



Issues Paper

**Electricity distribution network service  
providers**

**Service target performance incentive scheme**

November 2007

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## Request for submissions

Interested parties are invited to make written submissions to the Australian Energy Regulator (AER) on the issues discussed in this paper by the close of business Friday 1 February 2008. Submissions can be sent electronically to [AERInquiry@ aer.gov.au](mailto:AERInquiry@ aer.gov.au).

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The AER prefers that all submissions be in an electronic format and publicly available, to facilitate an informed, transparent and robust consultation process. Accordingly, submissions will be treated as public documents and posted on the AER's website, [www.aer.gov.au](http://www.aer.gov.au) except and unless prior arrangements are made with the AER to treat the submission, or portions of it, as confidential.

Any enquiries about this issues paper, or about lodging submissions, should be directed to the AER's Network Regulation South Branch on (03) 9290 1444 or at the above email address.

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## Shortened forms

AER	Australian Energy Regulator
CAIDI	Customer average interruption duration index
Capex	Capital expenditure
DNSPs	Distribution network service providers
EBSS	Efficiency benefit sharing scheme
ESCOSA	Essential Services Commission of South Australia
ESCV	Essential Services Commission of Victoria
GSL	Guaranteed service level
Opex	Operating expenditure
MAIFI	Momentary average interruption frequency index
MCE	Ministerial Council on Energy
NER	National Electricity Rules
SAIDI	System average interruption duration index
SAIFI	System average interruption frequency index
STPIS	Service target performance incentive scheme
TNSPs	Transmission network service providers

# 1 Introduction

## 1.1 Background

The Australian and state and territory governments have agreed in the Australian Energy Market Agreement (AEMA) to establish a national framework for, among other things, the economic regulation of electricity distribution networks. The Ministerial Council on Energy (MCE) has prepared legislation and rules to give effect to the national framework, which include amendments to the National Electricity Law (NEL) and the National Electricity Rules (NER). Further information about these amendments is available through the MCE's website at <http://www.mce.gov.au/>.

The amendments are expected to take effect from 1 January 2008 at which time the Australian Energy Regulator (AER) will be responsible for economic regulation of electricity distribution networks within the national electricity market (NEM). This responsibility will include regulating the prices and revenues of electricity distribution network service providers (DNSPs) after the current determinations of state and territory regulators have finished their terms. The timing for the AER's first revenue determinations in each jurisdiction is expected to be as follows:

<b>State / Territory</b>	<b>AER revenue determination to apply from:</b>
New South Wales	1 July 2009
Australian Capital Territory	1 July 2009
South Australia	1 July 2010
Queensland	1 July 2010
Victoria	1 January 2011
Tasmania	1 July 2012

After the amended rules come into effect, the AER will begin implementing a number of processes required by the NER in relation to national regulation of electricity distribution networks.

The NER provide the framework for these processes and determine, among other things, the AER's obligations in the administration of the new distribution regime and the scope of the AER's role. This will include obligations on the AER to publish:

- a post-tax revenue model (PTRM)
- a roll forward model (RFM), and
- cost allocation guidelines

for electricity distribution regulation within six months of the amended rules commencing.

Under the NER, the AER will also be required to publish:

- an efficiency benefits sharing scheme (EBSS), and
- a service target performance incentive scheme (STPIS).

A specific timeframe for the publication of these schemes has not been set in the NER.

In addition, the AER will have the discretion to publish other guidelines and schemes that are relevant under chapter 6 of the NER.

This paper sets out the issues relevant to the development of a service target performance incentive scheme. The other models, guidelines and schemes noted above are discussed in a separate paper being released at the same time.

It is noted that under the transitional arrangements in the NER applicable to the AER's first revenue determinations, the AER will be required to implement and have regard to specific arrangements for particular jurisdictions for these determinations. Information about the transitional arrangements in the NER will be available on the MCE's website.

## **1.2 Consultation and development process for a service target performance incentive scheme**

This issues paper is intended to elicit comments from interested parties on the development of a STPIS under a national regulatory framework for economic regulation of electricity distribution networks. The paper also discusses various transitional issues associated with moving from existing state-based STPIS approaches to a consistent, national STPIS regime.

The release of this issues paper is part of a preliminary consultation process which is being undertaken by the AER in the lead-up to commencing its new role in the national regulation of electricity distribution networks and is not a formal process under the NER. As part of this preliminary consultation process, the AER has also released a separate issues paper on the development of the guidelines, models and EBSS referred to above, and has invited written comments on that issues paper, which is available on the AER's website.

In accordance with the consultation procedures in the NER, the AER will be undertaking further consultation in 2008 on a STPIS, as well as the above mentioned guidelines, models and EBSS, and other guidelines and schemes relevant to chapter 6 of the NER.

Consistent with the approach to consultation on DNSP regulatory arrangements outlined by the AER in its previous Statement and Approach paper<sup>1</sup>, the AER is undertaking preliminary consultation now to inform it in the development of a STPIS and to provide stakeholders with an opportunity to provide input and comments prior to the AER formally setting out its proposed or draft position for consultation under the requirements of chapter 6 of the NER. Stakeholders are encouraged to provide submissions during this preliminary consultation and may want to take the opportunity to canvass both threshold issues and issues of detail at this stage. It is noted that under the NER, the time period for formal consultation will generally be limited to 80 business days. As part of that further consultation process, the AER will publish a draft STPIS, and explanatory statement, and seek written comments from interested parties.

This issues paper has been prepared by AER staff with input from consultants advising the AER on the development of the regulatory arrangements for electricity distribution. This issues paper should not be taken as indicating any particular views by the AER Board in relation to distribution regulation.

### **1.3 Revenue determinations for NSW and ACT for 2009-2014**

Chapter 6 of the NER will not apply to the AER's first electricity distribution revenue determinations for NSW and the ACT for the period commencing 1 July 2009, as these determinations will be made in accordance with separate transitional arrangements under the NER. The AER has released separate consultation papers in relation to these resets which are available on the AER's website. The STPIS discussed in this issues paper will not apply to the forthcoming NSW and ACT resets. It is noted however that DNSPs in NSW and the ACT will in the future be subject to chapter 6 of the NER and the STPIS discussed in this paper, consistent with the arrangements outlined in the NER.

### **1.4 Process and timing for future consultation**

For the guidelines, schemes and models that the AER intends or is required to publish by mid-2008 (on the basis that the amended NER take effect from 1 January 2008), it is envisaged that the AER's consultation process under the NER would commence in March 2008 and conclude in June 2008

The STPIS will be part of the 'package' of guidelines, models and schemes that the AER intends to publish by mid 2008.

### **1.5 Relationship to framework and approach process**

Under the NER, it will be necessary to have the guidelines, schemes and models referred to above in place by mid-2008, if the AER is to meet certain obligations

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<sup>1</sup> AER (September 2006) Electricity Distribution Regulatory Guidelines—Statement of Approach



under the NER to prepare framework and approach papers in 2008 for the Queensland and South Australia revenue reset processes. Specifically, the NER will require the AER to commence consultation on its framework and approach papers for these resets at least 24 months before the end of their current 2005-10 regulatory period (i.e. by 1 July 2008) and complete preparation of these papers at least 19 months before the end of that regulatory period (i.e. by 1 December 2008). DNSPs in these jurisdictions will be required to submit their revenue applications by May 2009. It is noted that the framework and approach, and reset, processes, will commence for DNSPs in Victoria six months after these processes commence for DNSPs in Queensland and South Australia.

