



Explanatory statement and Discussion paper

Proposed

**Electricity distribution network service
providers service target performance incentive
scheme**

April 2008

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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 14 May 2008. Submissions can be sent electronically to 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 except and unless prior arrangements are made with the AER to treat the submission, or portions of it, as confidential.

Any enquiries about this 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

ACT	Australian Capital Territory
AER	Australian Energy Regulator
CAIDI	Customer average interruption duration index
COAG	Council of Australian Governments
CRA	Charles River Associates
DNSP	Distribution network service provider
EBSS	Efficiency benefit sharing scheme
ENA	Electricity Networks Association
ESCOSA	Essential Services Commission of South Australia
ESCV	Essential Services Commission (Victoria)
GSL	Guaranteed service level
MAIFI	Momentary average interruption frequency index
MEU	Major Energy Users Inc
NEL	National Electricity Law
NER	National Electricity Rules
NSW	New South Wales
s-factor	Service standards factor
SAIDI	System average interruption duration index

SAIFI	System average interruption frequency index
STPIS	Service target performance incentive scheme
VCR	Value of consumer reliability

1 Introduction

The AER is responsible for the economic regulation of distribution network service providers (DNSPs) in the National Electricity Market, in accordance with the National Electricity Rules (NER).

Under Chapter 6 of the NER, the AER is required to develop and publish a service target performance incentive scheme (STPIS) for DNSPs. On 30 November 2007, the AER released an issues paper on the development of a STPIS. At the same time the AER also released a separate issues paper on the following guidelines, schemes and models that are required to be published under Chapter 6 of the NER:

- post-tax revenue model
- roll forward model
- cost allocation guidelines
- efficiency benefit sharing scheme (EBSS).

These issues papers formed part of a national consultation process that was separate, but had regard to consultation specific to transitional guidelines, models and schemes for the 2009 revenue resets for DNSPs in the ACT and NSW. It is noted that the AER decided not to introduce an STPIS with financial impact for the ACT and NSW DNSPs for the 2009-14 regulatory control period. Instead, the AER will undertake data collection and analysis of service performance in the Australian Capital Territory (ACT) and New South Wales (NSW) over the 2009-14 period, and the approach will be based on the national STPIS. The AER will commence data collection from DNSPs in NSW and ACT as soon as is practical.

The AER received 14 submissions on its issues paper commenting on the development of a STPIS. An outline of the key issues raised in submissions is provided in Appendix B to this explanatory statement/discussion paper. The submissions are available on the AER's website, www.aer.gov.au. This explanatory statement/discussion paper sets out the AER's consideration of issues raised in the submissions.

This explanatory statement/discussion paper, and the proposed STPIS have been prepared to satisfy the AER's obligations under clause 6.16(b) of the NER. This paper requests written submissions on a number of specific issues. However, interested parties are invited to make written submissions on any of the other issues discussed in this paper and in relation to the proposed STPIS.

The AER is required by clause 6.6.2(b)(1) of the NER to consult on the proposed STPIS with authorities responsible for the administration of relevant jurisdictional electricity legislation. The AER will consult with these authorities and invite them to make written submissions.

2 Background

In developing the proposed STPIS, the AER has considered the objectives for reform of economic regulation set out by the Council of Australian Governments (COAG) and endorsed by the Ministerial Council on Energy (MCE) in December 2003¹, the NEL objective² as well as the requirements of chapter 6 of the NER which are outlined in section 3 of this paper.

This scheme is part of the suite of regulatory requirements which are designed to streamline and improve the quality of economic regulation of energy networks, reduce regulatory costs and enhance regulatory certainty, consistent with COAG's objectives. More particularly, the STPIS is intended to balance the incentives on regulated businesses to ensure outcomes are consistent with the NEL objective in terms of efficient price and non-price outcomes for the long-term benefit of users. While the regulatory regime as a whole encourages a business to improve its operating and capital efficiency, the STPIS is intended to ensure that this increase in efficiency is not at the expense of a deterioration in service performance for customers.

The AER has also had regard to the significant experience of service performance incentive schemes in Australia. Service incentive schemes have operated previously in South Australia, Tasmania and Victoria. A paper trial of a scheme has also operated in NSW. The schemes in South Australia and Victoria have applied to two regulatory control periods and are regarded as mature schemes.

The AER acknowledges that significant research and thought has already been applied to the design of service performance incentive schemes by various jurisdictions and has drawn on this experience to develop the proposed national scheme.

In developing the proposed scheme and in considering its future application, the AER has also had regard to a number of underlying principles which include:

- The scheme should be applied on a consistent basis nationally where this is practical.
- The scheme should provide clarity and certainty to a DNSP regarding how the scheme would be applied.
- The opportunities and risks to DNSPs that arise from operating under the scheme should be transparent, and the onus placed on DNSPs to manage these opportunities and risks.
- The scheme should reflect customer preferences regarding service performance and willingness to pay for service improvements.

In developing the scheme the AER has also been mindful to ensure that the operation of the scheme would not put at risk a DNSP's ability to comply with relevant service

¹ MCE report to COAG on Reform of Energy Markets (11 December 2003)

² This requires that regulation promotes efficient investment and efficient use of networks and services for the long-term interests of consumers in respect to price, quality, reliability and security of supply of these networks and services.

standards and service targets (including guaranteed service levels) specified in jurisdictional electricity legislation, as required by clause 6.6.2 of the NER.

By basing the proposed STPIS on existing jurisdictional schemes, the proposed scheme has been developed with regard to past and current industry and community expectations. The proposed scheme has also been designed to provide a degree of flexibility that may be exercised in application to take account of transitional issues and the circumstances of DNSPs operating in different regulatory environments.

However, the AER notes that the scheme will need to evolve over time as expectations and circumstances change and to reflect changes in the economy, technology, land use, electricity supply arrangements, responses to climate change and other issues affecting customer expectations and the operating environments of DNSPs. For this reason the proposed scheme should be seen as a first generation national scheme.

3 Rule requirements

The STPIS has been developed by the AER to comply with the relevant requirements prescribed under clause 6.6.2 of the NER:

6.6.2 Service target performance incentive scheme

- (a) The AER must, in accordance with the distribution consultation procedures, develop and publish an incentive scheme or incentive schemes (service target performance incentive scheme) to provide incentives (which may include targets) for Distribution Network Service Providers to maintain and improve performance.
- (b) In developing and implementing a service target performance incentive scheme, the AER:
- (1) must consult with the authorities responsible for the administration of relevant jurisdictional electricity legislation; and
 - (2) must ensure that service standards and service targets (including guaranteed service levels) set by the scheme do not put at risk the Distribution Network Service Provider's ability to comply with relevant service standards and service targets (including guaranteed service levels) as specified in jurisdictional electricity legislation; and

Note:

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.

- (3) must take into account:
 - i. 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 Distribution Network Service Providers; and
 - ii. any regulatory obligation or requirement to which the Distribution Network Service Provider is subject; and
 - iii. the past performance of the distribution network; and
 - iv. any other incentives available to the Distribution Network Service Provider under the Rules or a relevant distribution determination; and
 - v. 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
 - vi. the willingness of the customer or end user to pay for improved performance in the delivery of services; and
 - vii. the possible effects of the scheme on incentives for the implementation of non-network alternatives.

(c) The AER may, from time to time and in accordance with the distribution consultation procedures, amend or replace any scheme that is developed and published under this clause.

Note:

A Distribution Network Service Provider is not precluded from entering into a contract with a third party (such as a network support service provider) under which the benefits of a service target performance incentive scheme are passed on to the third party, or the third party is required to indemnify the provider for penalties to which the provider becomes liable under the scheme.

4 Reasons and basis for the scheme

The regulatory framework under the NER applying to the revenue that can be recovered by DNSPs through customer prices provides an incentive for DNSPs to reduce their costs of providing services. A DNSP may seek to reduce its costs in two ways:

- realising productive efficiencies, or
- deferring expenditure on forecast programs.

