit, subject to a System Control licence granted by the Commission.

⁵ Power and Water Corporation, September 2009, 2008-09 Annual Report, page 23. PWC defines high voltage transmission lines as 33 kilovolt (kV) and above, and low voltage distribution lines as 22/11 kV and below. In other Australian jurisdictions, the regulation of service incentive schemes differs between transmission networks and distribution networks. However, consistent with general network price regulation practice in the Northern Territory, the Commission considers it appropriate for both transmission and distribution to be treated as distribution in any Territory scheme, with the term 'network services' throughout this paper referring to both.

⁶ Customer density is calculated as customer connections per network (high and low voltage) line km.

⁷ Country Energy, Electricity Network Performance Report 2008-09, page 8.

⁸ ETSA Utilities, 2008 Annual Report, page 40.

⁹ Aurora Energy, 2009 Annual Report, page 6; and Aurora Energy website, [www.auroraenergy.com.au>About Aurora](http://www.auroraenergy.com.au>AboutAurora), accessed 10 March 2010.

performance of electricity network service providers to ensure they provide acceptable levels of service. In the Territory, this approach could be extended to PWC's generation and retail businesses which also operate in an environment where they currently have no competitors.

- 2.9 An electricity network service provider may seek to reduce costs in two ways:
- by becoming more efficient; or
 - by reducing expenditure by carrying out less capital and maintenance expenditure.
- 2.10 Cost reductions from genuine operating efficiencies benefit customers as these savings will be taken into account in future reviews of network charges. However, savings realised from inefficiently low levels of capital and maintenance expenditure are not desirable as they will eventually result in reduced network reliability, and decline in standards of service for customers.
- 2.11 For this reason, the regulation of electricity networks commonly involves the industry regulator defining standards of service to ensure that customers receive a level of service at a price they are willing to pay and at which network service providers are commercially viable. The regulator can then report the performance of the network service provider against defined standards of service indicators, and may also use this data to establish financial incentives for performance.
- 2.12 The two most common approaches adopted in Australia to provide network service providers with financial incentives to achieve a certain performance are:
- financial incentive (also referred to as s-factor) schemes which establish financial incentives and penalties for network performance and are imposed through the network revenue or price regulation framework; and
 - guaranteed service level (GSL) schemes which involve payments to customers when performance does not meet a defined standards of service.
- 2.13 Additionally, network service providers may commit to self imposed standards of service, for example by agreeing to voluntarily make a payment to customers for breach of a standard defined in a customer charter.
- 2.14 The usual form of a financial incentive scheme is to reduce network charges when performance falls below benchmark levels, and conversely increase network charges when performance exceeds benchmark service levels. The size of the adjustment would generally be proportional to the difference between actual and benchmark levels, but may be capped at particular intervals. With this type of incentive, a regulator attempts to limit or avoid 'gaming' behaviour by network service providers and ensure that price adjustments reflect the levels of service actually received by consumers and the value placed by customers on that service.
- 2.15 To the extent that the network service provider can achieve or exceed the set reliability targets at a lower cost than implied by the expenditure benchmarks, they can keep additional revenue within the regulatory period. If the network service provider underperforms against the targets, the revenue will be reduced over that period.
- 2.16 A financial incentive scheme is based on average performance for customers. If service performance is averaged then some customers may be receiving better service than others for the same payment. Therefore, although average performance is important, there is a strong case for identifying instances of very poor service

performance, so that effort is made to deliver at least a minimum acceptable standard of service.

- 2.17 A GSL scheme supports a financial incentive scheme with a system of payments to individual customers who experience occasions of very poor service performance. Under such an approach, the network service provider is required to make payments to customers who experience a level of service below a benchmark defined by the regulator.
- 2.18 Customer service incentive schemes must recognise the physical characteristics and performance capabilities of the underlying system, including the responsibility of the network service provider to take reasonable steps to avoid or reduce the affect on service performance of problematic operating or environmental conditions. As a result, the measures and targets relating to standards of service differ between jurisdictions, network service providers and regions.

Northern Territory experience

- 2.19 In September and October 2008 there were lengthy power outages in the northern suburbs of Darwin following equipment failure in and around the Casuarina zone substation (CZS).
- 2.20 In response to the community disruption and concern about the performance of PWC's electricity network assets, the Territory Government commissioned Mervyn Davies, a former senior executive of Energy Australia and a member of the Board of Western Power, to undertake the Independent Enquiry into Casuarina Substation Events and Substation Maintenance Across Darwin (the Davies Enquiry).
- 2.21 Additionally, the Minister for Essential Services indicated that the Commission would examine the possibility of PWC making payments to affected customers in recognition of poor service performance.¹⁰
- 2.22 In December 2008, the Commission reported on the merits of requiring PWC to make a payment to customers affected by the CZS outages in recognition of poor service performance. The Commission concluded that existing legislation did not give the Commission the authority to implement a GSL scheme, but that the Territory Government should take steps to establish a GSL scheme applying to the electricity supply industry. The Commission advised that the key aspects of a GSL scheme were:
- the types of services subject to a GSL;
 - the Territory specific thresholds for a GSL;
 - the types of excluded events;
 - the amount of the payment for each type of breach of the GSL; and
 - the method by which GSL payments are to be funded.¹¹

¹⁰ Hansard: Parliamentary Record No. 2, 21 October 2008, Minister of Essential Services, Ministerial Statement – Casuarina Zone Substation and Power Outages.

¹¹ Utilities Commission, December 2008, Casuarina Power Outages Recommendations Regarding Guaranteed Service Level Payments.

- 2.23 The Commission also recommended that an appropriate model to determine any one-off ex-gratia payment by PWC to customers affected by the CZS outages in recognition of poor service was the Australian Energy Regulator (AER) Electricity Distribution Network Service Providers Service Target Performance Incentive Scheme.¹² The AER scheme provided a process for identifying qualifying customers, and determining the amount of the payment.
- 2.24 Separately, the Commission proposed introducing a network service incentive scheme as part of the 2009-10 to 2013-14 networks price Determination made in March 2009. The Commission concluded that a paper trial should be implemented during the 2009-10 to 2013-14 regulatory period prior to considering the introduction of financial incentives or penalties for network performance from 1 July 2014.¹³
- 2.25 The Electricity Standards of Service Code establishes a service standards monitoring scheme which requires PWC to report annually against 46 indicators of electricity generation, networks and customer service performance, and sets a defined standard of service for 45 indicators.¹⁴ The initial standards were to apply until June 2009. However, in June 2009 the Commission approved an extension in the initial standards until June 2011, with the intention of reviewing the standards before then.¹⁵
- 2.26 A parallel inquiry into the adequacy of current standards embodied in the Electricity Standards of Service Code is scheduled to commence in April 2010, with a final report to the Minister in November 2010.
- 2.27 In August 2009, the Territory Government announced a priority reform program to strengthen regulatory oversight of the electricity supply industry and improve system reliability and performance¹⁶. The reform program included a review of options for implementation of a customer service incentive scheme for electricity customers of which this review and paper is a part.

Purpose of this review

- 2.28 The Treasurer endorsed the terms of reference at Attachment A for the Commission to undertake a review of options for the implementation of a customer service incentive scheme for electricity customers in November 2009.
- 2.29 The Commission is required to review and report on options for implementation of a customer service incentive scheme under the Electricity Standards of Service Code. The purpose of the review is to recommend a course of action that will ensure electricity generation, networks and retail service standards are appropriate in the

¹² Australian Energy Regulator, November 2009, Electricity Distribution Network Service Providers Service Target Performance Incentive Scheme. This scheme applies to network service providers subject to the National Electricity Law, and where the jurisdiction does not apply a GSL scheme.

¹³ Utilities Commission, March 2009, Networks Pricing 2009 Regulatory Reset Final Determination, page 114.

¹⁴ Utilities Commission, January 2006, Electricity Standards of Service Code; Power and Water Corporation, May 2006, Initial Minimum Standards for Reliability Standards Indicators; and Power and Water Corporation, June 2006, Proposed Minimum Quality and Customer Service Standards.

¹⁵ Utilities Commission, June 2009, Approval of Minimum Standards of Service Extension to 30 June 2011.

¹⁶ Hon Delia Lawrie, MLA, Treasurer, Media release, 13 August 2009, New Utilities Commissioner appointed.

Northern Territory, and give electricity service providers the incentive to improve service performance.

Summary of the terms of reference and scope of review

2.30 The Treasurer has directed the Commission to:

- report on the merits of implementing a customer service incentive scheme or similar service performance incentive scheme in the Territory;
- identify options for the design of a customer service incentive scheme in the Territory;
- recommend a preferred option for the design of a customer service incentive scheme, and provide detailed plans for implementation of that recommendation.

2.31 In undertaking the review, the Commission is to take into account:

- any recent relevant policy developments and regulatory practice in other jurisdictions, particularly the development of the service target performance incentive scheme by the AER;
- the capability of PWC systems to reliably record the impact and duration of interruptions to supply or poor service performance; and
- all relevant economic and policy developments, including current and forecast economic conditions.

2.32 The Commission will focus on identifying a mechanism or scheme(s) that will provide incentives to encourage service performance that is better than a defined target, and to avoid very poor service performance. The Commission will consider thresholds for very poor service performance as part of this review. However, service performance targets will be considered in a separate and parallel review of electricity standards of service.

2.33 The Commission notes that the terms of reference require consideration of the merits of implementing a customer service incentive scheme for electricity generation, networks and retail services. Although customer service incentive schemes operating elsewhere in Australia are generally limited to distribution network service providers, no aspect of performance of the electricity supply industry is excluded for the purposes of this review.

2.34 The Commission's approach to the review and the consultation process is set out in table 2.1 below.

Table 2.1: Review timetable

Due Date	Action
Wednesday 24 March 2010	Release of Issues Paper
Friday 23 April 2010	Submissions on Issues Paper due
Friday 28 May 2010	Release of Draft Report
Friday 25 June 2010	Submissions on Draft Report due
Friday 23 July 2010	Final Report provided to Minister

CHAPTER 3

Service performance in the Northern Territory

Reporting of service performance

- 3.1 PWC has reported on reliability, quality and customer service performance for electricity generation, networks and customer service in the market systems to the Commission annually since 2005-06. The Commission has used this data to prepare an analysis of performance, which has been released along with the PWC service performance report.¹⁷
- 3.2 PWC reports against the following performance indicators of reliability, quality and customer service:
- the average minutes of off supply per customer for networks and generation (known as system average interruption duration index – SAIDI);
 - the average number of interruptions per customers for networks and generation (known as system average interruption frequency index – SAIFI);
 - the average interruption duration per customer for networks and generation (known as customer average interruption duration index – CAIDI);
 - the number of feeders that experience more than 15 (for interconnected networks) and 27 (for radial networks) interruptions a year;
 - the percentage of customers supplied by feeders that experience more than 15 (for interconnected networks) and 27 (for radial networks) interruptions a year;
 - the number of feeders that experience more than 1500 (for interconnected networks) and 2500 (from radial networks) minutes of interruptions a year;
 - the number of complaints received in relation to voltage events e.g. voltage dips, swells, spikes;
 - the percentage of new connections provided within 24 hours to an existing property, within 5 working days to a property in a new urban subdivision, and within 10 weeks where minor extension or augmentation required;
 - the number and percentage of telephone calls responded to within 20 seconds of the customer selecting to speak to a person; and
 - the number of customer complaints.¹⁸
- 3.3 Interruptions to supply of less than one minute are defined as momentary interruptions, and are generally not included when measuring the duration and frequency of power

¹⁷ For example, refer Utilities Commission, December 2008, Power and Water's Electricity Service Performance 2007-08, and Power and Water Corporation, October 2008, Standards of Service 2007-08 Key Service Performance Indicators.