Under the NER, the purpose of the framework and approach papers is to set out the AER's approach to a forthcoming DNSP revenue reset in relation to the control mechanism (price/revenue) and the classification of services (direct/negotiated). In addition, the framework and approach paper will set out the AER's views on the application of an EBSS and STPIS to the DNSP in question.<sup>2</sup> The publication of these schemes by mid-2008 is therefore necessary if their specific application to the Queensland and South Australia resets is to be considered through the framework and approach processes for these resets.

It is proposed that a generic STPIS will set out the high level principles and framework including a range of suitable measures, while specific measures, targets, weightings and other attributes are to be considered separately for each distributor in the framework and approach process ahead of their respective reset.

## **1.6 Structure of this paper**

The issues paper is structured as follows:

- Section 2 discusses the objectives in establishing a STPIS
- Sections 3 considers the inclusion of different service performance incentive schemes in a national STPIS
- Section 4 sets out different service performance measures and those that could be used in a national s-factor scheme
- Sections 5 to 8 discuss some of the issues relevant to the application of an s-factor scheme including the possible approaches to setting rewards, penalties, targets and for dealing with risks and exclusions
- Section 9 discusses transitional issues in implementing a national STPIS
- Section 10 provides a consolidated list of the specific issues raised in this paper.

## **1.7 Next steps**

The AER will consider submissions to this issues paper which, as noted above, are due by the close of business Friday 1 February 2008. On the basis that the amended

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<sup>2</sup> And a demand management incentive scheme if applicable.

NER take effect from 1 January 2008, the AER will commence consultation under the NER in March 2008 on a draft STPIS. It is also intended that a public forum be held in February following the receipt of submissions to enable interested parties to discuss their views in an open forum and raise matters directly with the AER.

## **2 Objectives in establishing a service target performance incentive scheme**

### **2.1 Purpose of a service target performance incentive scheme**

In a competitive market there is an incentive for a business to ensure efficient levels of service. A reduction in service standards without a corresponding reduction in price may lead to reduced market share and a subsequent reduction in profits. Conversely an increase in service levels may lead to increased prices and profits.

Electricity distribution network service providers (DNSPs) are natural monopoly service providers. They therefore face little risk of losing customers if they provide a poor level of service. DNSPs are regulated using an incentive based regulatory approach that includes a CPI minus X adjustment. One of the aims of this approach is to provide incentives for monopoly businesses to become more cost efficient over the regulatory period. However, such a framework can have perverse incentives in that it might encourage a business to reduce costs at the expense of service standards.

In recognition of these risks, governments and regulators typically monitor the performance of DNSPs to ensure they provide acceptable levels of service. Some jurisdictions, however, also provide financial incentives to encourage DNSPs to meet target levels of service by making a direct link between revenue and service standards.

The purpose of a service target performance incentive scheme (STPIS) is to balance the incentive to reduce expenditure with the need to maintain and improve service quality for customers through establishing a direct financial link (reward or penalty) between revenue and service standards.

### **2.2 NER requirements**

Clause 6.6.2(a) of the amended NER requires the AER to develop and publish an incentive scheme or schemes (service target performance incentive scheme) to provide incentives (which may include targets) for DNSPs to maintain and improve performance.

Clause 6.6.2 (b) would require the AER to:

- consult with authorities responsible for the administration of relevant jurisdictional electricity regulation
- ensure that service standards and service targets (including guaranteed service levels) set by the scheme do not put at risk the DNSP's ability to comply with relevant standards and service targets (including guaranteed service levels) as specified in jurisdictional electricity regulation
- take into account:
  - the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs

- any regulatory obligation or requirement to which DNSPs are subject
- the past performance of the distribution network
- other incentives available to the DNSPs under the NER or a relevant distribution determination
- the need to ensure that the incentives are sufficient to offset any financial incentives the service provider may have to reduce costs at the expense of service levels
- the willingness of the customer or end user to pay for improved performance in the delivery of services, and
- the possible effects of the scheme on the implementation of non-network alternatives.

## 2.3 National framework

Each of the state jurisdictional regulators has previously consulted with relevant regulated businesses and stakeholders on the establishment of incentive mechanisms similar in scope to the STPIS. The AER acknowledges that much thought has already been given to the design of suitable schemes and several have been implemented.

In setting out its STPIS, the AER could simply review and update each of the current schemes, leaving improvements in the schemes for a future time or to be undertaken on a progressive or reset by reset basis. The AER notes, however, the refinements that jurisdictional regulators have made to their schemes in the second or third pricing decisions and that this could establish a basis for the development of a common national scheme. In particular, it may be worth exploring whether it is possible to establish schemes that represent best practice, within a single national framework. The intention would be to develop a framework that could accommodate DNSPs that have been applying established schemes as well as DNSPs that have not applied schemes or whose experience has been confined to first generation schemes. These matters would be considered during the framework and approach process, at which time the specific application of the STPIS to a DNSP given its particular circumstances would be considered.

**Q. The AER would like views on whether it is feasible and appropriate to establish a common approach within a national framework**

**Q. The AER would also like views on the issues it may need to consider in establishing this framework. In particular:**

- **What should be the key elements?**
- **How might a national scheme deal with differences between regions/jurisdictions?**
- **What are the possible obstacles to achieving an effective national framework?**

### 3 Types of service incentive scheme

Service target performance incentive schemes can be grouped into three categories:

- public reporting schemes
- guaranteed service level (GSL) schemes, and
- financial incentive (s-factor) schemes.

This section describes the three approaches and how they are currently applied in Australian jurisdictions. This is followed by a discussion of some of the issues relevant to the application of these approaches in a national STPIS.

#### 3.1 Public reporting schemes

Public reporting is generally carried out to inform customers and other interested parties of the actual service levels that are being achieved by the regulated business. It can shame poor performers into improving service levels and promote competition between businesses through comparison which may in turn encourage a business to improve service performance to improve its ranking. Public reporting aids transparency in the relative service levels of DNSPs, although it is noted that geographical, environmental and other factors need to be considered when comparing businesses.

Currently, most states monitor and report on service quality information which they collect for the purposes of monitoring compliance with obligations contained in law, licences or codes. In other jurisdictions, the DNSP is required to publish service quality information. This reporting is based on similar and in many cases the same indicators. The Energy Supply Association Australia (ESAA) publishes distribution service quality information at a state level.

Under section 28V of the amended NEL, the AER has the power to prepare and publish reports on service performance. It is noted that consultation requirements under the NEL will apply to the publication of reports on service performance by the AER.