Cost reductions from genuine efficiency gains are generally accepted as beneficial for the DNSP and customers where service performance is maintained or improved. However, savings realised from inefficient levels or deferrals of expenditure are not desirable as they can result in reduced service performance to customers.

To ensure that reductions in expenditure are due to efficiency gains and do not give rise to a deteriorating level of service, regulators in Australian jurisdictions have recognised the importance of clearly specifying service standards and public reporting against these standards, so that DNSPs are accountable for the level of service they provide. Some jurisdictions have also provided financial incentives to encourage DNSPs to meet target levels of service.

The rationale for a STPIS is to balance the incentive to reduce expenditure with the need to maintain and improve service performance for customers. This can be achieved by providing the business with various financial and non-financial incentives to maintain and improve service performance.

The AER's proposed STPIS provides, through its s-factor component, a financial incentive for DNSPs to maintain and improve service performance on average by assigning rewards to a DNSP where performance is better than the past average performance level and penalties where performance is below this level. The rate at which rewards and penalties are assigned is based on a value of consumer reliability, which has been derived from previous economic studies that have estimated the value of service reliability as values per kWh of lost load from supply interruptions (i.e. value of lost load or VoLL). These studies are discussed in section 6 of this paper.

The basis for this approach is based on the economic notion that the schedule of rewards and penalties under a STPIS should mimic customers' marginal willingness to pay for improved service performance. This allows a DNSP to change its service performance up to the point where its marginal cost of improving performance equals its reward for doing so and the optimal level of service performance is attained. While a DNSP can estimate the costs associated with providing different levels of service, measuring customer willingness to pay for different levels of service is much more difficult. One approach is to consider a customer's economic loss associated with the loss of the service, for instance, a supply interruption, and the VoLL is one such indicator.

Where a DNSP's actual cost of undertaking works to improve service performance is less than the reward provided through the VoLL-based incentive rate, the DNSP has a strong incentive to undertake the required works and achieve the desired performance level. Through this mechanism, the AER's proposed STPIS aims to improve service

performance through greater operational efficiency and in this sense the scheme can act as a cost-recovery mechanism for larger service performance improvements, where these improvements are not funded through the revenue allowed in a distribution determination.

A key element of the incentive properties of a STPIS is the overall level of revenue that is at risk from the potential rewards and penalties provided for under the scheme. Placing a financial limit on the revenue at risk provides certainty to a DNSP of the maximum penalty that it might receive and, correspondingly, also provides a maximum reward that customers might pay for. The maximum revenue at risk under the AER's proposed STPIS has been set at 3% of allowed revenue – that is the maximum annual reward or penalty that can be incurred under the scheme (excluding the GSL element). The reasons for setting the revenue at risk at this level are outlined in section 6 of this paper. While the AER considers that 3% of revenue would generally provide sufficient incentives for a DNSP to seek rewards and limit penalties under the scheme, it is noted that the proposed STPIS allows for a DNSP to propose that the level of revenue at risk be increased or decreased where this would satisfy the objectives of the scheme.

5 Outline of scheme operation

The AER's proposed STPIS is in the form of a framework within which appropriate performance parameters are selected and applied through the framework and approach and distribution determination processes applicable to a DNSP under the NER.

In addition to the specific rules for the scheme set out in clause 6.6.2 of the NER (see section 2 above), the scheme has been designed to be consistent with the other requirements of the NER, specifically, the distribution consultation procedures and the building block proposal requirements as set out in clauses 6.16 and S6.1.3 respectively.

The proposed scheme includes four aspects of service performance:

- reliability of supply
- quality of supply
- customer service
- guaranteed service levels (GSLs).

One or more of these components of the scheme may apply to a DNSP. Each component of the scheme has defined parameters for measuring service performance.

Under the reliability, quality and customer service components (s-factor component) of the scheme, a DNSP's revenue is increased (or decreased) based on changes in service performance from year to year relative to the average performance in previous years, as assessed by the AER in accordance with the scheme. The scheme operates so that a DNSP that meets its historical average performance levels across a forthcoming regulatory control period receives neither an overall reward or penalty under the scheme.

Under the GSL component, payments are made directly to customers where the service performance received by those customers is worse than a specific threshold. The expected volume of payments is estimated using current performance and is included in the annual revenue requirement set in the AER's distribution determination.

It is noted that the GSL component of the AER's proposed STPIS would not apply to a DNSP where jurisdictional electricity legislation imposes an obligation on a DNSP to operate a GSL scheme. That is, where a jurisdictional GSL scheme is already in place, the GSL component of the AER's scheme will not apply to a DNSP.

Values for the parameters to apply to a DNSP include: performance targets, typically based on historical performance; and incentive rates, typically based on how customers value the service. In addition, caps on the revenue at risk for a component of the scheme and exclusions for defined events may be specified.

A cap on the overall revenue change in any one year (the revenue at risk) has also been proposed to limit the operation of the scheme.

5.1 Application of the scheme

As noted above, the proposed STPIS is in the form of a framework which would be applied through the AER's framework and approach and distribution determination processes applicable to a DNSP.

Chapter 6 of the NER provides for a DNSP to propose and for the AER to decide on how a STPIS will apply to a particular DNSP. The proposed STPIS has been designed to allow for flexibility (where this would satisfy the scheme's objectives) which can then be applied through the framework and approach and distribution determination processes under chapter 6. For example, the scheme allows for different segmenting of the network for reliability parameters, a different level of overall revenue at risk, and different incentive rates should these satisfy the objectives.

The AER's framework and approach paper would set out the AER's likely approach, in a forthcoming distribution determination, to the application of the STPIS to a particular DNSP. In turn, a DNSP's regulatory proposal for a distribution determination must contain at least:

- as part of the building block proposal, a description, including relevant explanatory material, of how the DNSP proposes the STPIS should apply for the relevant regulatory control period (in accordance with clause S6.1.3(4) of the NER), and
- such information as is required under any relevant regulatory information instrument issued by the AER.

Following this, the AER will make a decision on how the STPIS is to apply to a DNSP in each distribution determination.

Through the design of the proposed STPIS, and through the operation of the framework and approach and distribution determination processes in the NER, the scheme and its supporting regulatory arrangements provide for some flexibility in the application of the scheme. This is to accommodate, for example, DNSPs that have previously operated under a jurisdictional STPIS and DNSPs that have not; and differences between jurisdictions (e.g. specific service performance issues that may arise in a jurisdiction or DNSP service area).

Notwithstanding this, where a DNSP proposes to apply something different to what is contained in the scheme it will need to satisfy the AER that such modifications satisfy the objectives of the scheme.

Q. The AER would like views on whether there is sufficient clarity in the proposed scheme, so that DNSPs can plan the actions they need to take to be able to comply with the scheme when it is implemented.

5.2 Key features of the scheme

5.2.1 S-factor component

As mentioned above, the reliability of supply, quality of supply, and customer service components of the scheme make up the s-factor component of the scheme. This section sets out some of the key design features of the s-factor component.

- The s-factor component is symmetrical i.e. penalties are incurred at the same rate as rewards.
- The proposed scheme is designed to improve service performance through operational efficiency and to be a cost-recovery mechanism for such service performance improvements where these improvements are not funded through the revenue allowed in a distribution determination.
- The s-factor is determined by calculating the gap between targeted performance and actual performance in a year less the gap in the previous year. By acting on the cumulative difference between actual and targeted performance, the scheme only rewards (or penalises) long term systemic changes in performance rather than year on year variations.
- The reward or penalty incurred is kept for five years after which time it is removed. This approach is consistent with the way incentive rates are set (see below) and aligns the scheme with incentives under the AER's proposed EBSS.
- There is a 6-month or 12-month delay from the year in which performance was measured to when the s-factor is applied depending on whether the regulatory control period begins on 1 January or 1 July.
- In general, performance targets are to be based on average performance over the past five years.
- Incentive rates are based on customer willingness to pay for service improvements.
- Outlier performance (e.g. due to extreme weather / events) will be excluded by using the 2.5 beta method described in the US Institute of Electrical and Electronics Engineers (IEEE) Standard 1366-2003. In addition, events out of the control of the DNSP will be excluded.
- Application of the s-factor or a portion of the s-factor can be delayed in any one year to smooth the impact on prices (s-bank).
- How the s-factor will be incorporated into the form of control will be outlined for each business during consultation on its framework and approach for a distribution determination.