¹⁸ Utilities Commission, January 2006, Electricity Standards of Service Code, Schedules 1 and 2.

outages. In the Territory, momentary interruptions could be experienced from vegetation or fruit bats coming into brief contact with power lines.

- 3.4 Victoria is the only jurisdiction in Australia to currently include the frequency of momentary interruptions in a customer service incentive scheme. For the purposes of this paper, power outages of less than one minute are not measured for reporting of the duration and frequency of power outages.
- 3.5 The Electricity Standards of Service Code allows PWC to report adjusted SAIDI, SAIFI and CAIDI indicators to exclude the effect of severe interruptions to supply using the “2.5 beta method”, which is an objective mathematical methodology for identifying outlying performance.¹⁹ However, adjusted and unadjusted data must be provided for each indicator.

2008-09 service performance

- 3.6 This section provides a summary of the service performance achieved by PWC for 2008-09.
- 3.7 Tables 3.1 to 3.4 provide 2008-09 performance data reported by PWC for:
- electricity networks SAIDI and SAIFI;
 - electricity generation SAIDI and SAIFI;
 - poorly performing network feeders; and
 - customer service.
- 3.8 Reporting of networks and generation reliability indicators in the Territory includes planned and unplanned outages on the basis that customers are inconvenienced by the absence of power supply, regardless of the cause.
- 3.9 However, the Commission notes that customer service incentive schemes operating in the NEM jurisdictions do not include planned outages in reliability indicators.

Table 3.1: Electricity network SAIDI and SAIFI for 2008-09 (unadjusted)

Region	Network SAIDI (minutes)	Standard (minutes)	Network SAIFI (interruptions)	Standard (interruptions)
Darwin	386	220	6.2	4.2
Katherine	235	401	5.2	9.6
Tennant Creek	245	411	4.2	9.8
Alice Springs	593	108	3.7	2.9

Source: Power and Water Corporation, October 2009, Standards of Service 2008-09 Key Service Performance Indicators.

- 3.10 The adjusted SAIDI and SAIFI results reported by PWC for 2008-09 for Darwin and Alice Springs networks were lower than the unadjusted results (reported above), but still above (and in breach of) the standard set through the Standards of Service Code.

¹⁹ For a description of the 2.5 beta method, refer to the Institute of Electrical and Electronic Engineers, [Working Group on System Design, January 2003, Classification of Major Event Days](#).

The Darwin results were adjusted by PWC to exclude some of the outages caused by the equipment failures associated with CZS, and the Alice Springs results were adjusted to exclude an outage associated with a severe storm on 22 September 2008.

3.11 Electricity generation SAIDI and SAIFI in each region in 2008-09 was lower than the standard.

Table 3.2: Electricity generation SAIDI and SAIFI for 2008-09

Region	Generation SAIDI (minutes)	Standard (minutes)	Generation SAIFI (interruptions)	Standard (minutes)
Darwin	33.4	42.7	3.0	3.9
Katherine	24.1	25.7	1.5	1.1
Tennant Creek	49.6	125	1.7	12.5
Alice Springs	3.6	122.5	0.5	3.6

Source: Power and Water Corporation, October 2009, Standards of Service 2008-09 Key Service Performance Indicators.

3.12 The Electricity Standards of Service Code defines a poorly performing feeder (that is, a segment of the network) differently depending on network and feeder type. For interconnected networks where supply can be maintained via a number of connections, a poorly performing feeder is considered to be one which experiences more than 15 interruptions or cumulative interruptions of more than 1500 minutes in the year. For radial distribution networks where there is only a single supply path available, a poorly performing feeder is considered to be one which experiences more than 27 interruptions or cumulative interruptions of more than 2500 minutes of interruptions in the year

Table 3.3: Electricity networks poorly performing feeders 2008-09

Interconnected networks	Feeders with >15 interruptions		Percentage of customers on feeders with >15 interruptions		Feeders with >1500 minutes of interruption	
	Actual	Standard	Actual	Standard	Actual	Standard
Darwin - urban	6	10	6	27	11	9
Alice Springs	2	4	4	10	4	4

Radial networks	Feeders with >27 interruptions		Percentage of customers on feeders with >27 interruptions		Feeders with >2500 minutes of interruption	
	Actual	Standard	Actual	Standard	Actual	Standard
Darwin - rural	5	8	17	50	8	9
Katherine	2	7	4	50	2	6
Tennant Creek	0	3	0	32	0	3

Source: Power and Water Corporation, October 2009, Standards of Service 2008-09 Key Service Performance Indicators.

- 3.13 The results reported by PWC for indicators for poorly performing feeders were better than the standard set under the Electricity Standards of Service Code.
- 3.14 Performance against customer service indicators are reported on a Territory-wide basis.

Table 3.4: 2008-09 Customer service performance

	Percentage of connections to existing customers >24 hours		Percentage of connections to new subdivisions >5 days		Percentage of connections requiring extension/augmentation >10 days	
	Actual	Standard	Actual	Standard	Actual	Standard
All customers	0.77	2	8.7	10	66.5	35

	Telephone calls answered within 20 seconds		Percentage of telephone calls answered within 20 seconds	
	Actual	Standard	Actual	Standard
All customers	87 013	58 679	62	63

Source: Power and Water Corporation, October 2009, Standards of Service 2008-09 Key Service Performance Indicators.

- 3.15 PWC reported that it did not meet the standard for new connections where extension or augmentation was required in 2008-09 due to resources being focussed on network maintenance work. The failure to meet the required standard in relation to telephone response time was attributed to system and resource constraints which PWC advise have since been addressed.

Regulation of service performance

- 3.16 The *Electricity Reform Act* section 92 requires the Commission to impose minimum standards of service for the supply of electricity, that is bundled generation, networks and retail services, for non contestable customers of all licensed retailers in the Northern Territory.
- 3.17 The Electricity Networks (Third Party Access) Code, clause 9A, obliges the network service provider to use reasonable endeavours to maintain network service standards at a specified level.
- 3.18 The *Utilities Commission Act*, ss6(1)(c) and 6(3) give the Commission the authority to:
- develop, monitor and enforce compliance with, and promote improvement in standards and conditions of service and supply; and
 - do all things that are necessary or convenient to be done for or in connection with or incidental to the performance of such functions.

Standards of Service Code

- 3.19 In 2005, the Commission introduced the Electricity Standards of Service Code, which establishes standards of reliability, quality and customer service for the Territory

electricity supply industry and requires PWC to regularly report actual service performance against defined service performance indicators.

- 3.20 The Electricity Standards of Service Code does not include any incentive or penalty mechanisms, with the Commission taking the view that decisions on these matters should be made once reporting mechanisms were effective and the standards used were based on accurate performance data.
- 3.21 To date, the Commission's analysis of the performance data reported by PWC has concentrated on providing a general overview of performance, and examining any performance indicator that involves a second successive year breaching the standard set for that indicator. The Commission considered that more detailed analysis should wait until sufficient history had been established. The Commission took the view that an assessment of service performance should be deferred until the accuracy and consistency of PWC's performance data were settled.
- 3.22 The Commission recognised that there was scope for improvement in the standards and the monitoring scheme not only for improvement in the quality of the data, but also with respect to the appropriateness of the standards set and the level of detail reported.

Electricity network regulation

- 3.23 As part of the 2009-10 to 2013-14 network price determination process, the Commission considered the scope for the introduction of an incentive or penalty mechanism in support of the Electricity Standards of Service framework.
- 3.24 At that time, the Commission took the view that it was an issue of *when* rather than *if* such performance incentive arrangements would be included in the Territory's network price regulation framework.
- 3.25 However, the Commission decided to defer the adoption of performance incentives arrangements until the next network price determination, on the basis that more time was needed to develop confidence in the measurement and monitoring of service performance in the Territory. Currently, data constraints present too many problems to introduce a financial incentive scheme involving monetary incentives and penalties at that time.
- 3.26 The 2009-10 to 2013-14 network price determination concluded that there would be no financial incentive scheme during the third regulatory period, although a 'paper trial' of a service incentive (s-factor) scheme would be instituted covering the third regulatory period.²⁰

Casuarina outages

- 3.27 In September and October 2008, a series of power outages occurred in the CZS service area. These outages raised significant concerns about the reliability of the Territory's electricity networks.

²⁰ Utilities Commission, March 2009, Networks Pricing 2009 Regulatory Reset Final Determination, page 11.

3.28 Although the subsequent Davies Enquiry only looked at the adequacy and reliability of zone substations, the report indicated that the problems of inadequate maintenance effort, record keeping and asset management systems could be systemic throughout PWC, raising broader questions about asset performance, and the adequacy of capital investment and maintenance programs for electricity infrastructure across the Territory.²¹ Although the CZS outages received substantial media coverage and public interest, PWC customers, both in the Darwin region and elsewhere, experience supply interruptions for many other reasons, such as severe weather, rapid vegetation growth in the wet season and fruit bats roosting on electricity lines.

Utilities Commission report and recommendations

- 3.29 The Commission provided a report to Territory Government with recommendations regarding GSL payments for those affected by the CZS outages in December 2008.²²
- 3.30 The Commission recommended that an appropriate model to determine any one-off ex-gratia payment by PWC to customers affected by the CZS outages in recognition of poor service was the AER service target performance incentive scheme.
- 3.31 Based on the AER scheme, the Commission recommended that the payment amount for each qualifying customer be the greater of the following amounts:
- \$80 for each single unplanned interruption that was at least 12 hours in duration; and
 - \$125 if the total duration of unplanned interruptions exceeded 20 hours.
- 3.32 Further, to qualify for such payments, the customer should be:
- a customer with premises directly affected by one of the CZS events identified by the Davies Enquiry as occurring during September and October 2008; and
 - the named electricity account holder for a premises with an electricity meter.
- 3.33 Only one payment should be made per electricity account regardless of the number of account holders or premises listed on the account affected by the event.
- 3.34 The Commission acknowledged that such payments would not and were not intended to directly compensate customers for financial losses suffered as a result of the CZS outages. Rather, the GSL payments would serve as an acknowledgement by PWC of poor service performance.
- 3.35 Further, the Commission recommended that making such payments should only be authorised by the Territory Government if there was no admission of legal liability. Equally, the receipt of such a payment should not in any way alter or diminish any rights of customers under applicable legislation, common law or contract.
- 3.36 The Commission advised that, under current legislation, the Commission is not empowered to develop and implement a GSL scheme. The Commission took the view that there was no existing head of power to impose such a scheme via licence

²¹ Mervyn Davies, February 2009, Independent Enquiry into Casuarina Substation Events and Substation Maintenance Across Darwin: Final Report.