**Q. The AER would like views on whether it should require DNSPs to report on key aspects of their service performance for public reporting purposes.**

**Q. If so, should DNSPs be required to report just on those aspects of service performance measured for an incentive scheme (e.g. GSL scheme or s-factor scheme) or on a common set of agreed measures?**

**Q. The AER would also like views on how future reporting arrangements which may be multi-faceted (i.e. reporting to the AER in relation to an incentive scheme and potentially for public reporting purposes) could be simplified or rationalised to reduce compliance costs.**

## 3.2 GSL schemes

Under the NER, it appears that the AER has the discretion to develop a GSL scheme as well as an s-factor scheme notwithstanding that GSL schemes already exist under jurisdictional arrangements and in some cases are mandated through regulations. In considering whether to develop a national GSL scheme the AER will need to consider these mandated schemes. The interaction of GSL and s-factor schemes is discussed further in section 3.4 below.

GSL schemes set the minimum 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 and then penalising the service provider when performance is below the threshold. GSL schemes are therefore designed to provide an incentive for a DNSP to improve service to its worst served customers. The schemes currently in place are generally funded through the operational costs of a DNSP. The cost of these schemes is therefore borne by a DNSP's wider customer base.

There are different ways that a GSL scheme can operate. Current GSL schemes generally provide for monetary penalties on DNSPs for poor service to be paid directly to customers soon after incidents of poor service.

The amount of the GSL payment is often set arbitrarily based on the regulator's or DNSP's view about the appropriate level. In some cases, the amount is based on an assessment of the expected payments for the preferred threshold level of service performance so that an agreed revenue is placed at risk. Typically, GSL payments are set at a level that is too low to compensate customers for the lack of service delivery, so that it is seen as recognition for poor service rather than compensation.

GSL schemes generally require the payment to be made to the customer either automatically or on application once the threshold level has been exceeded. It is noted that the incentive for the DNSP to improve performance is weakened where payments are only made on application, as it is likely that a large proportion of customers who are eligible to receive a payment will not make a claim.

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 instance, for urban customers and for rural customers. Alternatively, several threshold values can be set so that additional or increasing payments are made as each threshold value is exceeded. This approach allows a single scheme to apply to diverse customer groups while providing an increasing incentive to a DNSP to address particularly poor service performance.

All jurisdictions have established GSL schemes, although the services subject to penalty payments vary widely. In some jurisdictions payments are made on request, while in others, payments are made automatically. As reflected in clause 6.6.2(b) of the amended NER, some jurisdictions have mandated service standards and targets in jurisdictional regulations, and these standards and targets are incorporated in the GSL schemes currently administered by jurisdictional regulators. These schemes often run in parallel with s-factor schemes due to their differing purposes. This issue is discussed further below.

**Q. The AER would like views on whether it should develop a national GSL scheme.**

**Q. The AER would also like views on issues associated with the implementation and operation of a national GSL scheme.**

### **3.3 Financial incentive (s-factor) schemes**

Financial incentive (s-factor) schemes provide a direct financial incentive for a DNSP to maintain or improve service standards. They typically operate in a symmetrical way by rewarding good performance as well as penalising bad performance. They do this by providing a financial reward if service improves (resulting in higher revenues or customer prices) and a financial penalty if service declines (resulting in lower revenues or customer prices). In this way it provides a direct link between a DNSP's revenue and the standards of service it provides.

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<sup>3</sup> and S is the service incentive factor. When the s-factor is positive, prices (and hence revenues) increase, and when the s-factor is negative prices decrease. A similar form of control applies to revenue-capped regulation where the s-factor varies the maximum allowed revenue pre-determined for that year.

S-factor schemes can be categorised into two different forms. Target based s-factor schemes take a measure of service performance and compare the actual performance in a particular year with either a target or the result in the previous year. The resulting difference in performance is then multiplied by a weighting factor to derive an appropriate factor to be used in the price control formula. Performance band based schemes (such as the scheme adopted in South Australia) define performance bands around the incentive target and award points for actual performance depending on which performance band is achieved.

In practice it is usual for an s-factor scheme to include more than one measure of service performance. Where a number of measures are used then each measure is individually weighted to provide an appropriate incentive.

There are many ways that an s-factor can be designed. An s-factor 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.<sup>4</sup>

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<sup>3</sup> It is noted that under the post-tax revenue model (PTRM), X is set so as to smooth the time profile of revenues. Further information about the PTRM is available in a separate issues paper on the development of the guidelines, models and EBSS for distribution regulation, referred to previously in this issues paper.

<sup>4</sup> This is the approach taken by the AER in electricity transmission regulation.

- provide an incentive to improve performance over time by changing the target annually so that the DNSP is required to improve performance each year just to meet the target.<sup>5</sup>
- reward sustained performance improvements. This is achieved by setting the target for a year at the actual result for the previous year. Distributors are thereby rewarded when service is better than the previous year and penalised when service is worse than the previous year.<sup>6</sup>

Jurisdictional regulators in South Australia, Tasmania, and Victoria have previously implemented financial incentive mechanisms (s-factor type schemes) that affect the maximum amount of revenue a DNSP may earn under the distribution price control formula. NSW has undertaken a ‘paper trial’ of such an incentive mechanism. No s-factor type schemes have been introduced in Queensland and the ACT.

In developing the framework for a national s-factor scheme the AER would need to consider a range of issues, including:

- the form an s-factor scheme might take
- the type and number of measures to be included
- the weighting that should be applied to each measure (this will need to reflect the importance placed on each of the measures by customers)
- the size of the total incentive
- the targets that should apply
- whether the scheme should be symmetrical, that is, provide rewards for performance above a threshold and penalties for under performance, and
- the timing of the incentive.

A discussion of some of the design considerations for an s-factor scheme is set out in the next sections of this paper.

**Q. The AER would like views on the overall design of a national s-factor scheme. In particular:**

- **the form that a national s-factor scheme might take**
- **whether the scheme should be symmetrical**
- **the number of measures that should be included, and**
- **any other relevant threshold matters not dealt with elsewhere in this paper.**

**Q. To what extent should existing s-factor schemes form the basis of a national scheme?**

<sup>5</sup> This was the approach taken by the ESCV for its 2001-06 price determination.

<sup>6</sup> This was the approach taken by the ESCV for its 2006-10 price determination.



### 3.4 Interaction between GSL schemes and s-factor schemes

The table below sets out the key differences in general between GSL schemes and s-factor type schemes.

GSL type schemes	S-factor type schemes
Penalty only	Provides for rewards and penalties
Focuses on worst served customers	Focuses on average performance of a defined part of the network
Sets minimum standards (thresholds) for service quality	Sets average network performance targets
Payments made directly to customers affected	Average prices for all customers increased or decreased
Aspects of service generally dealt with include: reliability, complaint handling, appointment keeping, and new connections	Aspects of service generally dealt with include: reliability (although recently schemes in Victoria and South Australia have included measures of customer service too)
Information reporting limitations i.e. not all customers affected will be known	No information reporting limitations

In general, GSL schemes are aimed at maintaining minimum service levels to worst served customers, whereas s-factor type schemes are aimed at maintaining and improving average network performance. In addition, the aspects of service covered by GSL type schemes can be more targeted than the average measures typically used by s-factor schemes—although the latter type of schemes can also be more targeted. Because each of the schemes can be aimed at addressing or meeting distinct objectives, the AER considers that there is merit in considering the introduction of both types of schemes in a national framework.