5.2.2 GSL component

This section sets out some of the key features of the GSL component of the scheme.

- The GSL component has a role in improving service to customers receiving poor performance and provides recognition to customers that have received poor performance.

- As noted earlier, the expected volume of GSL payments is estimated using current performance and is included in the annual revenue requirement set in the AER's distribution determination.
- Parameters, thresholds and payment amounts have been based on existing jurisdictional schemes.
- Payments should be made to customers automatically as opposed to on application from the customer.
- The GSL component uses different thresholds of performance for those customers on different parts of the network and increasing payments where increasing thresholds are exceeded for the total duration of interruptions parameter.
- The GSL component uses the same exclusion criteria as for the s-factor component.

6 Issues raised in submissions and the AER response

The AER received 14 submissions on its issues paper commenting on the development of a STPIS. An outline of the key issues raised by stakeholders is provided in Appendix B to this explanatory statement/discussion paper. Stakeholder comments are also summarised in the discussion below.

6.1 Objectives in establishing a service target performance incentive scheme

The issues paper asked whether it would be feasible and appropriate to establish an STPIS that supports a common approach within a national framework and the issues the AER may need to consider in establishing the framework.

6.1.1 Stakeholder comments

There was general support for development of a national scheme although some stakeholders had concerns about the timeframe for national consistency. It was said that national consistency should be a medium term objective and that the AER's scheme should provide a pathway to consistency over this period. The MEU identified the current Victorian scheme as best-practice but noted that this could be modified to reflect a lesser degree of information on performance available from DNSPs in other jurisdictions.

Many stakeholders stated that a clear statement of the objectives for the scheme was required for a national scheme to be effective, and that the scheme could then be tailored to this objective. Stakeholders suggested a set of guiding principles, specifically that the scheme should be: cost effective, simple to understand and administer, customer focused, and flexible to cater for ongoing differences between businesses in different jurisdictions.

6.1.2 AER response

The AER proposes to implement a common national scheme using current schemes as a basis. The AER considers that the development of a common national scheme is consistent with the COAG objectives for reform of economic regulation across energy markets, as well as the NEL objective, as noted earlier in this paper.

However, the AER notes that national consistency is only desirable where this is practical and that consistency in the application of the scheme cannot be achieved immediately. In particular, those businesses that have not previously had schemes apply to them will take time to adjust to operating under a scheme. The proposed STPIS therefore recognises that there are differences between jurisdictions and between DNSPs that need to be catered for.

The proposed scheme provides a framework within which performance parameters can be selected and applied. In clauses 6.3.2, 6.8.2(c)(2), 6.8.2(d) and 6.12.1, the NER provides that:

- The framework and approach paper should set out the AER's likely approach (together with its reasons for the likely approach), in the forthcoming distribution determination, to the application to the DNSP of a STPIS
- A DNSP's regulatory submission must contain at least:
 - i. as part of the building block proposal, a description, including relevant explanatory material, of how the DNSP proposes the STPIS should apply for the relevant regulatory control period, in accordance with clause S6.1.3(4) of the NER, and
 - ii. such information as required under any relevant regulatory information instrument issued by the AER.
- In each distribution determination the AER will decide on how any applicable STPIS is to apply to the DNSP.

Chapter 6 of the NER therefore provides for a DNSP to propose, and for the AER to decide on, how a STPIS will apply to a particular DNSP.

The scheme has been designed to allow for flexibility which can then be applied through the framework and approach, and distribution determination, processes under Chapter 6. For example, the AER has designed the scheme to cater for those DNSPs that have not previously applied schemes by providing for:

- reliability parameters to be segmented by a means other than network type
- a reduction in the maximum revenue at risk under the scheme from that normally applied
- a reduction in the incentive rate that applies to each parameter or parameter segment.

These and other factors in the scheme provide flexibility for differences between jurisdictions and DNSPs that may arise in a transitional context and because of inherent differences (e.g. the specific service performance issues that may arise in a particular jurisdiction or DNSP service area). For example, the scheme allows for the network to be broken into geographic regions or based on communities should this satisfy the objectives of the scheme.

Also, and as noted previously, because industry and community expectations are continuously changing, further changes and refinements to the scheme may need to be made over time.

The AER agrees with stakeholders that the scheme should include a purpose and objectives and notes that these have been included in the scheme. The proposed scheme provides the framework for the operation of the scheme and how it will be applied generally. The guiding principles which have been taken into account in developing the scheme are set out in section 2 of this discussion paper. As noted previously in this paper, the scheme also provides for flexibility so that the objectives of the scheme can be considered for individual DNSPs where this would be more appropriate than applying the general provisions of the scheme.

6.2 Type of scheme

The issues paper set out three broad mechanisms for maintaining and improving service performance. These were:

- public reporting
- GSL
- service standards factor (s-factor).

6.2.1 Stakeholder comments

There was general support for a national reporting regime based on a common set of agreed measures, where this did not duplicate information required by jurisdictional regulators. There was also general support for the adoption of both an s-factor and GSL elements. Aurora noted that it preferred the GSL mechanism to the s-factor mechanism, stating that s-factor schemes introduced unnecessary complexity to the service standards framework. The ENA noted that the scheme should only operate where the benefits to consumers outweighed the costs of compliance.

6.2.2 AER response

The AER will proceed with the development of a national public reporting regime on a common set of agreed measures and will examine the measures to be included when it consults on future annual reporting arrangements for DNSPs. Consultation on these arrangements will commence later this year. This is likely to cover a range of measures for average service performance regarding reliability, customer service and quality (where appropriate). The regime may also require reporting on worst performing parts of the network (eg worst-performing feeders). The annual reporting regime would have regard to any service standards reporting requirements imposed by the authorities responsible for the administration of jurisdictional electricity legislation.

The proposed STPIS includes both s-factor and GSL components. The AER considers these mechanisms to be complimentary as the former aims to maintain and improve service to customers on average, whereas the latter has a role in improving service to customers receiving poor service and provides a form of recognition for poor service performance in relation to such customer groups. Where a GSL scheme already exists under jurisdictional electricity legislation, the GSL component of the STPIS will not be implemented so as to avoid duplication and overlap in the operation of national and jurisdictional schemes.

Where a net benefit in applying a component of the scheme is not evident, the scheme allows for a component of the scheme to not apply. This will be articulated through the framework and approach and distribution determination processes.

6.3 Overall design of an s-factor scheme

The issues paper asked for views on the overall design of an s-factor scheme such as: whether the scheme should be target or performance band based; whether the scheme should be symmetrical and the number of measures that should be included.

6.3.1 Stakeholder comments

Several stakeholders expressed support for a symmetrical s-factor scheme, with one stakeholder noting that symmetrical schemes serve to ensure that penalties for poor performance do not outweigh rewards for service improvement. Conversely, some stakeholders considered that factors leading to reliability issues (for example, one off uncontrollable events) are in fact asymmetrical in nature, and therefore a symmetrical scheme would be inappropriate. Citipower Powercor noted that performance variability caused by such external factors should be addressed in distribution resets. There was also some support for a target based scheme.

Energex stated that the number of measures should be relatively small and relevant to the DNSP. Ergon Energy agreed and stated that the number of measures included should be targeted to network performance. ETSA stated that keeping the number of measures low would minimise the risk of diluting incentives to DNSPs. The MEU suggested that the number of measures should increase over time as more data is collated by DNSPs.

6.3.2 AER response

The AER considers that a symmetrical scheme approximates the operation of a competitive market more closely than an asymmetrical scheme in that consumers are generally prepared to pay more for a higher quality product, and will consider lower quality products if the price is sufficiently low enough. Accordingly, the AER considers that a symmetrical STPIS is more appropriate. This approach is consistent with the AER's scheme in transmission and the schemes currently operating in South Australia and Victoria.