²² Utilities Commission, Casuarina Power Outages: Recommendations Regarding Guaranteed Service Level (GSL) Payments, December 2008

conditions. Moreover, the powers conferred on the Commission by the *Electricity Reform Act* are limited to setting minimum standards and monitoring PWC's performance against minimum standards set for non-contestable electricity customers.

- 3.37 The Commission concluded that the responsibility for establishing a GSL scheme in the Territory lies with the Territory Government. Once the authority and rules for such a scheme were made, the Commission could be charged with administering the scheme. In this context, the Commission recommended that the Territory Government consider developing legislation to establish a GSL regime applying in the Territory's electricity supply industry.
- 3.38 The Territory Government accepted the Commission's recommendation with respect to GSL payments and asked PWC to provide rebates to customers as if a GSL scheme were already in place.²³
- 3.39 Further, in August 2009, the Territory Government directed the Commission to review the options for implementation of a customer service incentive scheme.

Actual payments made by PWC

- 3.40 In December 2009, PWC made the following statement to advise customers that a rebate would be paid to customers affected by the CZS outages in September and October 2008:

The decision and consideration of implementing a broader rebate scheme will bring the Territory into line with schemes elsewhere and acknowledges the inconvenience experienced by customers.

The rebates will be either:

- *\$80 if the total duration of unplanned interruptions experienced by the customer associated with the Casuarina zone outages in September and October 2008 was at least 12 hours in duration; or*
- *\$125 if the total duration of unplanned interruptions experienced by the customer associated with the Casuarina zone outages in September and October 2008 exceeded 20 hours.*

This exceeds the recommendations made by the Utilities Commission and Power and Water estimate that approx 5,000 customers will be eligible for a \$80 rebate and 400 for a \$125 rebate.

²³ [Minister for Essential Services, 15 December 2008, Media release, Utilities Commission releases report.](#)

*Power and Water will notify all eligible customers that a rebate will be credited to their account. This credit will be made on their next account.*²⁴

- 3.41 Based on advice from PWC and media reports, the Commission understands that these payments were made.

²⁴ [Power and Water Corporation, 15 December 2008, Media release, Power and Water to rebate customers.](#)

CHAPTER 4

Customer service schemes

Basis of service target incentive schemes

- 4.1 Service target performance incentive schemes can be grouped into three categories:
- public reporting schemes;
 - GSL schemes; and
 - financial incentives (s-factor) schemes.
- 4.2 A public reporting scheme has been operating in the market systems since the introduction of the Electricity Standards of Service Code in December 2005. A public reporting scheme can play an important role in informing customers, media and other stakeholders so that they can assess and make judgments on the level of performance of a particular network service provider compared to minimum standards or other similar providers. The information can also be used for negotiations between consumers and network service providers on local or generalised quality improvements.
- 4.3 The reporting option is relatively straight forward to implement and is arguably a pre-requisite for all other service incentive schemes.
- 4.4 A GSL scheme involves payments by the network service provider to individual customers who have received a very poor level of service.
- 4.5 GSL schemes are designed to set a floor to the level of service that a customer is entitled to receive. This is done by setting a threshold level for a particular aspect of service performance. If the actual level of service falls short, the network service provider is required to make a payment to the affected customers. The threshold levels and the related customer payments are set in advance, so that customers know the standard of service they should expect to receive, and the network service provider knows the consequences if those service levels are not met. Primarily, GSL schemes are designed to provide an incentive to improve service to the worst served customers.
- 4.6 There is a definite distinction between GSL payments and 'compensation' payments for power outages. GSL payments are an amount paid to customers that receive service levels below a predetermined threshold. Therefore, the payment is seen as a recognition of poor service rather than as compensation. Compensation for power outages involves customers making claim for loss or damage arising from loss of supply or from poor quality of supply.
- 4.7 Whereas a GSL scheme is based on outcomes for individual customers, a financial incentive scheme is based on the performance of the system as a whole.
- 4.8 The usual form of a financial incentive scheme is to reduce network charges when performance falls below benchmark levels, and conversely increase network charges

when performance exceeds benchmark service levels. The size of the adjustment would generally be proportional to the difference between actual and benchmark levels. In general, financial incentive schemes are aimed at maintaining and improving average network performance and provide a direct link between a network service provider's revenue and the standards of service it provides.

- 4.9 A financial incentive scheme generally involves the addition of an 'S' factor into the existing CPI-X price control formula, where the 'S' in any one year is calculated by multiplying a pre-determined incentive rate for each key performance indicator by the performance gap (that is, the difference between target performance and actual performance) relative to the performance gap in the previous year, for that performance indicator. The calculated results for each performance indicator are summed to give the 'S' factor for that year.
- 4.10 Power outages can occur from planned outages (e.g. when equipment is removed from service for scheduled maintenance) or unplanned outages (e.g. when equipment is not available for service due to equipment failure). Although data on the total frequency and duration of power outages (including planned and unplanned) may be reported, the general practice in Australia is to exclude planned outages when determining reliability indicators for GSL and financial incentive schemes.

Practice and experience with schemes elsewhere

- 4.11 All Australian jurisdictions except the Territory have established GSL schemes for distribution network service, although the services subject to penalty payments and the applicable payment levels vary widely.
- 4.12 Financial incentive schemes operate in Victoria, South Australia and Western Australia, while New South Wales ran a paper trial for the 2004-2009 regulatory period. Tasmania had a financial incentive scheme in place, but discontinued it for the 2008-2012 regulatory period due to a lack of consistent historical data. There are no financial incentive schemes operating in Queensland or the Australian Capital Territory.
- 4.13 The Ministerial Council on Energy (MCE) transferred the economic regulation of electricity distribution networks to the AER on 1 January 2008. The National Electricity Rules require the AER to publish a service target performance incentive scheme, which occurred in November 2009.²⁵ However, for the first revenue determination for each jurisdiction, transitional arrangements require the AER to have regard to any average or minimum service standards and GSL schemes that apply to distribution network service providers under jurisdictional electricity legislation.

South Australia

- 4.14 The Essential Services Commission of South Australia (ESCOSA) began investigating service incentives for distribution network service providers in early 2002. From mid-2003, a series of consultation papers were published, setting out a possible

²⁵ Australian Energy Regulator, November 2009, Electricity Distribution Network Service Providers: Service Target Performance Incentive Scheme.

framework for regulating and providing incentives for service quality as part of the electricity distribution price review for the 2005-2010 regulatory period.

- 4.15 The development of the framework was guided by the outcomes of a consumer survey conducted in 2002 in which approximately 85 per cent of respondents claimed they were satisfied with their existing level of distribution service and were not willing to pay for further improvements. ESCOSA therefore sought to develop a framework that focused on providing an incentive to improve the level of service to the worst served distribution customers while maintaining the average level of service to all customers.
- 4.16 The framework adopted by South Australia in 2005 had three components:
- average standards, which were established to ensure that the network service provider did not focus solely on improving service to the worst served customers at the expense of all other customers;
 - service incentive scheme, which focused on the worst served distribution customers and contained two measures of distribution performance - the total duration of interruptions to supply received by the worst served 15 per cent of customers and the percentage of telephone calls responded to within 30 seconds; and
 - guaranteed service level scheme, which required the network service provider to make payments to customers that receive service levels below a predetermined threshold.
- 4.17 ESCOSA's 2005 Electricity Distribution Price Determination established a "regulatory bargain" between electricity consumers and the network service provider, wherein the provision of a reasonable return on investment to the network service provider was balanced with the need for sustainable services at agreed standards to be provided.
- 4.18 For the 2010-2015 price determination, ESCOSA made few changes from its previous regulatory period for 2005-2010, and largely retained the existing set of average reliability and customer service standards, as well as the quality of supply standards and the GSL scheme. Although the GSL scheme is to be retained, the values of the payments are to be indexed to the CPI for this new regulatory period.²⁶

Queensland

- 4.19 The Queensland Competition Authority (QCA) first raised the issue of service quality as part of the electricity distribution price review for the 2001-2005 regulatory period. Given the lack of comprehensive and consistent historical data, the QCA decided that establishing an incentive based service quality regime was not possible, but undertook to commence collection of data to enable development an incentive based performance monitoring regime for commencement in the following regulatory period.
- 4.20 From mid-2002, a series of consultation papers were published, looking at the characteristics of service quality incentive regimes, the most important measures to target and how service quality incentives might interact with other parts of the regulatory regime. However, following severe power outages, in April 2004 the Queensland Government commissioned a comprehensive report (the EDSD Review)

²⁶ Essential Services Commission of South Australia, November 2008, SA Electricity Distribution Service Standards 2010-2015 Final Decision, pages 5 and 10.

on the performance of Queensland's electricity distribution networks. In light of the changes resulting from the recommendations of the ESD Review, the QCA decided that implementing an incentive scheme was not appropriate.²⁷

- 4.21 Although Queensland does not have a financial incentive scheme, the Queensland Electricity Code establishes a public reporting scheme for network service providers against certain minimum standards and a GSL scheme. Minimum standards are established for duration (SAIDI) and number (SAIFI) of interruptions for reporting purposes, but no rewards or penalties apply with respect to achievement of these service quality outcomes.
- 4.22 The Queensland Electricity Code provides for payments to be made to customers for breaches of the following guaranteed service levels:
- wrongful disconnection;
 - connections not made within a specified timeframe;
 - not responding to an inquiry in relation to loss of hot water supply within a specified timeframe;
 - not attending an appointment within a specified timeframe;
 - not giving at least two days notice of a planned interruption; and
 - not meeting specified reliability parameters.
- 4.23 GSL payments are customer initiated payments (i.e. customers must apply for payment when they consider a breach has occurred), rather than the network service provider being required to make GSL payments on a proactive basis.
- 4.24 The QCA has recently reviewed these standards and GSL arrangements in the lead up to the commencement of the 2010-2015 regulatory period, resulting in some minor amendments to the Queensland Electricity Code. In an effort to restore value eroded by inflation, the QCA recommended that the Queensland Electricity Code be amended to increase current GSL payment amounts by approximately 30 per cent. For instance, the annual cap an individual customer may receive (excluding GSL payment for wrongful disconnection) has increased to \$416 per annum.²⁸
- 4.25 Amendment of the Queensland Electricity Code was approved by the Minister in November 2009. Further references to the Queensland scheme in this Issues Paper reflect these amendments.

Victoria

- 4.26 The Essential Services Commission of Victoria (ESCV) first adopted a service reliability framework as part of its 2001-2004 Electricity Distribution Price Determination. This determination introduced two financial incentives for service reliability:
- the addition of an 'S' term to the CPI-X price controls that adjusts the annual price caps for each network service provider to reflect actual service performance

²⁷ Queensland Competition Authority, April 2005, Final Determination – Regulation of Electricity Distribution, page 201.