**Q. The AER invites views on the establishment of both GSL and s-factor schemes in a national framework. In particular:**

- **should both types of schemes be implemented**
- **is the value to customers of having both types of schemes sufficient compared to the additional costs associated with having to implement and administer multiple schemes, and**
- **how should information requirements be set to minimise compliance and collection costs?**

## 4 Types of service performance measures in s-factor schemes

The AER notes that an s-factor scheme would need to rely on standard measures of service quality that are clearly defined, reliable and auditable. In established regulatory frameworks it is generally found that there are three key aspects of service quality. These are:

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

This section considers indicators of these key aspects of performance that might be applied in a national s-factor scheme.

### 4.1 Reliability indicators

All DNSPs collect data on reliability of supply. The indicators of SAIFI, SAIDI, CAIDI and MAIFI established by the Utility Regulators' Forum are generally used and understood. These indicators are described in the following table.

#### Description of reliability indicators

Indicator	Description
SAIFI (System Average Interruption Frequency Index)	a measure of the number of times the average connected customer loses supply in any one year.
SAIDI (System Average Interruption Duration Index)	a measure of the cumulative time that the average connected customer is without an electricity supply in any one year.
CAIDI (Customer Average Interruption Duration Index)	a measure of the average duration of all interruptions experienced by individual connected customers.
MAIFI (Momentary Average Interruption Frequency Index)	a measure of the number of times the average connected customer experiences a momentary supply interruption in any one year (where a momentary interruption is defined in Australia as lasting less than one minute).

Jurisdictional regulators have agreed standard definitions for these measures and reporting has been occurring in all jurisdictions over the past few years. Most jurisdictions should therefore have sufficient accurate historical data to set targets for these indicators (except MAIFI).

It should be noted that these indicators are measures of average network performance and can therefore mask differences in supply reliability to customers connected to different parts of the network. For example, customers in rural areas generally receive lower levels of reliability compared to customers in urban areas because of the cost to

customers of providing equivalent reliability to rural areas. To overcome this issue, measures can also be applied to specific geographic areas. The Utility Regulators' Forum has also agreed definitions for different parts of the network using feeders. The feeder classifications are shown in the following table.

### Feeder classifications

Feeder type	Description
CBD	A feeder supplying predominantly commercial, high rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy when compared to urban areas.
Urban	A feeder which is not a CBD feeder with actual maximum demand over the reporting period per total feeder route length greater than 0.3 MVA/km.
Rural Short	A feeder which is not a CBD or urban feeder with total feeder route length less than 200km.
Rural Long	A feeder which is not a CBD or urban feeder with a total feeder route length greater than 200km.

Notes: 'Rural short feeder' may include feeders in urban areas with low load densities. Back up feeders should be given the same classification as the normal supply feeder.

Source: Utility Regulators' Forum (March 2002), National Regulatory Reporting for Electricity Distribution and Retailing Businesses

Feeders can also be classified into those that are the worst performers. For example, in South Australia distribution feeders that have reliability below a certain threshold value are grouped and included in an s-factor scheme. In this way an s-factor scheme can be targeted more directly to customers receiving the worst service, similar to a GSL scheme.

Different groupings of the network can also be used. For example, in Tasmania distribution feeders are grouped into those supplying different categories of communities, although at present this applies to a modified GSL type scheme rather than to an s-factor scheme.

It is also possible to distinguish between planned and unplanned outages. It can be argued that customers are affected less by planned than unplanned outages as customers can prepare for the outage by finding an alternative form of energy or by making other arrangements. However, it can also be argued that planned works only make up a small proportion of outages and that DNSPs should have an incentive to reduce the duration of both types of outage.

**Q. The AER would like views on which measures of reliability to include in a national s-factor scheme.**

**Q. The AER would also like views on the classification of feeders by type and whether the AER should distinguish between planned and unplanned interruptions.**

## **4.2 Quality indicators**

Quality of supply can be measured directly through the use of voltage quality measuring equipment or through secondary sources such as the number of customer complaints relating to quality of supply.

Indicators of power quality include:

- voltage level
- frequency variation
- voltage waveform (harmonics), and
- interference or noise.

Indicators of voltage level include:

- dips (short-term drops in voltages)
- swells (short-term increases in voltage)
- spikes (momentary increases in voltage), and
- low voltage (sustained drops in voltage).

The impacts that voltage variations have on customers includes the need to reset clocks or computers, or damage to equipment. Industrial customers may suffer significant losses due to interruptions to manufacturing processes or loss of product quality.

Unlike reliability, where indicators such as SAIDI exist, there are no commonly used indicators for measuring the average quality of supply to customers. Indirect measurement involves indicators such as the number of complaints about various aspects of supply quality. Accurate classification of complaints into the categories is difficult to achieve and therefore these indicators are not considered to be particularly reliable. In addition, there are a number of factors that can cause supply quality to vary, such as the effect of the customer's equipment or installation on the power system. A complicating factor is that many of these factors are outside the control of a DNSP.

Currently, no s-factor scheme in Australia includes a quality of supply measure. However, the AER notes that the need to measure power quality is increasing, as the dependence on electronic devices increases and customer expectations for consistent power quality grows. It may therefore be appropriate for the AER to work with

DNSPs to improve direct monitoring of power quality so that this could be included in an s-factor scheme in the future.

**Q. The AER would like views on the appropriateness of incorporating quality indicators in a future s-factor scheme, including the likely costs and benefits of incorporating quality indicators, the possible types of measures that could be used, and the availability of historical data.**

**Q. Should supply quality be addressed in a different way such as through a GSL scheme or some other scheme?**

### **4.3 Customer service indicators**

Customer service indicators typically include the:

- number of telephone calls answered in 30 seconds
- quality of telephone call response received
- timeliness of response to written enquiries
- time to repair a faulty street light
- timeliness of customer connections and reconnections, and
- number of different types of complaints.

Currently, only telephone call response (in SA and Victoria) has been included in an s-factor type scheme.

**Q. The AER would like views on customer service indicators to be included in an s-factor scheme, including the likely costs and benefits, and feasibility, of incorporating a range of indicators.**

**Q. Would customer service indicators be more appropriately addressed in a GSL or other scheme?**

A summary of service reliability and customer service measures used in jurisdictional s-factor schemes is provided in appendix 1.

## 5 Approaches to setting rewards and penalties in an s-factor scheme

In mechanisms that have rewards and penalties, the value of the reward must be carefully selected so that it is high enough to influence a DNSP's behaviour but lower than or equal to customers' willingness to pay for service improvements. This is reflected in the amended NER which require the AER to take account of:

- the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme
- the need to ensure that the incentives are sufficient to offset any financial incentives the service provider may have to reduce costs at the expense of service levels, and
- the willingness of customers to pay for improved performance.

The relationship between the cost of service improvements and customers' willingness to pay for those improvements is difficult to establish. Economic theory suggests that the schedule for rewards and penalties should mimic customers' marginal willingness to pay for improved service quality. This allows a DNSP to change its service quality up to the point where its marginal cost of improving service quality equals its reward for doing so (e.g. though the s-factor scheme) and the optimal level of service quality is attained.