The AER has decided to implement a target-based s-factor mechanism as opposed to a performance band mechanism. The AER considers that the operation of this type of scheme, and its incentive properties, are easier for DNSPs to communicate to their management and staff, and this transparency improves the ability of a DNSP to respond to the incentives under the scheme. The AER notes that a performance band mechanism has only been used in South Australia and all other jurisdictions have adopted or proposed target-based schemes.

The AER considers that if a large number of parameters are included in the scheme, the proposed 3% cap may be reached for a relatively small change in service performance. Hence, the AER supports stakeholders' views that the total number of parameters should be limited. The AER is of the view, however, that such considerations and the issue of providing a material incentive for each parameter applied under a scheme are best dealt with in the framework and approach and distribution determination processes.

The proposed STPIS is designed to reward sustained performance improvements by effectively setting the target for a year at the actual result for the previous year. In this way the scheme only rewards (or penalises) long term systemic changes in performance rather than year on year variations. The AER considers that this approach best supports the objectives of the scheme.

6.4 Types of measures in an s-factor scheme

In its issues paper, the AER identified three different categories of service standards:

- reliability
- quality, and
- customer service.

For each category it asked stakeholders for views on the measures that should be included in an s-factor scheme.

6.4.1 Reliability measures

6.4.1.1 Stakeholder comments

There was general stakeholder support for inclusion of the reliability measures SAIDI, SAIFI and MAIFI, while some stakeholders also supported the inclusion of CAIDI. Several stakeholders considered that planned network outages resulting in interruptions to customer's electricity supply should be excluded from the scheme. The general consensus amongst stakeholders was that planned outages are a result of network maintenance, and penalising DNSPs by including planned interruptions under a reliability indicator could undermine network maintenance programs. Aurora noted that customers are generally accepting of planned interruptions where adequate notice is given. The ENA submitted that to penalise DNSPs for planned interruptions would conflict with the NEL objective regarding safety and security of electricity supply. Ergon Energy stated that planned interruptions may be indicative of increasing capital works needed to connect more customers.

6.4.1.2 AER response

The AER has included the following reliability parameters in the proposed STPIS:

- SAIDI
- SAIFI
- MAIFI

Under the proposed scheme, these parameters will be broken down into segments by network type or an alternative method that meets the objectives of the scheme. The AER considers that segmentation is important because average measures can mask differences in supply reliability to customers connected to different parts of the network.

The AER has not included CAIDI because it is a product of SAIFI and SAIDI³. Further, as CAIDI is an average measure it is difficult for a DNSP to assess how it is performing against this measure until well into a reporting year, given that extremely poor performance will have a greater impact on average performance at the start of the year compared to the end of the year. The ESCV discussed the use of CAIDI in incentive schemes in its 2004 Consultation Paper, (Electricity Distribution Price Review 2006 Service Incentive Arrangements). It noted that the use of CAIDI in the

³ i.e. SAIDI = SAIFI x CAIDI

incentive scheme creates distortions in incentives, given its interactions with SAIFI, specifically:

If the current CAIDI is less (better) than forecast, all other things being equal, then there is an increase in the incentive for the distributor to further improve reliability; conversely, if the current CAIDI is greater (worse) than forecast (all other things being equal), then there is a decrease in the incentive for the distributor to further improve reliability. This may be contrary to good design of an incentive scheme, which would require incentives for improvements in performance to be greater where current performance is lower.

If the current SAIFI is less (better) than forecast, all other things being equal, then (due to interactions with the CAIDI measure) then there is an increase in the incentive for the distributor to prevent interruptions that are longer than the current average duration, but there is a reduction in the incentive for the distributor to prevent interruptions that are shorter than the current average duration.

If performance on both measures improves, then the incentive for further improvement strengthens. Again, this may be contrary to good design of an incentive scheme. There is no indication that consumer willingness to pay rises as performance improves (indeed, it is more likely to diminish), so this change in the reward is not desirable.

If these distortions in incentives are considered undesirable they could be avoided by basing the incentive regime on the SAIFI and SAIDI measures of reliability, rather than SAIFI and CAIDI. (pp.29)

The AER agrees with this assessment.

It should be noted that the measures in the AER's proposed STPIS do not distinguish between planned and unplanned interruptions. While the preference from several stakeholders for the exclusion of planned interruptions from the scheme is acknowledged, the AER proposes to capture both types of interruptions as it believes that DNSPs should have an incentive to manage both types, given that customers can be inconvenienced by both planned and unplanned interruptions. The AER also notes that planned interruptions only make up a small percentage of interruptions and therefore their inclusion would not have a big impact on the measure overall. Should a material change in the volume of planned interruptions be forecast, the STPIS allows performance targets to be adjusted.

Q. The AER would like views on the proposed inclusion of planned interruptions in the reliability measures.

6.4.2 Quality measures

6.4.2.1 Stakeholder comments

Generally, stakeholders raised questions about whether quality of supply can currently be measured in an accurate and meaningful way. Many stakeholders considered that current measures are flawed and produce imperfect data. ETSA Utilities was of the view that quality of supply indicators should not be used at all, or not until they can be applied consistently at a national level and a DNSP has a proven capability to track and record its quality of supply parameters.

6.4.2.2 AER response

The AER concurs with the view that there are currently no direct measures of supply quality suitable for an s-factor scheme and has decided not to specify any quality of supply parameters in the proposed STPIS. However, the AER notes that the need to measure quality of supply is increasing, as the dependence on electricity devices affected acutely by supply quality increases and customers' expectations for consistent quality of supply grows. The AER therefore intends to work with DNSPs and other stakeholders over time to improve the monitoring of quality of supply, so that this parameter can be included in an s-factor scheme when appropriate measures and time series data of DNSP quality of supply are available.

The AER notes that quality of supply can potentially be managed by either the DNSP or by customers themselves. Any incentives in this area should provide effective signals in relation to both network and customer premises solutions.

6.4.3 Customer service measures

6.4.3.1 Stakeholder comments

Stakeholders submitted that, in general, customer service standards are more appropriately addressed through public reporting arrangements or through the GSL component of a STPIS. There was support from ETSA Utilities for inclusion of call centre performance in an s-factor scheme. It was generally argued that quality of telephone call response was too subjective to measure and should not be included.

6.4.3.2 AER response

The AER has included a customer service component in the proposed STPIS as this aspect of performance has been demonstrated to be important to customers, as reported in distribution determinations undertaken by jurisdictional regulators. Also, customer service components have generally been applied in mature schemes operating in Australia and in Great Britain. However, the AER recognises that reliability should be the main focus of the s-factor aspect of the STPIS and has therefore placed a cap of 1% of revenue at risk on the customer service component of the scheme. Additionally, there is a 0.5% cap on any individual customer service parameter.

It is noted also that the GSL component of the proposed STPIS also incorporates a range of customer service parameters.

The AER has included telephone answering in the customer service component of the scheme as:

- there is evidence that customers value this parameter
- the data on which the parameter is based is readily available and accurate, and
- it is used in mature schemes operating in South Australia, Victoria and Great Britain.

In addition to the telephone answering parameter, there are a number of other parameters that a DNSP may seek to incorporate, or that the AER may determine, in the s-factor through the operation of the scheme. The AER considers that, generally, these aspects are best addressed through the GSL component of the scheme. However,

should a particular aspect of service be of concern to stakeholders or a DNSP, it may be included in the customer service component of the STPIS (i.e. and be measured as part of the s-factor), so as to provide an incentive to improve average performance and as a cost recovery mechanism for improved service performance.

6.5 Approach to setting performance targets in an s-factor scheme

The AER identified different approaches to setting performance targets in an s-factor scheme and asked for stakeholders' views on each of the approaches identified.

6.5.1 Stakeholder comments

The general consensus from stakeholders was that the method for setting targets should be done on a case by case basis, however, average historical performance should be used where reliable data is available.