²⁸ Queensland Competition Authority, April 2009, Review of Electricity Distribution Network Minimum Standards and Guaranteed Service Levels to apply in Queensland from 1 July 2010: Final Decision, page 17.

outcomes relative to the targets. The targets cover total minutes off supply, interruption frequency and duration for both planned and unplanned outages, defined separately for each network service provider and for each of the four major feeder network types; and

- a requirement to make 'Guaranteed Service Level' payments to network users who experience reliability that is worse than specified performance thresholds.

4.27 Under the GSL scheme, payments are measured according to the cumulative duration of supply interruptions and the frequency of supply interruptions. The published a draft report in review of wrongful disconnection payments in November 2009, in which the Commission discusses the possibility of redesigning the scheme to be either more targeted or to provide for greater discretion in the way it is applied.²⁹

4.28 These incentive schemes are implemented via the distribution network price determinations, rather than being established under a separate service standards framework.

4.29 In the lead up to the 2006-2010 regulatory period, ESCV reviewed the operation of the existing scheme. Based on experience in the previous regulatory period and other information provided by stakeholders, minor adjustments were made to both mechanisms - the service measures included in the S-factor scheme were broadened and some of the incentive rates that translate performance against the service targets into financial rewards or penalties were increased.

New South Wales

4.30 A Guaranteed Customer Service Standards (GCSS) scheme in New South Wales is implemented via licence conditions. Some conditions relating to guaranteed customer service standards are imposed the Electricity Supply (General) Regulation, with others imposed by the Minister and implemented via licence conditions requiring that a distribution network service provider must include certain guaranteed customer service standards in the customer connection contracts issued by that network service provider.

4.31 The regulation provides for payments to be made to customers for breaches with respect to guaranteed service levels for the following services:

- timely provision of services;
- timely notice of planned interruptions to supply;
- repair of faulty street lights;
- punctuality in keeping appointments; and
- time limit for new connection services.

4.32 Following a review by the Independent Pricing and Regulatory Tribunal (IPART) in August 2005, the then Minister for Energy imposed additional distribution licence conditions relating to reliability performance which took effect from 1 December 2007.³⁰

²⁹ Essential Services Commission of Victoria, November 2009, Review of Wrongful Disconnection Payment Draft Report .

³⁰ Independent Pricing and Regulatory Tribunal, April 2004, Review of Guaranteed Customer Service Standards and Operating Statistics - Final Recommendations - Report to the Minister.

- 4.33 In the lead up to the 2004-2009 regulatory period, IPART undertook consultations on providing incentives for service quality for New South Wales distribution network service providers. The issues paper focused mainly on the choice of measures, the nature of performance targets, and the rewards or penalties linking service quality and distribution network service provider revenue using an s-factor approach.³¹
- 4.34 The paper also discussed the links between an s-factor scheme and the existing GCSS scheme, querying whether the additional incentives of an s-factors scheme were necessary, given that some incentives already exist for service providers to improve service quality for the worst-served customers through the GCSS scheme. IPART took the view that service quality incentives could best be provided through a combination of an s-factor financial incentive, GCSS, and reporting and publication of key reliability data.
- 4.35 As part of its final determination for the 2004-2009 regulatory period, IPART decided to introduce an integrated package of measures to provide incentives for service quality, consisting of the following components:³²
- the collection and publication of performance statistics on service standards, covering service reliability, quality of supply and customer service;
 - a 'paper trial' s-factor, focusing on service reliability measures. No monetary incentives for service quality were introduced during the 2004-09 regulatory period; and
 - subject to Ministerial approval, an expanded set of GCSS, covering service reliability, quality of supply and some aspects of customer service (approved by the Minister in August 2005 to take effect from 1 December 2007, as discussed above).
- 4.36 The s-factor financial incentive mechanism was based on reliability performance measured by system wide SAIDI. IPART concluded that:
- Because SAIFI affects SAIDI, an S-factor that was based on these two measures would implicitly be attaching greater weight to the frequency of interruptions than the duration of interruptions. The Tribunal considers that there is insufficient evidence to conclude that customers are significantly more concerned about the frequency of interruptions compared to the duration of interruptions.*³³
- 4.37 In November 2007, IPART released an information paper looking at the first two years of data and exploring how including it in the current price setting formula would have affected each distribution network service provider's revenue.³⁴ Two years of service reliability performance data revealed that the distribution network service providers

³¹ Independent Pricing and Regulatory Tribunal, May 2003, Providing Incentives for Service Quality In NSW Electricity Distribution - An Issues Paper.

³² Independent Pricing and Regulatory Tribunal, June 2004, NSW Electricity Distribution Pricing 2004/05 to 2008/09 - Final Report, page 119.

³³ Independent Pricing and Regulatory Tribunal Independent Pricing and Regulatory Tribunal, January 2004, NSW Electricity Distribution Pricing 2004-05 to 2008-09 - Draft Report, page 76.

³⁴ Independent Pricing and Regulatory Tribunal, November 2007, NSW Electricity Information Paper No 3/2007 - Trialing a Service Quality Scheme.

have been meeting 'targets' against at least one outage standard – SAIDI. Had the performance data, targets and incentive rates been robust enough to convert the trial into monetary outcomes, EnergyAustralia would have received \$0.68 million in incentive payments over the two years, Integral Energy \$4.38 million and Country Energy \$3.31 million.

- 4.38 In April 2009, IPART published the findings for the previous review period, concluding that overall, distribution network service providers' performance, in relation to time connections, had improved by approximately 24 per cent in 2007-08 compared to 2006-07. Also, approximately 96 per cent of customers were given sufficient notice of planned interruptions to supply.
- 4.39 The New South Wales distribution price determination for the 2009-2014 regulatory period was conducted by the AER, following the transfer of responsibility for the economic regulation of electricity distribution services. The AER decided to collect and monitor the New South Wales network service providers' service performance data during the 2009-2014 regulatory control period, with no revenue being placed at risk during this period. However, the AER expects this to provide a reliable data series to allow the application of the national scheme in New South Wales from 1 July 2014.³⁵

Western Australia

- 4.40 The Western Australia Electricity Industry (Network Quality and Reliability of Supply) Code was introduced in December 2005, requiring payments to customers if certain standards of reliability are not met.
- 4.41 Separately, the Code of Conduct for the Supply of Electricity to Small Use Customers provides for service standard payments in relation to certain customer service measures. In September 2009, the Economic Regulation Authority (ERA) proposed a series of amendments to this Code, whereby a retailer will be required to provide payment automatically when wrongful disconnection occurs. In particular, the ERA has proposed increases to the service standard payments to better reflect the purpose of the Code; an incentive for the distribution network service providers and retailers to ensure compliance with minimum service standards.³⁶
- 4.42 The network access arrangements in Western Australia require the network service provider to submit a proposed access arrangement, including pricing methods and price list, and access arrangement information to the ERA for approval. An access arrangement is required to include a service standards adjustment mechanism, setting out how the network service provider's performance during the access arrangement period against the service standard benchmarks is to be treated by the regulator at the next access arrangement review.

³⁵ The national scheme referred to is the AER service target performance incentive scheme, which will be applied to jurisdictions on a progressive basis as the AER takes responsibility for the regulation of prices and revenues of distribution network service providers. There is currently no timetable in place for the AER to assume these responsibilities in the Territory.

³⁶ Economic Regulation Authority, September 2009, Decision regarding Electricity Code Consultative Committee (ECCC) Final Report Review 2009, page 3.

4.43 The ERA approved the service standards adjustment mechanism in Western Power's proposed access arrangements in January 2010.³⁷ This mechanism provides for a financial reward or penalty to Western Power in relation to Western Power's actual performance in providing reference services to users connected to the distribution network, compared to benchmarks based on SAIDI and SAIFI performance indicators.

Tasmania

4.44 The Office of the Tasmanian Economic Regulator (OTTER) set state wide SAIFI and SAIDI targets as part of the 2003 network price determination, together with a financial incentive scheme that rewarded Aurora Energy for bettering the targets, or imposed penalties if the targets were not met.³⁸

4.45 However the scheme was discontinued for the 2008-2012 regulatory period due to a lack of consistent historical data.³⁹ Also, OTTER decided that a focus on regional performance targets, rather than average state wide targets, provided a more targeted approach to reliability issues.

4.46 A GSL scheme was also established for Tasmanian distribution network service providers as part of the 2003 price determination to formalise a tacit expectation that there is a minimum level of supply reliability required by customers and expected by the community, as well as to direct the network service provider's attention to areas receiving particularly poor performance.

4.47 The Tasmanian scheme provides for GSL payments in relation to:

- exceeding a specified frequency of outages; and
- where the duration of a single outage exceeds a specified time.⁴⁰

Australian Capital Territory

4.48 There is no financial incentive scheme operating in the Australian Capital Territory.

4.49 The Australian Capital Territory distribution price determination for the 2009-2014 regulatory period was conducted by the AER. As with New South Wales, the AER decided to collect and monitor the Australian Capital Territory network service providers' service performance data during the 2009-2014 regulatory control period, with no revenue being placed at risk during this period. However, the AER expects this to provide a reliable data series to allow the application of the national scheme in the Australian Capital Territory from 1 July 2014.⁴¹

³⁷ Western Power, December 2009, Amended Proposed Revisions to the Access Arrangement for the South West Network owned by Western Power

³⁸ Office of the Tasmanian Energy Regulator, September 2003, Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania Final Report and Proposed Maximum Prices, page xii.

³⁹ Office of the Tasmanian Energy Regulator, September 2007, Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania Final Report and Proposed Maximum Prices, page xxiv.

⁴⁰ Office of the Tasmanian Energy Regulator, December 2007, Guideline – Guaranteed Service Level (GSL) Scheme, Version 2

⁴¹ Australian Energy Regulator, April 2009, Final decision - Australian Capital Territory distribution determination 2009–10 to 2013–14

4.50 A GSL scheme operates as part of the Consumer Protection Code, established under the Utilities (Industry Codes) Determination 2000.

National

4.51 The National Electricity Rules require the AER is required to publish a service target performance incentive scheme, which occurred in November 2009.⁴²

4.52 The scheme includes arrangements for both a financial incentive component and a GSL component.

4.53 The financial incentive scheme provides for a network service provider's revenue to be increased (or decreased) based on changes in service performance measured with by reliability parameters – unplanned SAIDI, unplanned SAIFI and MAIFI (momentary average interruption frequency index); and customer service parameters – telephone answering, streetlight repair, new connections and response to written enquiries.⁴³

4.54 The GSL scheme provides for payments to be made to customers for breaches with respect to guaranteed service levels for the following services:

- frequency of interruptions;
- duration of a single interruption;
- total duration of interruptions;
- streetlight repair;
- new connections; and
- notice of planned interruptions.

4.55 The national scheme will be applied to jurisdictions on a progressive basis as the AER takes responsibility for the regulation of prices and revenues of electricity distribution network service providers as current determinations end.

⁴² Australian Energy Regulator, November 2009, Electricity Distribution Network Service Providers Service Target Incentive Scheme.