While a DNSP can estimate the costs associated with providing different levels of supply reliability, measuring customer willingness to pay for different levels of reliability is inherently less precise.

### 5.1 Possible approaches

Possible approaches to setting the incentive rate include:

- estimating the marginal cost of bringing about service improvements and ensuring that the total cost of failure to deliver target levels of service (i.e. incurred through the penalties applied under the STPIS) exceeds the cost of delivering that level of service.
- measuring a customer's economic loss associated with the loss of service. An indicator of this kind is the value of lost load (VoLL), which can be defined as the value an average consumer puts on an unsupplied MWh of energy. In theory, the marginal willingness to pay for improved reliability should be equal to the VoLL. The problem with this approach is that it does not take into account subjective measures such as the value of inconvenience for customers.
- surveying customers directly to assess their willingness to pay for service improvements. The problem with this approach is that customers have difficulty valuing a hypothetical product and DNSPs would have an incentive to over state costs of improved service quality.

- measuring the willingness of customers to pay for an incremental improvement from the current level of reliability (the marginal willingness to pay) and comparing this with the additional costs to provide the incremental improvement (the marginal cost). If the ratio of marginal willingness to pay and marginal cost is greater than 1, it can be inferred that the current level of supply reliability is below the optimum.

To counter the risk of setting the rewards and penalties too high in an s-factor scheme, the incentive weightings for a particular measure can be set at a lower rate when measures are first introduced. Alternatively, some regulators have imposed overall caps on the total value of the reward or penalty. For example, Ofgem, the regulator in Britain, has capped the impact at 2% of a DNSP's revenue. Overall caps are discussed further below.

## **5.2 Current arrangements**

### **5.2.1 South Australia**

For the 2005-10 price determination, ESCOSA based the incentive rate on the results of a 2002 customer willingness to pay survey conducted by KPMG. The survey found that customers who perceived that they had received three or more interruptions in the previous year were generally willing to pay for a reduction in the number of interruptions experienced, and customers who perceived that they had received at least 180 minutes of interruptions in the previous year were willing to pay for an improvement in the total duration off supply. The incentive targets were calculated by examining the feeders that experienced two consecutive years of three or more interruptions or 180 or more minutes off supply per annum, so as to ensure that the scheme focused on feeders that exhibited ongoing poor performance. ESCOSA put an overall cap on the revenue at risk for the 2005-10 regulatory period of \$37.5m (\$2006) (about 1.6% of estimated revenue).

### **5.2.2 Victoria**

For the 2001-05 price determination, the Office of Regulator General (ORG) (now the ESCV) set rewards and penalties based on DNSPs' estimates of their costs of improving service quality. The incentive rates were set for each DNSP based on the estimated marginal cost of bringing about service improvements. The ORG also estimated weightings for each of the measures. The weightings were 100 per cent for unplanned SAIFI, 65 percent for unplanned CAIDI and 25 percent for planned SAIDI. An overall cap on revenue changes was not set due to the natural annual variability of reliability.

A review of the incentive mechanism in 2005 by the ESCV found that it had been effective in changing DNSPs behaviours, but that the incentive rates had generally been set too low. In its 2006-10 price determination, the ESCV moved to base its incentive rates on consumers' willingness to pay. The ESCV used a state wide value of consumer reliability determined by its consultants, Charles River Associates rounded to \$30,000 per MWh.<sup>7</sup> For the call centre performance measure, the ESCV

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<sup>7</sup> Except for CitiPower CBD customers whose incentive rate was rounded to \$60,000 per MWh.

based the incentive rate for each DNSP on the South Australian willingness to pay study undertaken by KPMG. The ESCV adopted weightings for each of the measures included in the scheme based on the results from the South Australian customer research, varying the weightings by DNSP and network type.

### **5.2.3 Tasmania**

For the 2003-07 price determination, OTTER used the outcomes of the DNSP, Aurora's customer value study to develop incentive rates. The scheme was capped at \$8m (2004).

**Q. The AER would like views on the above approaches for setting incentive rates and other possible approaches.**

**Q. The AER would like views on the feasibility and associated costs and benefits of adopting each approach.**

**Q. The AER would also like views on how it should determine relative weightings for measures.**



## 6 Approaches to setting performance targets under an s-factor scheme

### 6.1 Possible approaches

The following table identifies how targets for average measures of performance can be set.

The most recent year's result	Using the most recent performance result is the simplest form of target setting. However, it is appropriate to use this method only where there is no volatility in past performance. Furthermore, the AER notes that it is required to take the past performance of DNSPs into account under the amended NER.
Average historical performance	Average historical performance is appropriate for setting incentive targets when good historical data is available, performance is reasonably consistent, and past performance is considered to be a good indicator of future performance. The AER uses average historical performance for the setting of targets in transmission.
Trends extrapolated from past performance	Where past performance has not been stable it is useful to adopt a trend to set the incentive target. The reason for the trend must be understood so that it can either be included in the benchmark or excluded.
Moving average historical performance	Moving averages are useful when there is some volatility in past performance and an underlying trend is apparent. Moving averages can be used to reset benchmarks on an annual basis.
External benchmarks	External benchmarks such as national or international targets are further options for setting targets, although these need to be applied with regard to, among other things, the different operating environments that networks may be subject to.

In setting a target, the AER would also need to consider how to take into account service performance improvements already funded through a revenue determination (eg a capex or opex allowance), as rewarding a DNSP for such improvements through the service incentive mechanism would result in double recovery of these costs. This means that where a step change in performance has already been funded, this should be reflected in the target.

### 6.2 Current arrangements

Jurisdictional regulators have established performance benchmarks for measures in the s-factor schemes using a combination of trending, average performance and performance thresholds. Some examples are provided below.

#### 6.2.1 South Australia

The service incentive mechanisms for the 2005-10 regulatory period consist of customer minutes off supply above a threshold, and the proportion of telephone calls responded to within 30 seconds. The threshold for the customer minutes off supply measure was determined (from the customer willingness to pay survey undertaken by

KPMG, referred to previously) as those customers who experience more than 180 minutes off supply per annum, or more than 3 supply interruptions, in two consecutive 12 month periods. The benchmark for call centre performance was set at the average of historical performance in the period 2000/01 to 2003/04.

### **6.2.2 Victoria**

In the 2006-10 regulatory period, the reliability measures SAIDI and SAIFI were set at the incentive target for the end point of the previous regulatory period, that is the 2005 level. This approach avoided transitional issues between the old and new schemes. The reliability measure MAIFI and the call centre measure were based on the trend of historical performance in the period 2001-04, adjusted for outliers.

### **6.2.3 Tasmania**

For the 2003-07 regulatory period, incentive targets for the reliability measures SAIDI and SAIFI were set by trending from historical performance, and adjusting for the proposed DNSP reliability improvement programs funded through the price determination for that period.