6.5.2 AER response

The AER sets out in the proposed STPIS that performance targets must be based on average performance over the past five years modified to reflect the factors specified in the scheme. Where five years of data is not available an alternative methodology or benchmark will be considered. This is consistent with the approach in transmission.

In the proposed scheme, the AER has allowed performance targets to be modified to reflect completed or planned reliability improvements where these have been funded directly through a distribution determination and where the reliability improvements are expected to result in a material improvement in reliability. This is to prevent a DNSP from recovering revenue for reliability improvements from both a distribution determination and the operation of the STPIS. This will also allow the AER to take into account reliability improvements imposed on a DNSP, through jurisdictional electricity legislation, when determining performance targets under the STPIS. As noted previously, the proposed scheme can also act as a cost-recovery mechanism for service performance improvements where these improvements are not funded through the revenue allowed in a distribution determination.

The AER has also allowed performance targets to be modified by any other factors that are expected to materially affect network reliability performance including the effect of any non-network alternatives to network augmentation. This provision has been included in the proposed STPIS to ensure that the scheme does not lead to the preference of network augmentation over non-network alternatives. For example, the AER considers that a DNSP may have an incentive to undertake capital expenditure for its distribution network instead of enabling non-network alternatives, if non-network alternatives are less reliable and could effect the DNSP's service performance under the scheme.

Q. Is the mechanism proposed by the AER to balance the incentive to carry out network augmentation with non-network alternatives under the scheme sufficient? Are there any other mechanisms that the AER should put in place in this regard?

6.6 Approach to setting rewards and penalties in an s-factor scheme

In its issues paper the AER set out possible approaches to setting rewards and penalties in an s-factor scheme and asked for views on these approaches. The AER also asked for stakeholders' views on how it should determine relative weightings for different measures.

6.6.1 Stakeholder comments

Many stakeholders resisted indicating an absolute preference for setting incentive rates, with many expressing the view that an ideal method for setting incentive rates will become more obvious as more information about the approach proposed under the scheme becomes available. Several stakeholders expressed a preference for using the value of consumer reliability (VCR) as a basis for setting incentive rates for the reliability component of the scheme. On weightings, the MEU noted that the AER needed to ensure consistency with national objectives, and that weightings should reflect relative numbers and consumption patterns of different customer classes, as well as customers' willingness to pay.

6.6.2 AER response

For the reliability component of the proposed STPIS, the AER has based the incentive rate on a measure of the VCR. The AER notes that the most recent economic study on the VCR was undertaken by Charles River Associates (CRA) in 2002⁴. The study was prepared for VENCORP for use in determining the limits of electricity market operations and was an extension of earlier work by Khan and Conlon in 1997. The study expressed the estimated value of service reliability as values per kWh of lost load from supply interruptions. Values for the residential, agricultural, commercial and industrial sectors were derived as weighted averages for interruptions of different duration (weighted by the probability of interruptions of different duration). A value for all consumers was derived as a weighted sum of the values for the consumer sectors (weighted by electricity consumption).

Table 1 shows that both studies derived a similar average value across all consumer sectors, \$28.89 per kWh compared to \$29.63 per kWh. However, CRA concluded that the similarity in the total value across both studies was likely to be coincidental because the average values for each sector were markedly different.

⁴ Charles River Associates, 2002, *Assessment of the Value of Consumer Reliability (VCR)* - report prepared for VENCORP, Melbourne

Table 1: Estimated values of service reliability from studies of costs of service outages (\$/kWh of lost load)

Sector	Khan and Conlon (1997)			Charles River Associates (2002)		
	Weighted average value of lost load for outages of different duration (\$/kWh)	Sector Weight	Weighted average across consumers \$/kWh	Weighted average value of lost load for outages of different duration (\$/kWh)	Sector weight	Weighted average across consumers \$/kWh
Residential	0.74	0.338	0.25	11.88	0.332	3.94
Commercial	75.96	0.300	22.79	56.67	0.326	18.47
Agricultural	96.19	0.021	2.04	55.49	0.023	1.28
Industrial	11.19	0.341	3.81	18.54	0.320	5.93
Total			28.89			29.63

Source: Khan and Conlon, 1997 and Charles River Associates, 2002

In its 2005-10 distribution determination for Victorian DNSPs, the ESCV decided to adopt the state-wide VCR determined by CRA rounded to \$30,000 per MWh, except for CitiPower's CBD customers. Given that CitiPower justified its expenditure in the CBD on a VCR for commercial customers of \$56,625 per MWh, the ESCV was of the view that this VCR should be applied for CitiPower's CBD customers through its s-factor scheme, rounded to \$60,000 per MWh.

Given that the CRA study and ESCV analysis is the most recent documented and robust work on incentive rates, the AER has decided to base the incentive rate for the reliability component of the proposed STPIS on this work. This results in a value of consumer reliability in the proposed STPIS of \$29,600 per MWh for rural and urban customers and double this amount (\$59,200 per MWh) for CBD customers.

The AER notes that the overall value of the incentive would decrease over time if the values are not indexed for inflation. For this reason the AER proposes to set the incentive rate for reliability at the non-rounded values indexed by CPI from 2002 to the start of a regulatory control period.

The proposed STPIS provides that a different value of VCR may be applied, so that incentive rates can be based on the results of future studies without requiring the scheme to be modified.

Because the CRA study derives a single figure for the value customers place on reliability, but the scheme includes parameters that reflect different aspect of reliability (the number of interruptions and minutes off supply), the VCR has been proportioned across the reliability parameters SAIFI and SAIDI. The weightings for each parameter have been determined from a willingness to pay study conducted in South Australia (SA) by KPMG in 2003⁵. This study has also been used by the ESCV for setting weightings, where differing values for each DNSP were determined based

⁵ KPMG, Australia, 2003, *Consumer preferences for electricity service standards*.

on a breakdown of energy consumption by customer class for each network type. The AER has adopted the average of the values for each network type. An averaging approach has been used because the difference in the value established by the ESCV for each DNSP is small and the adoption of differing values for each DNSP would add unnecessary complexity to the scheme.

The incentive rate for MAIFI has been determined by the ESCV to be 8% of the incentive rate for SAIFI, based on the SA willingness to pay study undertaken by KPMG and referred to above.⁶ While it is likely that the value customers place on reducing momentary versus sustained interruptions will vary widely across Australia, the AER acknowledges that the introduction of automatic circuit reclosers⁷ on distribution networks as a means of reducing the impact of sustained interruptions on customers is a sound practice. Hence, the incentive to manage the number of momentary interruptions associated with the operation of automatic circuit reclosers should not unduly lessen the incentive to reduce sustained interruptions. For this reason, the AER is of the view that setting the incentive rate for MAIFI as a percentage of the incentive rate for SAIFI is a reasonable approach and has therefore adopted the value determined by the ESCV.

For telephone answering, the AER has set the incentive rate at either zero or 0.04. This is also based on the SA willingness to pay study undertaken by KPMG and referred to above. This study was used by the ESCV to set incentive rates for telephone answering in its 2005-10 distribution determination for Victorian DNSPs. The AER also adopted the average of the values for the Victorian DNSPs for simplicity, as discussed above. The AER considers that customers across Australia are likely to place similar values on DNSP call centre service performance.

Q. The AER would like views on the proposed approaches for setting incentive rates for the reliability and customer service components of the scheme.

6.7 Allowing for risks

The issues paper noted that the introduction of a service incentive mechanism can introduce additional risk to DNSP. It identified mechanisms that could minimise this risk, including:

- an overall financial limit on the scheme, and
- collars around the target values for each parameter.

⁶ The study asked consumers (by customer class) to place a value on a reduction in SAIFI by 1 interruption and a reduction in MAIFI by 1 interruption. The ESCV scaled the response by the number of customers in each customer class for each feeder type for the Victorian DNSPs, arriving at ratios of 8.23% to 9.13%. The average ratio indicates that consumers value a reduction in MAIFI at about 8% of the value of a reduction in SAIFI.