⁴³ The AER has not yet included a MAIFI indicator in the reliability parameters applying to network service providers.

CHAPTER 5

Design of Customer Service Incentive Schemes

Guaranteed service level schemes

- 5.1 GSL schemes in other jurisdictions are limited to distribution network service providers as these are regulated monopoly businesses.
- 5.2 Generation and retailing of electricity in other jurisdictions are activities provided through a competitive market. If a customer is unhappy with the service provided by a particular retailer, they can take their business to another. Service outages related to generation are infrequent as there are multiple generators able to supply into the system with Australian Energy Market Operator (AEMO) managing the dispatch of generation through a centrally coordinated dispatch process. If generation from one source is unavailable, AEMO can, in all but exceptional circumstances, substitute another.
- 5.3 In the Territory, PWC supplies almost all generation, all network and all retail services, as well as undertaking the role of system controller and has responsibility for dispatch of generation. Further, the Territory systems are much smaller, and lack the extensive back up from multiple generators available in the much larger NEM.
- 5.4 In this context, there appears a strong case for considering if the design of a GSL scheme should include generation, transmission and retail as well as distribution services.

Types of service performance measures in a GSL scheme

- 5.5 All Australian jurisdictions except the Territory have established GSL schemes for distribution network services, although the services subject to penalty payments and the applicable payment levels vary widely.
- 5.6 There are three broad categories of performance measures that can be included in a GSL scheme:
 - reliability of supply;
 - quality of supply; and
 - customer service.
- 5.7 In the NEM jurisdictions, penalty payments are restricted to 'unplanned' interruptions to supply. Additionally, some jurisdictions apply penalty payments to planned interruptions, appointments, customer connections, customer reconnections and wrongful disconnections. Where a number of events can trigger GSL payments, several jurisdictions place an annual cap on the total of GSL payments to each customer. For example, New South Wales has specified that the maximum amount payable in a financial year is \$320 to each customer per premises. Some jurisdictions

(for example Queensland) limit payments to 'small' customers rather than all affected customers.

- 5.8 All jurisdictions, other than Victoria, offer a GSL payment to customers in the event that the duration of a single supply interruption exceeds the specified threshold. In contrast, Victorian distribution network service providers must consider the annual cumulative duration of unplanned supply interruptions. In addition to the duration of the supply interruption, the frequency of supply interruptions is also subject to a GSL payment, if annual interruptions exceed the threshold. For instance, in Tasmania, a payment of \$80 is required should unplanned interruptions exceed 10 in a year for an urban feeder, 13 for a higher density rural feeder and 16 for a lower density rural feeder.
- 5.9 For those jurisdictions with service incentive schemes, the majority of GSL payments relate to the duration and frequency of supply outages exceeding minimum standards.
- 5.10 In addition, most jurisdictions provide for some form of customer service measures. Such service types include late connection, failure to give sufficient notice of planned interruptions and failure to attend a scheduled appointment on time.
- 5.11 The following is a summary of the various service types subject to GSL payments, as specified by the differing jurisdictions.

Reliability of supply measures

- 5.12 Reliability measures are viewed as the most important characteristic of distribution services. Although perfect supply is ideal, it is not practically possible as the impact of 'major events' (e.g. severe storms) are outside the reasonable control of distribution network service providers, such as without excessive expenditure. In an effort to monitor and improve the reliability of supply, network service providers, including PWC, must report on a specific measures, including:
- SAIDI, which is calculated as the sum of the duration of each planned or unplanned distribution consumer interruption (in minutes), divided by the total number of connected distribution consumers averaged over the year, excluding momentary interruptions (less than 1 minute);
 - SAIFI, which is calculated as the total number of planned or unplanned distribution consumer interruptions, divided by the total number of connected distribution consumers averaged over the year, excluding momentary interruptions (less than 1 minute); and
 - CAIDI, which is calculated as the sum of the duration of each unplanned distribution consumer interruption (in minutes), divided by the total number of unplanned distribution consumer interruption in that year, excluding momentary interruptions (less than 1 minute duration).
- 5.13 Poor performance in relation to reliability and quality of supply may be caused by generation or network failure. This is particularly relevant in the Territory. Accordingly, for as long as PWC is the sole licensed 'market' generator in the Territory, there is a case for GSLs for reliability and quality of supply to apply to all outages, regardless of whether they are due to a network or generation failure.

Duration of single supply interruption

- 5.14 All jurisdictions, except Victoria, provide for GSL payments to customers if the applicable threshold is exceeded.

5.15 Following the CZS outages in Darwin in October 2008, the Commission recommended a payment of \$80 be made for single unplanned interruption that was at least 12 hours in duration, consistent with the AER scheme. Table 5.1 sets out the duration of an unplanned supply interruption for a customer to qualify for a payment in each jurisdiction.

Table 5.1: Duration thresholds of single supply interruptions of electricity distribution networks

		NT	AER	QLD	NSW	SA	WA	Tas	ACT
Threshold hours	Level 1	12	12	18	12	12	12	8	12
Payment		\$80	\$80	\$104	\$80	\$80	\$80	\$80	\$20
Threshold hours	Level 2					15		16	
Payment						\$120		\$160	
Threshold hours	Level 3					18			
Payment						\$160			
Threshold hours	Level 4					24			
Payment						\$320			
Maximum payment					\$320				

Source: Industry regulators.⁴⁴ Note: Territory thresholds are those recommended by the Commission for the CZS outages.

5.16 The Victorian regulator has moved away from allowing payments for single interruptions, opting to base GSL payments on the cumulative duration of interruptions for the year, using a 20 hour minimum threshold.

Annual cumulative duration of unplanned interruptions

5.17 This reliability measure has been adopted by Victoria and the AER. The Commission understands that the purpose of the 'cumulative duration' GSL is to ensure that customers affected by repeated outages that individually may not qualify for a 'single interruption duration' GSL are nevertheless recognised as experiencing very poor service.

5.18 However, recording the cumulative duration of multiple outages for individual customers involves more onerous data collection than accounting for single interruptions of extended duration. Accordingly, the benefits of recognising this measure of poor performance need to be balanced against the potential costs of administration.

⁴⁴ Australian Energy Regulator, November 2009, Electricity Distribution Network Service Providers Service Target Incentive Scheme; Queensland Electricity Industry Code: Fourth Edition; Independent Pricing and Regulatory Tribunal, Electricity Network Service Providers Licence Conditions Reference Document Version 3; Essential Services Commission of Victoria, Review of Electricity Distribution Prices 2006-10 Final Decision – Fact Sheet 3; Essential Services Commission of South Australia, Electricity Distribution Code Version EDC/07, Part B Connection and Supply Contract; Western Australia Office of Energy, Electricity Industry (Network Quality and Reliability of Supply) Code 2005; Western Australia Office of Energy, Code of Conduct for the Supply of Electricity to Small Use Customers 2008; Office of the Tasmanian Energy Regulator, December 2007, Guideline Guaranteed Service Level (GSL) Scheme Version 2; and Independent Competition and Regulatory Commission, July 2009, Consumer Protection Code, Schedule 1.

5.19 Following the CZS outages, the Commission recommended a payment of \$125 be made if the total duration of unplanned interruption attributable to the CZS outages during September and October 2008 exceeded 20 hours. Table 5.2 sets out the cumulative duration of an unplanned supply interruption for a customer to qualify for a payment.

Table 5.2: Annual cumulative thresholds of unplanned supply interruptions

		NT	AER	Vic
Threshold hours	Level 1	20	20	20
Payment		\$125	\$100	\$100
Threshold hours	Level 2		30	30
Payment			\$150	\$150
Threshold hours	Level 3		60	60
Payment			\$300	\$300

Source: Industry regulators. Refer footnote 43. Note: Territory thresholds are those recommended by the Commission for the CZS outages.

Interruption frequency guaranteed service levels

5.20 The AER GSL scheme requires a network service provider to make a payment at the end of the year on account of the frequency of unplanned interruptions, separate from the duration of those interruptions.

5.21 As the CZS outages were confined to a limited period in September and October 2008, the Commission did not make any recommendations for payments relating to interruption frequency. The Commission took the view that GSL payments made in regard to specific outage events do not lend themselves to include a component related to the frequency of outages, with this more logically applying when an annual period is being looked at as a whole, rather than specific outages like the CZS outages covering just a month or two.

Table 5.3: Thresholds of the frequency of supply interruptions of electricity distribution networks

		AER	QLD	NSW	Vic	SA	Tas	ACT
Threshold hours	Level 1	9	10-13	4	10	9	10	
Payment		\$80	\$104	\$80	\$100	\$80	\$80	
Threshold hours	Level 2				15	12		
Payment					\$150	\$120		
Threshold hours	Level 3				30	15		
Payment					\$300	\$160		

Source: Industry regulators, refer footnote 43. Note: the level one threshold for Queensland differs if the network service provider is ENERGEX or Ergon Energy.

5.22 The frequency of supply interruptions is measured for a year, either calendar or financial, depending on the jurisdiction.

Momentary interruptions

- 5.23 A momentary interruption is defined as an interruption that lasts less than one minute.
- 5.24 Although momentary interruptions are a source of annoyance to customers, distribution network service providers have not been able to accurately record momentary interruption data, causing industry regulators to exclude this measure from their GSL schemes. The only exception is Victoria, where a GSL payment for momentary interruptions was included in the 2006-2010 network price determination, with a payment of \$25 if the number of momentary interruptions in a year exceeds 24 and an additional \$10 if the number of momentary interruptions exceeds 36.

Question 1

What reliability of supply measures should be included in a possible Northern Territory GSL scheme and what payment amounts and thresholds might apply?

Quality of supply measures

- 5.25 Quality of supply refers to the electrical specification of supply, and is measured by such indicators as voltage levels, frequency, and harmonic content. Poor quality of supply shows up as dimming, flickering or overly bright lights, motors speeding up or slowing down (e.g. ceiling fans), and the frequent damage to electrical appliances. Quality of supply is increasingly of concern to both industrial and domestic consumers as voltage sensitive electrical appliances and equipment become more prevalent (e.g. computers and electronically controlled systems).
- 5.26 Unlike reliability of supply, quality is more difficult to measure. Although the quality of supply is the subject of fairly detailed regulation specified in various Australian Standards, there are no commonly used indicators for monitoring and reporting the response to, and prevention of, these technical problems. A common approach to monitoring technical effectiveness (quality of supply) of network service providers is through customer feedback, or complaints, with respect to voltage problems.
- 5.27 Currently, quality of supply measures are not included in any service performance incentive schemes in Australia, as the indicators that exist are not considered to be particularly reliable. In addition, a more cost effective approach may be for consumers to install equipment that ensures adequate quality of supply for sensitive items.

Customer Service Measures

- 5.28 Customer service measures refer to the (network or retailer) service provider's performance in regard to consumer requirements, including late connections, failure to attend appointments on time and responding to queries. The most common customer service measures are discussed below.