<p><b>Q. The AER would like views on the possible approaches outlined above to setting targets in an s-factor scheme.</b></p>
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## 7 Allowing for risks

The introduction of a service incentive mechanism can introduce additional risk to a DNSP. The aspects of risk that require consideration are whether the risks are symmetrical or not, the total size of the risk, and the extent to which a DNSP should be accountable for events caused by factors over which it has little or no control. This section identifies some of the mechanisms available for dealing with risk. These mechanisms are used by the AER in its transmission STPIS.

### 7.1 Deadbands

Some incentive mechanisms have a ‘deadband’ around the benchmark where small variations in performance attract neither a reward nor a penalty. The deadband need not be applied to all measures within the suite of measures that form the incentive mechanism.

The main rationale for having deadbands in symmetric incentive mechanisms is to prevent volatility in the DNSP’s allowed revenue from small and probably insignificant fluctuations in performance and which may not be directly controllable by the DNSP. Incorrectly set deadbands, however, effectively remove the operation of the incentive mechanism from a range of performance levels and may reduce the DNSP’s focus on achieving service quality improvements.

### 7.2 Overall limits

As noted earlier, incentive mechanisms often have an overall financial limit. This provides certainty to the DNSP of the maximum penalty that it might receive and, correspondingly, also provides a maximum reward that customers might pay for. If the limit is reached, the incentive mechanism ceases for that period (typically, it ceases for that year). Because of this, most incentive mechanisms also limit the impact of each measure’s contribution to the overall incentive (for instance, by applying a collar) and allow the exclusion of certain events so that the overall limit is less likely to be reached.

### 7.3 Collars

Collars placed around the target value are typically used to remove outlier performance. They can also be used to limit a DNSP’s risk of a particularly poor performance year. Collars consist of a cap and a floor. In a symmetrical incentive mechanism, these should be set so that the probabilities of exceeding the cap and floor values are equal.

**Q. The AER would like views on mechanisms to deal with additional risk introduced by an s-factor type scheme and whether it is appropriate for such risks to be wholly borne by DNSPs and/or customers.**

## 8 Allowing for exclusions

Commonly two types of events are excluded from service incentive mechanisms: events that are totally beyond the control of the DNSP such as failure of the transmission system or lack of generation, and extreme events such as exceptional storms or cyclones.

The definition of the exclusion should provide an exemption in the case of these unusual events but should not be so broad as to exempt DNSPs when the event is not outside their control or influence.

There are two broad approaches to applying exclusions. Firstly, an event can be excluded from the service incentive mechanism when it is an “extreme” event. Secondly, a quantitative measure can be used to define an exclusion event. Each of these approaches is discussed below.

### 8.1 Qualitative measures

The use of “extreme” events requires a clear definition of what constitutes an extreme event. For the ESCV’s 2001-05 price determination, the exclusion definition required the event to be “rare”, however problems were experienced in defining what a “rare” event was, leading to complex applications and assessments and associated costs.<sup>8</sup>

Exclusion criteria based on force majeure events are common. This is the criteria used by the AER in transmission. However, there are different definitions of “force majeure events”. Definitions include circumstances beyond the control of the regulated business. ESCOSA defines force majeure as an event outside the control of a DNSP or a customer.

### 8.2 Quantitative measures

Quantitative measures can be as simple as defining a limit on a single measure. For reliability of supply, for example, an exclusion could apply on a day when the SAIDI exceeds 3 minutes. More commonly, exclusions are statistically based. The benefits of quantitative measures are the ease of use, the removal of any need to investigate or decide whether a particular day or event should be excluded, ease of calculation, and consistency in reporting.

A significant amount of research has been undertaken in the United States on the use of statistical criteria for exclusions for reliability of supply reporting. This has culminated in the development of the US Institute of Electrical and Electronics Engineers Standard IEEE 1366-2003. This standard proposes the use of a 2.5 beta exclusion method based on daily SAIDI. A statistical calculation is undertaken to determine a limit on daily SAIDI for each DNSP. When an exceptional event occurs and daily SAIDI exceeds the limit, the day is excluded from any incentive calculation.

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<sup>8</sup> These applications and assessments are available on the ESCV website, [www.esc.vic.gov.au](http://www.esc.vic.gov.au).

The benefit of using a standard such as IEEE 1366-2003 is that there is a sound body of research supporting its use and it supports the comparison of network performance between Australian and international distribution businesses. DNSPs in NSW are required to report exclusions based on this method. The ESCV implemented a statistically based exclusion in the Victorian incentive mechanism effective from 2006.

It is noted that the exclusions currently in use in Australia primarily affect measures of network reliability. They do not affect measures of service quality or customer service.

**Q. What approach should the AER take in applying exclusions?**

**Q. Should exclusions cover reliability indicators and customer service indicators?**

**Q. Should exclusions be determined by reference to qualitative or quantitative measures?**

**Q. How appropriate is a standard such as IEEE 1366-2003?**

### **8.3 Options to limit the contribution of an excludable event**

When the exclusion threshold is exceeded a regulator has three options to limit the contribution of events:

- the impact of the events can be removed from the incentive scheme
- the performance can be limited to the threshold value, or
- a value of performance (say the average) can be substituted when calculating the performance measure.

The removal of the events is the simplest approach and is often adopted where a large number of events occur, and the contribution of the extreme events are small, or where the majority of events that exceed the threshold are clearly outside of the DNSP's control. In other circumstances, limiting the contribution of the event might provide a perverse incentive to extend the event until the threshold value is exceeded so as to cause its removal from the incentive mechanism.

**Q. Where an exclusion threshold is exceeded what action should the AER take to limit the contribution of events?**

## 9 Implementation issues for the transition to a national scheme

This section sets out some of the transitional issues relevant to the development and application of a national STPIS.<sup>9</sup>

### 9.1 Issues for jurisdictions currently without an s-factor scheme

New South Wales, ACT and Queensland currently do not have s-factor schemes. The AER notes, however, that a ‘paper trial’ has been undertaken in NSW.<sup>10</sup> Applying incentive schemes to future revenue resets in these jurisdictions will give rise to transitional issues. The major transitional issues can be grouped into the following categories:

- issues relating to the availability of data
- issues relating to the accuracy of data, and
- issues relating to the interaction between incentive schemes and mandatory service standards.

**Q. Are there any other issues that the AER needs to consider?**

#### 9.1.1 Issues relating to the availability of data

Issues will arise where service performance data at a feeder level is only available for network average performance. For example, network average data is not suitable for establishing an incentive mechanism based on customer preferences to improve performance on the worst performing parts of the network.

Data availability issues may also arise in relation to the implementation of statistically based exclusion mechanisms. Quantitative exclusion mechanisms are used to minimise the extent to which extreme weather events will impact on the intended action of an incentive mechanism. As discussed previously, the IEEE 1366-2003 standard provides for the use of a 2.5 beta exclusion method based on daily SAIDI. The availability of such data may influence the AER’s consideration of implementing such quantitative based exclusion criteria for service measures.

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<sup>9</sup> As noted previously, under the transitional arrangements in the NER applicable to the AER’s first revenue determinations, the AER will also be required to implement and have regard to specific existing arrangements for particular jurisdictions for these determinations.

<sup>10</sup> IPART determined that placing revenue at risk under the s-factor scheme was not appropriate, mainly due to the lack of robust historical data.