⁷ When a fault occurs on a distribution feeder beyond the Automatic Circuit Recloser, the recloser will automatically open for a short period of time, hence interrupting the flow of energy to the faulted network, and then reclose. If the fault was momentary in nature, the recloser will remain closed hence avoiding a sustained interruption.

6.7.1 Stakeholder comments

There was support from stakeholders for the STPIS to contain a combination of risk mitigation devices. Some stakeholders considered that risk mitigation devices should be considered with reference to a DNSP's historical data. There was also a suggestion that DNSPs should be able to propose risk mitigation devices that would apply to them under a scheme.

6.7.2 AER response

6.7.2.1 Overall limit

The AER proposes to set the revenue at risk under the scheme at 3% of allowed revenue, that is the maximum annual reward or penalty that can be incurred under the scheme (excluding the GSL element). However, the AER notes that this can be increased or decreased where this would satisfy the objectives of the scheme.

The AER has adopted 3% as it believes that this provides sufficient incentive for a DNSP to improve service performance without imposing undue risk. In forming its view on the revenue at risk the AER considered that:

- a consistent national approach would be fair
- an uncapped scheme may introduce an unreasonable level of risk for some DNSPs at this time
- to date, the biggest change in annual revenue under a jurisdictional s-factor scheme was 2.6%⁸.

As noted above, the AER has set the revenue at risk for the customer service component of the scheme at 1% and 0.5% for an individual parameter within the customer service component.

Q. The AER would like views on its proposal to set the overall cap on the s-factor at 3% of revenue.

Q. The AER would like views on the proposed revenue at risk for the customer service component and an individual parameter within the customer service component.

6.7.2.2 Collars

The AER does not propose to include collars around the target values for each parameter as it does not consider there to be a robust method of setting the values at which these caps and collars could be set. Further, the AER notes that the outliers will be limited through the 2.5 beta exclusion mechanism discussed below.

The AER notes that caps and collars are used in the transmission scheme. However, it should be noted that the proposed STPIS would operate differently to the transmission scheme. In transmission the cap and collar values are a necessary part of the scheme as they are used to determine the incentive rate. They are set to exclude approximately

⁸ The greatest change in revenue to date under a jurisdictional s-factor scheme has been a 2.6% penalty for SP AusNet in 2002 and again in 2004 although there have been offsetting rewards in other years. The AER notes that the scheme that applies to SP AusNet is not capped.

a 1 in 10 year event⁹, and weightings are used to divide the overall revenue at risk in a manner that reflects the relative value that customers place on each of the parameters in the scheme and the objectives of the scheme. The revenue at risk and the cap/collar values sets the incentive rate. Under the proposed STPIS, and in schemes currently operating in jurisdictions, the incentive rate is based more transparently on the value customers place on service performance as determined from studies and surveys of customers.

6.8 Exclusions

In its issues paper the AER asked what approach it should take in applying exclusions. It identified two broad approaches:

- quantitative measures, and
- qualitative measures.

Furthermore, the issues paper identified the US Institute of Electrical and Electronics Engineers (IEEE) standard 1366-2003 as a recognised quantitative approach.

6.8.1 Stakeholder comments

Many stakeholders supported the adoption of statistical measures for exclusions as contained in the IEEE standard 1366-2003. Aurora did not support the IEEE standard 1366-2003 as it excludes events on relative severity, not absolute severity. The MEU was of the opinion that statistical measures were biased against the customer as they exclude outrider issues from the scheme. Its view was that outrider issues within the DNSPs control should not be excluded.

6.8.2 AER response

In the proposed STPIS the AER proposes the use of the 2.5 beta method described in IEEE standard 1366-2003 to limit a DNSP's exposure under the scheme to extreme weather and other events. The AER considers that this mechanism is easy to understand, simple to administer and avoids the complexity of defining exclusion criteria for a range of events that might be excluded, together with the high administration burden likely to be associated with such an approach.

In addition, the AER proposes that exclusions be allowed for a shortfall in generation, for failure of the transmission network, and for failure of transmission connection assets except where these are under the control of the DNSP (i.e. where the interruptions are due to inadequate planning of transmission connections and the DNSP is responsible for transmission connection planning).

The role of the scheme is to provide incentives for DNSPs to maintain and improve service performance, as set out in clause 6.6.2 (a) of the NER. The proposed scheme is therefore designed to encourage sustainable improvements to service rather than focusing on one-off infrequent events. Consistent with this, the purpose of specifying exclusions is to limit the risk that single very large events may result in unreasonable penalties being applied, the financial cap being reached and the scheme being suspended. For these reasons, the AER does not agree with Aurora that the exclusions

⁹ The method of setting these values requires a high degree of judgement.

should be based on absolute severity. To be effective, the events to be excluded must relate to each DNSP's actual performance so as to remove events with an impact that is relevant for that DNSP.

It is proposed that details of excluded events will be reported to the AER annually and will be subject to periodic audit.

These exclusion criteria will apply to all parameters in the scheme except the customer service parameters of the GSL component. The GSL parameters subject to these exclusion criteria are set out in the scheme.

Q. The AER would like views on the proposed scope of exclusions.

6.9 Other s-factor issues

There are a number of other s-factor design issues that were raised in submissions or that have been taken into account in the development of the proposed STPIS by the AER.

6.9.1 The interaction of the scheme with the form of control

The AER proposes that the incorporation of the s-factor into the form of control for standard direct control services be outlined for each business during consultation on its framework and approach for a distribution determination. The AER notes that different forms of control may apply to different categories of standard direct control services and that this may affect the financial incentive under the scheme. However, the AER considers that these differences may not be significant as they relate to the design of each form of control. The general form in which the s-factor will be applied is set out in Appendix B of the proposed scheme.

Q. The AER would like views on how the s-factor should be incorporated into the form of control

6.9.2 Tariff smoothing

Although not specifically raised in the issues paper, a number of stakeholders supported the use of a tariff smoothing mechanism to reduce the impact of the s-factor on customer prices in any one year. The s-bank mechanism used in Victoria was particularly supported.

The AER has included the s-bank mechanism in the proposed STPIS. The s-bank mechanism works by allowing a DNSP to delay a reward or penalty for one year. The AER notes that this provides for less volatility in prices to customers and enables a DNSP to mitigate year on year risk. The AER has allowed for the s-bank to be multiplied by the pre-tax weighted average cost of capital to account for the time value of money.

Q. The AER would like views from stakeholders on the proposed s-bank mechanism.

6.9.3 The interaction of the scheme with other incentive mechanisms

As revenue increments (or decrements) under the scheme result in continuing increased revenue (or decreased revenue) in following years, a mechanism must be included to reverse the revenue increment (or decrement) after an appropriate period of time. This reversal is required to ensure that customers do not continue to pay for service improvements made in the past.

The proposed approach reverses the reward or penalty after 6 years, allowing a DNSP to retain a reward or incur a penalty for a full 5-year period. This approach is intended to align with the EBSS under which an efficiency gain can be retained by a DNSP for a period of 5 years. Aligning the retention periods minimises the potential for the two schemes to interact in such a way that could lessen the incentives provided.

Q. The AER would like views on the proposed mechanism to align the scheme with the EBSS.

6.9.4 Timing of the incentive

The AER considers that it takes a minimum of six months from the end of a reporting period for data to be collected and verified and the s-factor applied to prices. A six month delay is therefore the minimum delay that can occur. A six month delay is currently applied in transmission. However, the AER considers that a 12 month delay may also be acceptable noting that an 18 month lag on rewards is applied in South Australia and that a 12 month lag has applied in Victoria.

The AER notes that performance reporting is currently based on a calendar year for some DNSPs and a financial year for others. The AER recommends that all reporting be on a calendar year basis to facilitate public reporting and to assist the AER in its administration of annual regulatory processes applicable to DNSPs. It is the AER's aim that the annual reporting arrangements in relation to the STPIS be as light handed as is practical and appropriate.