Late connection

- 5.29 All jurisdictions, with the exception of Tasmania, provide for a GSL payment for late connections. In the event that a network service provider fails to connect electricity to a residence within the specified time, the affected customer may be eligible for a GSL payment.

Table 5.4: Criteria and payments for late connection

	Period to provide connection (days)	Payment (per day late)	Payment (maximum)
AER	By agreed date	\$50	\$300
QLD	By agreed date	\$40	No cap
NSW	By agreed date	\$60	\$300
Vic	10	\$50	\$250
SA	6	\$50	\$250
WA	20	\$50	\$250
ACT	Same day if connected, or by agreed date	\$60	\$300

Source: Industry regulators, refer footnote 43.

5.30 PWC currently reports on the percentage of new connections not provided within specified timeframes. The timeframes specified for new connections are:

- for supply to existing supply properties - within 24 hours;
- for supply to new subdivisions in urban areas - within 5 working days; and
- for supply to new subdivisions where extension or augmentation is required - within 10 working days.

Sufficient Notice

5.31 Failure of a network service provider to provide sufficient notice of planned interruption incurs a GSL payment under the national scheme and in Queensland, New South Wales, Western Australia and the Australian Capital Territory. Queensland distinguishes between residential and business customers, highlighting the importance for businesses to plan alternative measures to continue day-to-day operations.

Table 5.5: Criteria and payments for insufficient notice

	Notice period (days)	Payment
AER	4 (excluding Saturdays, Sundays, applicable public holiday)	\$50
QLD	2	Domestic customers - \$20 Business customers - \$50
NSW	2	\$20
WA	3	\$20
ACT	2	\$50 if sufficient notice not given \$50 if supply is not restored within the time specified in the notice.

Source: Industry regulators, refer footnote 43. Note: Notice may be given by mail, press advertisement or other means which are reasonable in the circumstances. The Aurora Energy (Tasmania) Customer Charter states that a \$30 payment will be made for insufficient notice.

Appointments

5.32 Failure to attend a scheduled appointment on time can also triggers a GSL payment for the customer. Although this measure has not been adopted by the AER, several jurisdictions have allocated an applicable GSL payment.

	Appointment window	Payment
QLD	Energex – 5 hours Ergon Energy – 1 day	\$40
Vic	Customer present – 2 hours Customer absent – 1 day	\$20
SA	15 minutes	\$20

Source: Industry regulators, refer footnote 43. Note The Aurora Energy (Tasmania) Customer Charter states that a \$30 payment will be made for an appointment missed by more than 15 minutes.

Wrongful disconnection

5.33 The objective of the wrongful disconnection service standard is to make a payment to customers if they are disconnected through no fault of their own. The payment provides retailers and network service providers with an incentive to avoid such disconnections.

5.34 Currently, the only jurisdictions to require a payment for wrongful disconnection are Western Australia (\$100) and Queensland (\$100). However, the ESCV has recently published a draft report in review of the wrongful disconnection payment.⁴⁵ The ESCV proposes that since the implementation of the service standard in 2004, retailers have most likely established and refined their business processes and reduced the potential for wrongful disconnections.

Question 2

What customer service measures should be included in a possible Northern Territory GSL scheme, and what payment amounts and thresholds should apply?

Eligible customers

Customer size

5.35 As discussed earlier, GSL payments are a recognition of poor service rather than compensation. Typically, GSL payments are set at a level that, in many cases, would fall short of the monetised value of the actual cost incurred by customers by the poor service. Moreover, the actual cost would vary significantly between customers. Payments in the order of \$100 or so would not be significant for large business customers.

⁴⁵ Essential Services Commission of Victoria, November 2009, Review of Wrongful Disconnection Payment – Draft Report.

- 5.36 Accordingly, some jurisdictions choose to make the distinction between small and large customers by limiting GSL payments to ‘small customers’.
- 5.37 In Queensland, GSL arrangements apply only to small customers, defined as those consuming less than 100 megawatt hours (MWh) of electricity per annum, while the Western Australian scheme restricts coverage of its scheme to those customers consuming less than 160 MWh per annum. In Victoria, all customers are eligible for GSL payments, although prior to the 2006 coverage was restricted to customers with annual consumption below 160 MWh.

Regulated versus non-regulated networks

- 5.38 Due to implementation arrangements, customer service incentive schemes are generally applied to regulated distribution networks. The Commission notes that electricity supply in regional and remote centres of the Territory is not subject to the statutory framework established by the *Electricity Reform Act*, *Electricity Networks (Third Party Access) Act* and Code and associated legislation. Instead electricity supply in these areas is mainly managed through a contract for service model, and that arrangements for service performance levels are a matter for the Territory Government and/or the operator of the electricity network.

Question 3
Should a possible Northern Territory GSL scheme only apply to small customers and if so, how should a small customer be defined?

Question 4
Should a possible Northern Territory GSL scheme be restricted to customers on regulated networks?

Thresholds

- 5.39 Because the acceptable level of service performance can vary between customer groups or geographical areas, the threshold performance for making a GSL payment is sometimes set at different levels. For example, the differences in operating environments between rural and urban areas may mean that it would be appropriate to have longer response times and higher target interruption frequencies for any service interruption standards for rural customers compared to urban customers. Service levels could also vary between businesses and domestic customers to reflect, for example, different needs and priorities
- 5.40 In Tasmania, customers receive \$80 if the frequency of unplanned supply interruptions exceeds 10 interruptions in the urban and higher density area; 13 interruptions in the higher density rural area; or 16 interruptions for the lower density rural area. The potential for different performance outcomes between regions is recognised in the Northern Territory in the Electricity Standards of Service Code, which sets a different standard for poorly performing interconnected and radial networks feeders.
- 5.41 Thresholds can also be set so that additional or increasing payments are made for increasingly poor performance. This approach allows a single scheme to apply to

diverse customer groups while providing an increasing incentive to a network service provider to address particularly poor service performance.

- 5.42 For example, Victoria's GSL scheme prescribes several threshold values with payment amounts that correspondingly increase :
- Level 1: 10 unplanned interruptions, qualifies for a payment of \$100;
 - Level 2: 15 unplanned interruptions, qualifies for a payment of \$150; and
 - Level 3: 30 unplanned interruptions, qualifies for a payment of \$300.
- 5.43 As shown in tables 3.1 and 3.3 above, South Australia also has a sliding scale of GSL payments for both duration and frequency of unplanned outages.

Question 5
Should service performance thresholds differ for customer groups or geographical areas?

Question 6
Should escalating payment thresholds be set for some performance indicators and if so, .which indicators?

Excluded events

- 5.44 Consideration must be given to events that are outside the reasonable control of the network service provider when determining the types of services to include in a GSL scheme. These are events that a network service provider cannot reasonably be expected to prevent or avoid, at least without excessive capital investment.
- 5.45 Major events can be caused by acts of nature such as fire, floods and storms. They can also be caused by third party events such as generation and transmission outages, traffic accidents and acts of vandalism.
- 5.46 Tasmania and Victoria specify that unplanned interruptions that are not restored within a specified time because of a request of the customer, are not to be included when determining GSL payments. Queensland, Victoria, South Australia and Tasmania specify that a planned interruption with the prior agreement of the customer (or at the request of the customer) will also be excluded from consideration of GSL payment.
- 5.47 Conversely, it is important that the definition of an excluded event not be so broad as to exempt the network service provider when the event is not outside its reasonable control or influence.
- 5.48 The Electricity Standards of Service Code allows for the effect of severe interruptions to supply on its key reliability indicators, based on the "2.5 beta method", to be removed in order to determine the underlying reliability performance.⁴⁶ The values of

⁴⁶ Refer Institute of Electrical and Electronic Engineers, [Working Group on System Design, January 2003, Classification of Major Event Days.](#)

the relevant system wide reliability indicators must be reported in both unadjusted and adjusted terms.

5.49 The AER service target performance incentive scheme lists a number of events for which a network service provider does not have to make GSL payments based on the frequency or duration of outages:

- load shedding due to a generation shortfall;
- automatic load shedding due to the operation of under frequency relays following the occurrence of a power system under-frequency condition;
- load shedding at the direction of the AEMO or a system operator;
- load interruptions caused by a failure of the shared transmission network;
- load interruptions caused by a failure of transmission connection assets except where the interruptions were due to inadequate planning of transmission connections and the distribution network service provider is responsible for transmission connection planning; or
- 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 distribution network service provider.⁴⁷

5.50 In addition, the AER allows an event to be excluded where the daily unplanned SAIDI exceeds the major event day boundary, calculated by the 2.5 beta method. This is the AER's minimum approach to setting boundaries that network service providers may propose. However with AER approval, network service providers can propose major event days beyond the 2.5 boundary.

5.51 The 2.5 beta method is an objective statistics based methodology for identifying outlying performance. Instances may arise where an event may not be a statistical outlier, but is still an event that a network service provider cannot reasonably be expected to prevent or avoid. Because of this, some regulators take the approach of specifying a comprehensive list of events.

5.52 The Queensland GSL scheme excludes the following types of interruptions from reliability related GSL measures:

(i) an interruption of a duration of one minute or less;

(ii) an interruption resulting from:

(A) load shedding due to a shortfall in generation

(B) a direction by NEMMCO, a system operator or any other body exercising a similar function under the Electricity Act, National Electricity Rules or National Electricity Law;

(C) automatic shedding of load under the control of under-frequency relays following the occurrence of a power system under-frequency condition described in the power system security and reliability standards;

(D) a failure of the shared transmission grid; or

(E) a direction by a police officer or another authorised person exercising powers in relation to public safety;

(iii) a planned interruption;

(iv) an interruption requested, or initiated, by the small customer;

(v) an interruption caused by the small customer's electrical installation or failure of that electrical installation;

(vi) an interruption to a small customer's premises within a region in which a natural disaster has occurred, where:

(A) the Queensland Minister for Emergency Services has notified the Commonwealth of the occurrence of an eligible disaster under the Natural Disaster Relief Arrangements in respect of that natural disaster for that region; and

(B) the interruption occurred during the period for which the Natural Disaster Relief Arrangements have been notified.⁴⁸

- 5.53 In the Territory context, there is potential for GSL payments to apply to all outages, regardless of whether they are due to network or generation failure. As such, the exclusions applied in other jurisdictions may not be sufficient.

Question 7
Should any supply interruptions be excluded for a GSL scheme and if so, how should their exclusion be determined?

Funding of a GSL scheme

- 5.54 As mentioned previously, there is a distinction between GSL payments and 'compensation' payments for power outages. GSLs are an amount paid to customers who experience service levels below predetermined thresholds. Therefore, the payment is seen as a recognition of poor service rather than as compensation. GSL payments are not in any way related to the actual dollar value of an individual customer's loss.

- 5.55 Rather than attempting to obtain compensation from a network service provider for power outages, customers who require particularly high levels of reliability will generally make alternative arrangements to mitigate any possible loss (from damaged food or loss of trading for example), either by carrying appropriate insurance cover, installing uninterruptible power supplies (UPS) or having a backup generator.