**Q. The AER invites comments from interested parties on the current and future availability of data on reliability and quality of supply measures for DNSP's currently without an s-factor scheme.**

### **9.1.2 Issues relating to the accuracy of data**

Where the capability of a DNSP to calculate customer connectivity is not available, the number of customers affected by a network outage is estimated by the DNSP. This means that the quality of data is likely to be variable.

Further, as jurisdictions implement connectivity models, the new reporting systems are likely to result in a worsening of reported performance due to an increased capability to record when outages occur and the precise number of customers affected. This may create a step change between historical and future reported performance, which would need to be taken into account when setting the targets and incentive rates.

**Q. The AER invites comments from interested parties on the current and future accuracy of data for reliability and quality of supply measures.**

**Q. How could the AER take changes in performance data, due to changes in recording systems, into account in setting targets and incentive rates?**

### **9.1.3 Issues relating to the interaction between a national s-factor scheme and mandatory jurisdictional service standards**

Mandatory service performance conditions are implemented by jurisdictions to facilitate the safe and reliable supply of electricity. However, such standards may affect the operation of an incentive mechanism. For example:

- service standards may affect the rationale for implementing an incentive mechanism based on reliability. That is, the rationale for implementing an incentive mechanism based on reliability may not be clear where the service standards already require service improvements over time. This is because both service standards and incentive mechanisms aim to effect service improvements over time, and as such, they may be seen as substitutes for each other, and
- service standards may provide a DNSP with a second cost recovery mechanism for service improvements where a DNSP is subject to both mandatory service standards and an incentive mechanism. This is because mandatory service standards are normally a relevant expense when determining a DNSP's future revenue requirements. Therefore, if the incentive mechanism targets are not set with reference to the mandated service standards, the DNSP may have the ability to recover the costs of service improvements both through the incentive mechanism payments and through increased tariffs from higher opex allowances. It may be difficult, however, to ascertain the extent to which mandated service standards will impact on network average performance targets.

**Q. The AER invites submissions on issues relating to the interaction between mandatory jurisdictional service standards and a national STPIS for DNSPs currently without an s-factor scheme.**

**For example, what benefits and limitations could the existing mandatory jurisdictional service standards place on the implementation of a national s-factor scheme?**

## **9.2 Transitional issues for jurisdictions with an s-factor scheme**

In South Australia and Victoria, DNSPs are currently subject to s-factor schemes that will operate until the end of the current regulatory period. In Tasmania, OTTER has previously implemented an s-factor scheme, but has decided to discontinue the scheme for the 2008-2012 price determination period.

Transitional issues in relation to the continuation of s-factor schemes in these jurisdictions can be grouped into the following categories:

- issues in relation to the availability and quality of data
- issues arising from changing the incentive rates applicable to current s-factor schemes, and
- issues arising from changing the structure of the scheme and its impact on historical data.

**Q. Are there any other issues that the AER needs to consider?**

### **9.2.1 The availability and accuracy of data**

Where targets in incentive mechanisms are set on the basis of historical performance, a lack of historical data or the level of the network at which the data is being recorded may limit the extent to which existing measures may be modified or new measures may be included. It would be expected that this would only be an issue if a new scheme incorporates a different approach to that currently used.

Furthermore, changes to existing data collection systems may alter performance results. This is due to the fact that an improved ability to collect data may result in a different performance result, not necessarily due to a change in performance of the DNSP, but due to the improved ability to report data accurately.

**Q. The AER invites submissions from interested parties on current and future data availability and accuracy in relation to DNSPs currently with an s-factor scheme. In particular, the AER would like views on the availability and accuracy of service reliability and quality data, including the level of the network at which this data is recorded.**



### 9.2.2 Changing the structure of schemes (definitions/exclusions)

Service performance targets are generally based on historical performance. This may create transitional issues if the structures of the current incentive mechanisms are altered. For example, changes in the data collection system and in the business rules for aggregation of the individual events may alter the reported performance. Consequently, changes in definitions or exclusions between regulatory periods may need to be considered when using historical performance as the basis for future targeted levels of performance.

**Q. The AER invites comments from interested parties on whether changes in reporting and the incentive mechanisms themselves should be taken into account in developing targets for DNSPs currently with an s-factor scheme.**

### 9.3 Transitional issues in relation to guaranteed service levels

Currently all jurisdictions have GSL schemes. The jurisdictional GSL schemes are currently implemented in different ways. For example, in:

- the ACT, GSLs are implemented by the consumer protection code
- NSW, GSLs are implemented by design reliability and performance licence conditions determined by the NSW Minister for Energy and Utilities
- South Australia, GSLs are implemented by the standard connection and supply contract between customers and the DNSP under the South Australian Electricity Act (1996), and
- Victoria, GSLs are implemented by the Electricity Distribution Code (2007).

Clause 6.6.2 of the amended NER notes that:

- A service target performance incentive scheme operates concurrently with any average or minimum service standards and guaranteed service level schemes that apply to the Distribution Network Service Provider under jurisdictional electricity legislation.

Therefore, in considering whether to develop a national GSL scheme the AER will need to consider current jurisdictional arrangements for GSL schemes, some of which are mandated through regulations. There are a range of potential transitional issues in relation to this matter, however, the AER expects that DNSPs subject to existing schemes should expect these to continue in the transition to any full national approach.

**Q. If the AER were to develop a national GSL scheme, what issues arise regarding existing GSL schemes (that are mandated under jurisdictional electricity legislation) operating concurrently with a national scheme.**

**Q. In relation to existing GSL schemes that are not mandated, what issues arise in relation to transitioning these schemes to a national scheme, should this be considered appropriate?**

# 10 Issues raised in this paper

The following is a consolidated list of the specific issues raised in this issues paper.

Section reference	Topic	Question raised
<b>Objectives in establishing a service target performance incentive scheme</b>		
2.3	National framework	<p>Q. The AER would like views on whether it is feasible and appropriate to establish a common approach within a national framework</p> <p>Q. The AER would also like views on the issues it may need to consider in establishing this framework. In particular:</p> <ul style="list-style-type: none"> <li>▪ What should be the key elements?</li> <li>▪ How might a national scheme deal with differences between regions/jurisdictions?</li> <li>▪ What are the possible obstacles to achieving an effective national framework?</li> </ul>
<b>Types of service incentive schemes</b>		
3.1	Public reporting schemes	<p>Q. The AER would like views on whether it should require DNSPs to report on key aspects of their service performance for public reporting purposes.</p> <p>Q. If so, should DNSPs be required to report just on those aspects of service performance measured for an incentive scheme (e.g. GSL scheme or s-factor scheme) or on a common set of agreed measures?</p> <p>Q. The AER would also like views on how future reporting arrangements which may be multi-faceted (i.e. reporting to the AER in relation to an incentive scheme and potentially for public reporting purposes) could be simplified or rationalised to reduce compliance costs.</p>
3.2	GSL type schemes	<p>Q. The AER would like views on whether it should develop a national GSL scheme.</p> <p>Q. The AER would also like views on issues associated with the implementation and operation of a national GSL scheme.</p>