Typically, performance data is received 1.5 months after the performance year and published approximately 6 months after the performance year. If the reporting period ends in June, there is a large possibility that reporting to the AER would not be completed before the end of December due to the increased workloads that DNSPs experience prior to the end of the calendar year (responding to questions, data audits etc.) and the short month in December. The subsequent delay in publishing could mean public reporting occurs 8 months after the performance year. The AER therefore proposes that reporting apply on a calendar year basis, that is from 1 January to 31 December. As outlined below, this means that:

- jurisdictions that have regulatory periods aligning with financial years (eg QLD & SA) would have a six month lag between the end of their reporting periods and the application of the s-factor to customer prices
- jurisdictions that have regulatory periods aligning with calendar years (i.e. TAS & VIC) would have a 12 month lag between the end of their reporting periods and the application of the s-factor to customer prices.

The current regulatory periods, reporting periods and AER proposal are set out in the following table.

Table 2: Alignment of reporting periods

Jurisdiction	Start of next regulatory period	Performance reporting period under current jurisdictional arrangements	Delay before s-factor applied under current jurisdictional scheme	Proposed reporting period under STPIS	Proposed delay before s-factor applied under STPIS
ACT	1 July 2009	July to June	na	Jan to Dec	6 months
NSW	1 July 2009	July to June	na	Jan to Dec	6 months
QLD	1 July 2010	July to June	na	Jan to Dec	6 months
SA	1 July 2010	Jan to Dec	Penalties apply 6 months Rewards apply 18 months	Jan to Dec	6 months
TAS	1 Jan 2013	July to June	na	Jan to Dec	12 months
VIC	1 Jan 2010	Jan to Dec	12 months	Jan to Dec	12 months

Q. The AER would like views on the proposed timing of the incentive and the impact of requiring all reporting on a calendar year as proposed.

6.10 Implementation issues

In its issues paper the AER asked stakeholders about transitional issues that might occur in the application of a national STPIS.

6.10.1 Issues for jurisdictions without an s-factor scheme

6.10.1.1 Stakeholder comments

Most stakeholders noted that ensuring accuracy and availability of robust data for setting targets was the most important factor in introducing an s-factor scheme. Aurora noted that the duration of the time series data needed to be considered. The ENA stated that a key objective in developing a scheme should be to align customer expectations and understand the implications for customers and the community, and suggested that a paper trial would allow the development of a comprehensive practical understanding of a scheme's operation.

6.10.1.2 AER response

The AER agrees that data needs to be accurate and available over an appropriate time period. As already noted, the proposed scheme has been designed to allow flexibility so that the scheme can be adjusted to reflect the specific circumstances of each DNSP, particularly those that have not previously been subject to s-factor schemes. For example, the scheme allows for the AER to set targets at the average network level should accurate data not be available at less aggregated levels such as by network type. However, the AER would, for example, expect a DNSP to have less aggregated

data available for a subsequent regulatory control period where a ‘soft-start’ (e.g. through average network level targets) has been applied initially. The AER notes that the proposed scheme provides for clarity and certainty so that DNSPs can be reasonably expected to start taking the necessary action to comply with the scheme. The AER has sought specific feedback on this issue in section 5 of this paper.

6.10.2 Issues for jurisdictions with an s-factor scheme

6.10.2.1 Stakeholder comments

In its submission, United Energy stated that for DNSPs currently subject to an s-factor scheme, the AER should focus on ensuring that adequate historical data is available to support any changes in service measures and that any changes result in equal or improved incentives for DNSPs. United Energy also noted that appropriate transitional arrangements should be implemented to ensure there is no disadvantage to DNSPs. Citipower Powercor concurred with this point.

6.10.2.2 AER response

The AER recognises that issues may arise for DNSPs in the transition from a jurisdictional scheme to the national scheme, and if the national scheme’s parameters or other attributes were to be altered between regulatory control periods. Therefore, the proposed scheme sets out that the AER will give consideration to an arrangement that reduces the impact of transitional issues. The AER shall decide on the appropriateness of the arrangement to address the transitional issue on the basis of:

- materiality of the issue
- reasonableness and fairness to the DNSP and customers
- consistency with the objectives of the scheme.

6.10.3 Issues with implementing a Guaranteed Service Level scheme

6.10.3.1 Stakeholder comments

Several stakeholders noted that the implementation of a national GSL scheme would require jurisdictional regulators to relinquish to the AER responsibility for payments under the GSL scheme. ETSA submitted that DNSPs, in conjunction with state bodies, could propose payments and thresholds to comply with the AER’s GSL scheme. ESCOSA believed that the AER should wait until the Steering Committee of Officials Retail Policy Working Group has completed its work on policy in relation to the future distributor-customer interface before setting up a GSL scheme.

6.10.3.2 AER response

The AER will not seek to replace or supplement a jurisdictional scheme with additional GSLs. However, should jurisdictional electricity legislation be changed to no longer require a GSL scheme, the proposed STPIS would allow for its GSL component to be started within a regulatory control period.

The proposed GSL component is based on existing GSL schemes in Australia. For example, the measures, thresholds of performance and payment amounts have been determined by undertaking an analysis of existing schemes.

The proposed STPIS sets out that payments for GSLs are not compensation but recognition of poor performance. Furthermore, the proposed STPIS provides that payments should be made to customers automatically as the AER considers that the incentive for DNSPs 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).

The parameters proposed for the scheme reflect those applied in existing jurisdictional GSL schemes as indicated in Table 3 below. With a few exceptions, the definitions for each parameter in the proposed STPIS are the same as those in jurisdictional schemes. Most jurisdictions have applied a GSL parameter for keeping appointments on time. The AER notes the problems experienced and the different mechanisms used to specify the time of the appointment (half day or 2 hr window, whether the customer’s presence is required at the appointment or not etc.) and is currently of the view that a GSL parameter for appointments should not be implemented. Conversely, only one jurisdiction applies a GSL parameter for response to written enquiries, although most DNSPs are required to respond within a certain timeframe. The AER is of the view that a GSL for responses to written enquiries is appropriate and proposes to include this parameter in the scheme.

Table 3: Current GSL schemes

Proposed parameter	State Jurisdiction					
	ACT	NSW	QLD	SA	TAS	VIC
Frequency of interruptions	x	✓	✓	✓	✓	✓
Duration of interruptions	x	x	✓	✓	✓	x
Total duration of interruptions	x	✓	x	x	x	✓
Streetlight repair	x	✓	x	✓	✓	✓
New connections	✓	✓	✓	✓	✓	✓
Response to written enquiries	✓	x	x	x	x	x
Notice of planned interruptions	✓	✓	✓	x	✓	x

The AER has used different thresholds of performance for those customers on CBD and urban feeders to those that are on rural feeders. On this matter, the AER notes that acceptable levels of service performance can vary between different customer groups. Furthermore, the AER has set several threshold values for the ‘total duration of interruptions’ parameter so that increasing payments are made as each threshold is exceeded. This approach provides an increasing incentive to a DNSP to address particularly poor service performance. The same exclusion criteria that would apply to the s-factor component is proposed to apply to the GSL component of the scheme.

The GSL payment amounts proposed in the scheme reflect those commonly applied in existing jurisdictional schemes. The amount is higher than payments made by DNSPs in some jurisdictions and lower than others. The scheme allows that current levels of

payments can continue or be different to those set out in the scheme, where this meets the objectives of the scheme.

Q. The AER seeks views on the parameters, threshold levels, payment amounts and exclusion criteria in the GSL component of the proposed STPIS.

6.11 Data collection

Information collected for the purposes of the proposed STPIS would be collected annually by the AER through a regulatory information instrument. The AER intends to collect data relevant to the application of the STPIS from DNSPs that are operating under the scheme and, as soon as is practical, from DNSPs that will be subject to the scheme in the future.

As noted above, the AER will also proceed with the development of a national public reporting regime. The AER will consult on the measures to be included when it consults on annual reporting arrangements. Consultation on these arrangements will commence later this year. The reporting regime will have regard to any service standards reporting requirements imposed by the authorities responsible for the administration of jurisdictional electricity legislation. The AER also intends to work with relevant industry bodies involved in establishing and defining performance measures, in relation to issues such as national consistency in definitions and data reporting arrangements.