⁴⁷ Australian Energy Regulator, November 2009, Electricity Distribution Network Service Providers Service Target Incentive Scheme, page 12.

⁴⁸ Queensland Electricity Industry Code, Fourth Edition, July 2008, page 23.

- 5.56 Generally, guaranteed payment schemes represent a minor financial imposition on the network service provider relative to overall operating and capital costs. However, they may have a significant symbolic value to customers and network service providers.
- 5.57 The costs incurred by a network service provider include the cost of collecting and maintenance detailed records of interruption to supply of all customers, the costs of the GSL payments, and the revenue foregone when a network service provider fails to provide satisfactory service. The amount of the GSL payment is often arbitrarily set at a level viewed as appropriate by the network service provider or regulator. They are not based on any assessment of actual losses incurred by a customer.
- 5.58 Other common features of GSL schemes include:
- only one payment is made per electricity account for each event regardless of the number of account holders or premises listed on the account affected by the event;
 - payments do not involve any admission of legal liability; and
 - receipt of such a payment is not taken in any way to alter or diminish any rights under applicable legislation, common law or contract.
- 5.59 The GSL schemes in place in other jurisdictions are generally funded as an operating cost of the network service provider. This is done by including an ex ante assessment of likely costs by the regulator when setting the revenue or price cap. The cost of these schemes is therefore borne by the network service provider's wider customer base or through reduced profits.
- 5.60 In the Territory, the network price determination for the 2009-2014 regulatory period was completed in early 2009. No allowance for funding of a GSL scheme was included in PWC's required revenue in determining the price cap to apply from 1 July 2009 to 30 June 2014. Similarly, at the retail level, a pricing order is in place until 30 June 2013 for small customers.
- 5.61 Accordingly, a GSL scheme implemented in the Territory in advance of the next regulatory reset would most likely be funded from PWC's profits.

Question 8

How should a possible Northern Territory GSL scheme be funded?
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Payment mechanisms

- 5.62 Various regulatory bodies have introduced individual customer compensation payment systems, and different approaches to the payment of penalties. For example, payments in Victoria, South Australia, Tasmania and some standards in the United Kingdom are automatic. For other standards in the United Kingdom, the payment is made following a claim by the customer.
- 5.63 Where a network service provider automatically provides a GSL payment to a customer, there is generally a requirement to make the payment within a specified time limit (within 3 months in Victoria and South Australia). A range of payment options are allowable under most GSL schemes, including posting a cheque, electronic funds transfer, crediting customer's account or another means agreed with customer. Where one payment method isn't feasible, then an alternative payment method can be used.

For example, if payment is made as a credit against the customer's account, but the customer ceases to be a customer before the relevant bill is issued, then a cheque might be mailed.

- 5.64 In Queensland, the network service provider must use best endeavours to automatically give a GSL payment to a customer, however a customer may make a claim for a payment if the network service provider has not done so. A claim for a payment must be made within one month of the event giving rise to the claim. In Western Australia, network service providers do not have to proactively make payments to customers, and customers must request a payment within three months of becoming eligible for that payment.
- 5.65 New South Wales operates a system featuring customer initiated payments and a simultaneous campaign to inform customers of their rights.
- 5.66 The reasons for adopting automatic payment are:
- requiring a customer to claim a GSL payment increases the cost to customers of a breach of minimum standards. The increased effort may act as a disincentive for customers to file a claim;
 - automatic payment reduces the analysis needed to estimate the cost to businesses of the payments, as there is no need to determine the percentage of eligible customers who will make a claim; and
 - automatic payment allows the standards to be more finely tuned to the system characteristics. Under a customer claim regime minimum standards must be very simple, as more complex standards increase the chance that customers will not know their rights and consequently not claim.
- 5.67 PWC's submission to the Commission's Standards of Service Issues paper from August 2004 stated:
- Power and Water is supportive of the concept of GSLs, but is concerned about of the compliance and establishment costs in enhancing systems and administering the scheme. As noted previously in this submission, these costs are likely to be significant.*
- Power and Water's information systems do not currently collect the information necessary to determine which individual customers are affected by an outage, and for what duration. Establishing systems that will record this information within an acceptable level of accuracy will be expensive and could take several years.*⁴⁹
- 5.68 In discussions with the Commission in August 2009, PWC advised that it was still not in a position to identify all individual customers affected by an outage. The Commission understands that PWC is developing data collection and reporting systems as part of the response to the Davies Enquiry. These systems could provide more detailed data on the affect of supply interruptions.

⁴⁹ Power and Water Corporation, November 2004, Submission to Utilities Commission Standards of Service Issues Paper, page 16.

- 5.69 However, when a network service provider does not have systems in place to identify specific individual customers affected by supply interruptions, provisions can be made to allow for the estimating of affected customers from feeder-level data by:
- requiring the network service provider to assume that when a feeder experiences an outage, all customers are affected. Where the number of outages on a feeder exceed the minimum service standard, an automatic payment should be made to all customers on that feeder, irrespective of whether they actually experienced all of the interruptions; or
 - when the number of outages on a feeder exceed the minimum service standard, the network service provider is required to write to all customers on that feeder, informing them of the minimum service standards and inviting them to apply for a payment if they think they are eligible.
- 5.70 In relation to the CZS outages in September and October 2008, the Commission understands that PWC used its best endeavours to automatically give a GSL payment to those customers it identified as eligible. Claims from customers not initially identified by PWC were investigated and payments made where PWC considered it appropriate.

Question 9
What would be an appropriate payment mechanism for a possible Northern Territory GSL scheme?

Financial incentive scheme

- 5.71 A financial incentive scheme involves adjustments to network charges in response to service performance, and is based around achieving an average performance for all customers.
- 5.72 Poor standards of service may result under price controls which provide incentives to reduce expenditure, such as multi-year CPI-X price caps as apply to the prices paid by network users for the conveyance of electricity through a prescribed electricity network in the Territory's electricity supply industry.
- 5.73 A financial incentive scheme typically forms part of the regulator's determination of network price controls for a regulatory period.⁵⁰ The reward or penalty is applied by including an s-factor in the price control formula giving it the form $CPI - X + S$, where CPI is the consumer price index, X is the efficiency factor and S is the service incentive factor. The network service provider is allowed to earn higher revenues, from higher prices, if performance is better than the agreed benchmark. This arrangement is included in the determination of network prices made by the regulator.
- 5.74 A financial incentive scheme can be designed to be symmetric (both rewards and penalties are possible) or asymmetric (penalty-only). Ideally, the customer should drive

⁵⁰ In the Territory, the first regulatory control period was from 1 April 2000 to 30 June 2004, with subsequent regulatory control periods being for 5 years. The current regulatory control period commenced on 1 July 2009 and will finish on 30 June 2014.

the choice between asymmetric and symmetric schemes, based on the following criteria:

- if it is considered that customers value improvements in quality approximately the same as reductions in quality, then a symmetrical incentive scheme may be appropriate; and
- if there is reason to believe that customers place less value on improvements in reliability than in reductions, then an asymmetric scheme may be used.

5.75 Financial incentive schemes in Australia are generally symmetric, reducing prices when performance falls below benchmark levels, and conversely increasing prices when performance exceeds benchmark service levels.

5.76 In addition, a financial incentive scheme can be designed to promote different levels of service performance. As noted by the AER, a financial incentive scheme can be designed to:

- maintain a desired performance level simply by setting a target and providing a reward when performance exceeds the target and a penalty if the target is not met;
- provide an incentive to improve performance over time by changing the target annually so that the network service provider is required to improve performance each year just to meet the target; or
- reward sustained performance improvements by setting the target for a year at the actual result for the previous year. Network service providers are thereby rewarded when service is better than the previous year and penalised when service is worse than the previous year.⁵¹

5.77 Arguments have been made that the additional incentives of a financial incentive scheme are not necessary, when incentives already exist for service providers to improve service quality for the worst-served customers through a GSL scheme.

5.78 A financial incentive scheme forms part of the service target performance incentive scheme established by the AER, and will be applied as the AER takes responsibility for network price regulation in the NEM.⁵²

Question 10

Should a financial incentive scheme be implemented in the Northern Territory, and if so:

- should it be symmetric or asymmetric?
- should it provide incentives to maintain or improve service performance?

⁵¹ Australian Energy Regulator, November 2007, Electricity Distribution Network Service Providers: Service Target Performance Incentive Scheme – Issues Paper, page 11.

⁵² The AER has an incentive scheme for transmission which is different to the scheme for distribution. Consistent with general network price regulation in the Territory, it is the Commission's intention for both transmission and distribution to be treated as distribution in any Territory scheme.

Types of service performance measures in a financial incentive scheme

5.79 As for a GSL scheme, there are three broad categories of performance measures that can be included in a financial incentive scheme:

- reliability of supply;
- quality of supply; and
- customer service.

5.80 Financial incentive schemes are based on single or many measures of service performance. Where more than one service performance indicator is used, indicators may be weighted to provide an appropriate incentive. However, large numbers of performance indicators can make a scheme administratively complex.

5.81 Similar to a GSL scheme, specified major events are generally excluded.

New South Wales

5.82 The IPART paper trial of a service quality scheme used a single measure - the whole network unplanned SAIDI, as the measure of service reliability in calculating an s-factor. SAIDI measures average duration that customers are without supply, with longer periods without electricity indicating poorer network reliability performance.

Victoria

5.83 The Victorian regulator's financial incentive scheme is based on four key performance indicators:

- minutes off supply measure (unplanned SAIDI);
- sustained supply interruption measure (unplanned SAIFI);
- momentary supply interruption measure (MAIFI); and
- call centre performance measure (proportion of calls responded to within 30 seconds).

5.84 Performance is disaggregated by network (feeder) type: CBD, Urban, Rural Long and Rural Short, to reflect the fact that differences in operating characteristics affect the levels of reliability that can realistically be achieved at appropriate cost on different parts of the network.

5.85 The Victorian regulator's approach is based on the size of the gap between target performance and actual performance, which also means that the incentives for network service providers to improve service quality are continuous.

South Australia

5.86 The South Australian financial incentive scheme is based on certain reliability performance and telephone responsiveness measures.

5.87 The reliability component of the scheme looks at feeders that have experienced two consecutive years of three or more interruptions or more than 180 minutes of unplanned off supply, while telephone responsiveness component looks at the proportion of calls answered within 30 seconds, with a baseline target of 85 per cent (equivalent to recent historical performance).

National

- 5.88 The AER service performance incentive scheme includes three reliability measures, unplanned SAIDI, unplanned SAIFI and MAIFI; and four customer service indicators, telephone answering, streetlight repair, new connections and response to written enquiries.
- 5.89 For reliability performance measures, a distribution network area is divided into network types such as CBD, urban, long and short rural, with performance targets and incentive rates applied to each parameter for each network segment.
- 5.90 Performance targets are based on the average performance of the previous five years, and are not allowed to deteriorate across years, although there are allowable modifications.

Question 11

What performance measures should apply to a possible Northern Territory financial incentive scheme and should any particular performance measures be weighted more heavily than others?