Section reference	Topic	Question raised
3.3	Financial incentive (s-factor) schemes	<p>Q. The AER would like views on the overall design of a national s-factor scheme. In particular:</p> <ul style="list-style-type: none"> <li>▪ the form that a national s-factor scheme might take</li> <li>▪ whether the scheme should be symmetrical</li> <li>▪ the number of measures that should be included, and</li> <li>▪ any other relevant threshold matters not dealt with elsewhere in this paper.</li> </ul> <p>Q. To what extent should existing s-factor schemes form the basis of a national scheme?</p>
3.4	Interaction between GSL schemes and s-factor schemes	<p>Q. The AER invites views on the establishment of both GSL and s-factor schemes in a national framework. In particular:</p> <ul style="list-style-type: none"> <li>▪ should both types of schemes be implemented</li> <li>▪ is the value to customers of having both types of schemes sufficient compared to the additional costs associated with having to implement and administer multiple schemes, and</li> <li>▪ how should information requirements be set to minimise compliance and collection costs?</li> </ul>
<b>Types of service performance measures</b>		
4.1	Reliability indicators	<p>Q. The AER would like views on which measures of reliability to include in a national s-factor scheme.</p> <p>Q. The AER would also like views on the classification of feeders by type and whether the AER should distinguish between planned and unplanned interruptions.</p>
4.2	Quality indicators	<p>Q. The AER would like views on the appropriateness of incorporating quality indicators in a future s-factor scheme, including the likely costs and benefits of incorporating quality indicators, the possible types of measures that could be used, and the availability of historical data.</p> <p>Q. Should supply quality be addressed in a different way such as through a GSL scheme or some other scheme?</p>
4.3	Customer service indicators	<p>Q. The AER would like views on customer service indicators to be included in an s-factor scheme, including the likely costs and benefits, and feasibility, of incorporating a range of indicators.</p> <p>Q. Would customer service indicators be more appropriately addressed in a GSL or other scheme?</p>

Section reference	Topic	Question raised
<b>Approaches to setting rewards and penalties in an s-factor scheme</b>		
5	Approaches to setting rewards and penalties in an s-factor scheme	<p>Q. The AER would like views on the above approaches for setting incentive rates and other possible approaches.</p> <p>Q. The AER would like views on the feasibility and associated costs and benefits of adopting each approach.</p> <p>Q. The AER would also like views on how it should determine relative weightings for measures.</p>
<b>Approaches to setting performance targets</b>		
6	Approaches to setting performance targets	Q. The AER would like views on the possible approaches outlined above to setting targets in an s-factor scheme.
<b>Allowing for risks</b>		
7	Allowing for risks	Q. The AER would like views on mechanisms to deal with additional risk introduced by an s-factor type scheme and whether it is appropriate for such risks to be wholly borne by DNSPs and/or customers.
<b>Allowing for exclusions</b>		
8.2	Quantitative measures	<p>Q. What approach should the AER take in applying exclusions?</p> <p>Q. Should exclusions cover reliability indicators and customer service indicators?</p> <p>Q. Should exclusions be determined by reference to qualitative or quantitative measures?</p> <p>Q. How appropriate is a standard such as IEEE 1366-2003?</p>
8.3	Options to limit the contribution of an excludable event	Q. Where an exclusion threshold is exceeded what action should the AER take to limit the contribution of events?
<b>Implementation issues for the transition to a national scheme</b>		
9.1	Issues for jurisdictions currently without an s-factor scheme	Q. Are there any other issues that the AER needs to consider?
9.1.1	Issues relating to the availability of data	Q. The AER invites comments from interested parties on the current and future availability of data on reliability and quality of supply measures for DNSP's currently without an s-factor scheme
9.1.2	Issues relating to the accuracy of data	<p>Q. The AER invites comments from interested parties on the current and future accuracy of data for reliability and quality of supply measures.</p> <p>Q. How could the AER take changes in performance data, due to changes in recording systems, into account in setting targets and incentive rates?</p>

<b>Section reference</b>	<b>Topic</b>	<b>Question raised</b>
9.1.3	Issues relating to the interaction between a national s-factor scheme and mandatory jurisdictional service standards	<p>Q. The AER invites submissions on issues relating to the interaction between mandatory jurisdictional service standards and a national STPIS for DNSPs currently without an s-factor scheme.</p> <p>For example, what benefits and limitations could the existing mandatory jurisdictional service standards place on the implementation of a national s-factor scheme?</p>
9.2	Transitional issues for jurisdictions with an s-factor scheme	Q. Are there any other issues that the AER needs to consider?
9.2.1	The availability and accuracy of data	Q. The AER invites submissions from interested parties on current and future data availability and accuracy in relation to DNSPs currently with an s-factor scheme. In particular, the AER would like views on the availability and accuracy of service reliability and quality data, including the level of the network at which this data is recorded.
9.2.2	Changing the structure of schemes (definitions/exclusions)	Q. The AER invites comments from interested parties on whether changes in reporting and the incentive mechanisms themselves should be taken into account in developing targets for DNSPs currently with an s-factor scheme
9.4	Transitional issues in relation to guaranteed service levels	<p>Q. If the AER were to develop a national GSL scheme, what issues arise regarding existing GSL schemes (that are mandated under jurisdictional electricity legislation) operating concurrently with a national scheme.</p> <p>Q. In relation to existing GSL schemes that are not mandated, what issues arise in relation to transitioning these schemes to a national scheme, should this be considered appropriate?</p>

## **Appendix 1: Service reliability and customer service measures used in jurisdictional s-factor schemes**

The following outlines the service reliability and customer service measures used in jurisdictional s-factor schemes and is for general information only. Interested parties may want to refer to the price determinations referred to below for more detailed information.

### **Victoria**

In the 2001-05 price determination the Office of the Regulator General (ORG) (now the ESCV) decided to adopt only reliability of supply indicators, as reliability was considered a primary concern for customers. The indicators used were:

- unplanned SAIDI
- planned SAIDI, and
- unplanned CAIDI.

Targets were set for the distribution feeders according to CBD, urban or rural location to minimise the potential to encourage improvement in one category to the detriment of another.

In the 2006-10 price determination the ESCV used the following measures (which now includes a customer service measure):

- unplanned SAIDI
- unplanned SAIFI
- MAIFI, and
- call centre performance (proportion of calls responded to within 30 seconds).

Targets for the reliability measures were again set by feeder category.

### **South Australia**

In the 2000-05 price determination, ESCOSA used the following performance measures:

- SAIDI
- SAIFI
- CAIDI
- time to restore supply to not less than 80 percent of affected customers, and
- operating cost per customer.

The reliability measures were divided according to geographical location.

In the 2005-10 price determination, ESCOSA replaced the above performance measures with the following:

- customer minutes off supply above a specified threshold, and
- proportion of calls responded to within 30 seconds.

### **Tasmania**

For the 2003-07 price determination, OTTER established a scheme in Tasmania based on SAIDI and SAIFI. In the 2008-12 pricing determination, OTTER removed the incentives and penalties relating to SAIDI and SAIFI performance in favour of a modified GSL scheme.