Setting the incentive rate

- 5.91 The s-factor in a financial incentive scheme is formulated by applying an incentive rate to the difference between actual performance and the relevant performance target.
- 5.92 The incentive rate should be set high enough so that a network service provider is motivated to improve performance (i.e. it is cheaper to improve service than incur the penalty), without being higher than customers are reasonably prepared to pay.
- 5.93 There are a number of possible approaches to setting the incentive rate.
- 5.94 In New South Wales, IPART commissioned consultants to estimate an incentive rate based on the cost to the network service provider of delivering a reduction of another unit of SAIDI.
- 5.95 In Victoria, incentive rates are based on each network service provider's estimate of their marginal cost of making service improvements. Targets and incentive rates are set on an individual basis and differ for each network service provider for each feeder type.
- 5.96 In South Australia, ESCOSA, determined the incentive rate by directly surveying customers to assess their willingness to pay for service improvements.
- 5.97 The AER service target performance incentive scheme bases incentive rates on the value that customers place on supply reliability ('value of customer reliability' or VCR), with dollar amounts for VCR specified in the scheme.

Question 12

Should possible incentive rates be based on the cost to the network service provider to improve performance or the value customers place on a particular measure of service performance?

CHAPTER 6

Implementation in the Northern Territory

Requirements of the Terms of Reference

- 6.1 Chapter five discussed the different service performance measures and other design elements that are used in customer service incentive schemes in Australia. The task before the Commission, in consultation with stakeholders, is to consider which of those elements are most appropriate for inclusion in a Territory scheme, given the specific supply circumstances prevailing in the Territory.
- 6.2 The terms of reference require the Commission to identify options for the design of a customer service incentive scheme in the Territory, taking into account:
- any recent relevant policy developments and regulatory practice in other jurisdictions, particularly the development of the service target performance incentive scheme by the AER;
 - the capability of PWC systems to reliably record the impact and duration of interruptions to supply or poor service performance;
 - all relevant economic and policy developments, including current and forecast economic conditions.
- 6.3 The Commission has also be asked to recommend a preferred option for the design of a customer service incentive scheme in the Territory, and to provide detailed plans for the implementation of that recommendation.
- 6.4 The key objectives of the priority work program the Commission is to complete for the Territory Government are to strengthen regulatory oversight of the Territory electricity market and improve system reliability and performance, and where possible, aligning the Territory market with the NEM.
- 6.5 However, the Territory electricity supply market has a number of unique characteristics that may prevent direct adoption of the national scheme at this point in time.

Northern Territory specific issues affecting the design of a customer service incentive scheme

PWC as a vertically integrated entity

- 6.6 Service target performance incentive schemes in other jurisdictions are limited to network service providers as these are regulated natural monopoly businesses.
- 6.7 In the Territory, PWC is a vertically integrated entity that supplies almost all generation, network and retail services, as well as undertaking the role of system controller and the responsibility for dispatch of generation.
- 6.8 Financial incentive schemes operate by allowing an increase in regulated revenue if service improves and decreasing regulated revenue if service performance falls or fails

to meet specified targets, so that average charges for all customers increase or decrease in line with service performance.

- 6.9 However, since there is no regulation of prices for wholesale electricity, there is no mechanism by which a financial incentive scheme for generation reliability could be applied to the cost of energy such that customers would receive, through lower energy prices, an offset for poor reliability of generation. A generation reliability rebate, together with any financial incentive rebate related to retail services, could however be delivered through retail prices set out in the Pricing Order which currently sets maximum prices for non-contestable customers. This might be of benefit to small customers, but payment would not reach customers on negotiated contracts
- 6.10 In contrast, GSL schemes focus on the worst served customers and payments are made directly to those customers affected in specific instances. As such, a GSL scheme in the Territory could be designed to include payments for generation reliability and retail customer service as well as for network services.

Question 13

Should a possible Northern Territory financial incentive or GSL scheme include generation reliability and retail customer service measures as well as network service performance measures?

Coverage

- 6.11 Customer service incentive schemes are generally applied to regulated distribution networks.
- 6.12 Outside the regulated networks, electricity supply in regional and remote centres of the Territory is mainly managed through a contract for service model. Service performance levels in such situations may best be dealt with through contractual arrangements between the service purchaser and the service provider.

Question 14

Should a possible Northern Territory financial incentive or GSL scheme only apply to regulated electricity networks?
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Firms subject to scheme

- 6.13 PWC is effectively the only firm currently actively operating in the market systems. Although PWC's role as monopoly provider of network services will not change, other generators and retailers may enter the market systems in future.

Question 15

Should a possible Northern Territory financial incentive or GSL scheme include an allowance to extend the scheme to other service providers who may enter the Northern Territory market?

Data recording systems

- 6.14 Accurate and consistent data is required for a service target performance incentive scheme to be effective.
- 6.15 System wide reliability measures for SAIDI, SAIFI and CAIDI have been reported by PWC under the Electricity Standards of Service Code since 2005. However the Commission has not yet verified if PWC's data systems accurately record the number or duration of interruptions experienced by individual customers.
- 6.16 Although PWC could be required to undertake system improvements to enable it to more comprehensively record service performance, the costs involved in implementing systems improvements may outweigh the benefits. Further, these costs will ultimately be borne by customers as PWC passes them through as increased prices.
- 6.17 As such, there may be a case for including only those service performance measures in a GSL scheme which can be accurately and reliably recorded, even if this means using fewer measures than elsewhere in Australia, as the scheme would be implemented at low cost with existing PWC systems.

Question 16

Do you have views on the capability of performance reporting systems, and the willingness of customers to accept the costs of improving reporting systems?

The Commission is particularly interested in the Power and Water Corporation's views on this matter, most notably in relation to systems capability.

Financial incentive scheme in the Northern Territory

- 6.18 A financial incentive scheme typically forms part of the regulator's determination of network price controls for a regulatory period. In the Territory, the network price determination for the 1 July 2009 to 30 June 2014 regulatory period was finalised in March 2009.
- 6.19 The outcome of this review will be an in-principle decision as to whether or not a financial incentive scheme should be adopted in the Territory and if so, what measures (eg. SAIDI, SAIFI, Customer Service) should be used, how those measures should be weighted and how incentive rates should be determined.
- 6.20 A parallel review of the adequacy of current standards and monitoring regime embodied in the Electricity Standards of Service Code in the Territory is to conclude in

November 2010. This review will provide information on appropriate targets for the various service performance measures.

- 6.21 As foreshadowed in the 2009-10 to 2013-14 network pricing Determination, a 'paper trial' of a financial incentive scheme will be instituted by the Commission during the regulatory period, with the result of this trial informing the Commission's consideration of whether or not to apply a financial incentive scheme in the regulatory period commencing from 1 July 2014.

APPENDIX A

Terms of Reference

Inquiry Under Part 7 of the Utilities Commission Act

REVIEW OF OPTIONS FOR IMPLEMENTATION OF A CUSTOMER SERVICE INCENTIVE SCHEME FOR ELECTRICITY CUSTOMERS

Background

In September and October 2008 there were lengthy power outages in Darwin's northern suburbs as a result of equipment failure at the Casuarina Zone Substation (CZS).

In December 2008, the Utilities Commission reported on the merits of requiring the Power and Water Corporation (PWC) to make a payment to customers affected by the CZS outages in recognition of poor service performance. The Commission recommended that the Northern Territory Government implement a guaranteed service level (GSL) scheme for the Territory electricity supply industry that specifies:

- the types of services subject to a GSL;
- Territory specific thresholds for a GSL;
- the types of excluded events;
- the amount of the payment for each type of breach of the GSL; and
- the method by which GSL payments are to be funded.

Separately, the Commission considered introducing a network performance incentive scheme as part of the 2009-14 Network Access Price Determination made in March 2009, but concluded that a trial was necessary prior to introducing financial incentives or penalties for network performance.

Objectives

The Commission is to review and report on options for implementation of a customer service incentive scheme under the Electricity Standards of Service Code.

The objective of this review is to recommend a course of action that will ensure electricity generation, network and retail service standards are appropriate in the Territory, and give electricity service providers the incentive to improve service performance.

Scope of Inquiry

1. The Commission is to report on the merits of implementing a customer service incentive scheme or similar service performance incentive regime in the Territory.
2. Based on the findings of (1), the Commission is to identify options for the design of a customer service incentive scheme in the Territory, taking into account:

- a. any recent relevant policy developments and regulatory practice in other jurisdictions, particularly the development of the Service Target Performance Incentive Scheme by the Australian Energy Regulator;
 - b. the capability of PWC systems to reliably record the impact and duration of interruptions to supply or poor service performance;
 - c. all relevant economic and policy developments, including current and forecast economic conditions.
3. The Commission is to recommend a preferred option for the design of a customer service incentive scheme in the Territory, and provide detailed plans for the implementation of that recommendation.

Timing and Process

The Commission is to begin the review in February 2010, and provide a final report to the Treasurer in July 2010.

The milestones for this review are:

- release of the Issues Paper in February 2010;
- release of the Draft Report in April 2010; and
- submit the Final Report in July 2010.

The Commission will consult with key interest groups and affected parties as part of this review.

APPENDIX B

Index of Questions

Q.1	What reliability of supply measures should be included in a possible Northern Territory GSL scheme and what payment amounts and thresholds might apply?
Q.2	What customer service measures should be included in a possible Northern Territory GSL scheme, and what payment amounts and thresholds should apply?
Q.3	Should a possible Northern Territory GSL scheme only apply to small customers and if so, how should a small customer be defined?
Q.4	Should a possible Northern Territory GSL scheme be restricted to customers on regulated networks?
Q.5	Should service performance thresholds differ for customer groups or geographical areas?
Q.6	Should escalating payment thresholds be set for some performance indicators and if so, which indicators?
Q.7	Should any supply interruptions be excluded for a GSL scheme and if so, how should their exclusion be determined?
Q.8	How should a possible Northern Territory GSL scheme be funded?
Q.9	What would be an appropriate payment mechanism for a possible Northern Territory GSL scheme?
Q.10	Should a financial incentive scheme be implemented in the Northern Territory, and if so: <ul style="list-style-type: none"> • should it be symmetric or asymmetric? • should it provide incentives to maintain or improve service performance?
Q.11	What performance measures should apply to a possible Northern Territory financial incentive scheme and should any particular performance measures be weighted more heavily than others?
Q.12	Should possible incentive rates be based on the cost to the network service provider to improve performance or the value customers place on a particular measure of service performance?
Q.13	Should a possible Northern Territory financial incentive or GSL scheme include generation reliability and retail customer service measures as well as network service performance measures?

Q.14	Should a possible Northern Territory financial incentive or GSL scheme only apply to regulated electricity networks?
Q.15	Should a possible Northern Territory financial incentive or GSL scheme include an allowance to extend the scheme to other service providers who may enter the Northern Territory market?
Q.16	<p>Do you have views on the capability of performance reporting systems, and the willingness of customers to accept the costs of improving reporting systems?</p> <p>The Commission is particularly interested in the Power and Water Corporation's views on this matter, most notably in relation to systems capability.</p>