Appendix A: Submissions received on the STPIS

The following interested parties provided submissions on issues raised in the AER's service target performance incentive scheme issues paper that was released in November 2007.

- ActewAGL
- Alinta
- Aurora
- CitiPower Powercor
- Country Energy
- Energy Networks Australia (ENA)
- Energex
- Ergon Energy
- ESCOSA
- ETSA Utilities
- Integral Energy
- Major Energy Users Inc. on behalf of the Energy Market Reform Forum (MEU)
- SP AusNet
- United Energy

Copies of these submissions are available on the AER's website at www.aer.gov.au.

Appendix B: Key issues raised by stakeholders

Issue	Stakeholder	Comment
<p>Objectives in establishing a service target performance incentive scheme.</p>	Aurora	<p>Aurora noted that the scheme be developed in line with the following principles:</p> <ul style="list-style-type: none"> ▪ customer focussed ▪ consistency in approach ▪ measurable indicators ▪ meaningful indicators ▪ simplicity ▪ unbiased ▪ simple to administer
	Citipower Powercor	<p>The businesses fully support the establishment of a common approach, to be adopted for all jurisdictions within a national framework. The various schemes adopted by jurisdictional regulators around Australia however do vary therefore a number of transitional issues will inevitably arise in moving to a standardised approach.</p>
	ENA	<p>The ENA supports the development of a national scheme designed to reward/penalise DNSPs for performance relative to a series of targets.</p>
	Ergon Energy	<p>Ergon support the development of a national scheme, and states that a clear statement of intent is required by the AER of the scheme's</p>

		objective.
	ESCOSA	The scheme need not be ‘broad brush’ in application. The objective should be to target a DNSPs performance in relation to poorly performing parts of the network/business.
	MEU	The MEU noted the Victorian scheme as best practice but stipulates that this could be modified to reflect the lesser degree of information on performance available to other DNSPs.
Types of schemes	Alinta	Supports a scheme involving public reporting, GSL and s-factor components, noting that existing schemes of this kind could be improved by providing flexibility for individual businesses to propose an incentive arrangement within the scheme that reflects the DNSPs geographic and market circumstances and allows the businesses to manage its reward/risk preferences.
	Aurora	States that GSL scheme is the most appropriate STPIS. This allows financial risk to be shared equally between network users and operators. An s-factor scheme introduces unnecessary complexity with no added benefits.
	Citipower Powercor	<p>The businesses support public reporting against a common set of performance indicators. Citipower Powercor also supports an s-factor scheme in conjunction with a GSL scheme.</p> <p>Citipower Powercor also consider that any national s-factor scheme should provide distributors with an incentive to maintain or improve average performance for the benefit of all customers where it is cost effective for them to do so whilst the GSL scheme should provide an</p>

		<p>additional incentive for distributors to improve the level of service provided to the worst served customers.</p> <p>As long as the schemes are appropriately designed and administratively simple, the benefit obtained by adopting both an s-factor and GSL scheme is likely to outweigh the cost of administering two schemes.</p>
	Country Energy	AER should not impose an s-factor scheme where there is already a comprehensive service standards regime established by jurisdictions.
	ENA	Supports a GSL and s-factor scheme, which can interact concurrently, though noted that potential for double penalties should be removed. The AER should also ensure that DNSPs are not subject to one-off losses when transferring from a jurisdictional scheme to the national scheme.
	Ergon	Ergon supports public reporting, GSL and s-factor schemes. S-factor schemes should be limited to reliability indicators. States that ideally, both schemes should be applied at a national level with no state-based duplication or concurrent schemes.
	ESCOSA	Supports public reporting scheme but notes that the ‘name and shame’ approach may not be sufficient. Supports GSL schemes though notes that it should not be ‘legally’ compensatory in nature. ESCOSA disagrees with the assertion that GSL schemes are aimed at maintaining minimum service levels. ESCOSA submit that the aim of GSL schemes is to provide DNSPs with an incentive to improve service.

	ETSA	ETSA supports a public reporting scheme against a common set of performance indicators. Supports GSL and s-factor schemes. The schemes can operate concurrently so long as there is minimal overlap of customers targeted.
	Integral	Integral notes that any interaction between GSL and s-factor schemes should be clear, and does not result in double penalties. Agrees that both schemes could operate concurrently as they target different areas of service performance.
	United Energy	United Energy has stated that it is 'comfortable' that a scheme containing public reporting, GSL and s-factor components can work satisfactorily. Flexibility for different business should be provided (see Citipower Powercor comment above).
Overall design of an s-factor scheme	Alinta	A target based scheme is preferred as it is easier to administer, since it potentially requires less subjectivity in defining the relevant 'bands'.
	Aurora	Does not support a symmetrical scheme as 'symmetry' does not take into account the fact that events leading to reliability issues are not symmetrical; distribution networks spontaneously fail, but do not spontaneously improve themselves.
	Citipower Powercor	Support target based s-factor scheme. Citipower Powercor submits that the algebra underlying the s-factor scheme should be symmetric, so that penalties for poor performance do not outweigh rewards for service improvements. Where inherent variability in performance is caused by external factors such as weather, this can cause a bias and should be recognised in determining

		the distributor's revenue requirement.
	Energex	Energex supports an asymmetrical scheme in the absence of a strong linear relationship between cost and performance (which would be an appropriate basis for a symmetrical scheme).
	Ergon	Ergon supports a scheme that has reward and penalty incentives with scope for different limits on the reward and penalty applied.
	ETSA	ETSA state that risks associated with s-factor schemes are intrinsically asymmetrical in nature, therefore supports an asymmetrical scheme.
Number of parameters to be included	Citipower Powercor	Citipower Powercor submitted that measures should be included where customers value improved performance, where there is sufficient data to measure performance, and where performance is within the control of the distributor. These businesses further suggested that a range of reliability and customer service measures meet these criteria for inclusion, though notes that quality of supply measures should not be included until accurate data can be collated.
	Energex	Measures to be included should be: <ul style="list-style-type: none"> ▪ small in number and relevant to the DNSP ▪ meaningful to customers ▪ simple and easy to report

		<ul style="list-style-type: none"> ▪ send appropriate signals in relation to service performance.
	Ergon Energy	Number of measures to be included should be small and targeted to network reliability. They should be readily understood. The introduction of additional service issues such as power quality can occur in the future once a set of nationally recognised measures has been implemented and significant historical data recorded.
	ETSA	Keep number of measures small so that incentives are not diluted.
	MEU	The MEU expects the number of measures to be increased over time as more data becomes available and more measuring equipment is used/adopted by DNSPs.
	United	United Energy supports a target based scheme.
Types of measures in an s-factor scheme - reliability measures	Alinta	Supports inclusion of ‘traditional’ measures of SAIDI, SAIFI, CAIDI, and MAIFI. Most jurisdictions have enough historical data to set targets for these (except MAIFI).
	Citipower Powercor.	<p>Citipower Powercor supports the measures of SAIDI, SAIFI, MAIFI, and CAIDI. These measures can be disaggregated by network type and in some cases between planned and unplanned interruptions.</p> <p>In addition to those events that meet specific quantitative criteria, the businesses support the exclusion of interruptions that are caused by upstream transmission faults or generation shortfalls, other events where a distributor is required to shut down parts of the network for public safety reasons (e.g. in response to gas leaks or bushfires) or where supply interruptions are made at the request of a customer.</p>

	Energex	<p>Energex supports the inclusion of SAIDI and SAIFI, but not CAIDI as it is a function of SAIDI and SAIFI.</p> <p>Energex supports distinguishing between planned and unplanned interruptions as part of reliability indicators, because:</p> <ul style="list-style-type: none"> ▪ planned outages are associated with network maintenance ▪ incentives to minimise planned outages could promote practices that are counter to network security and safety
	Ergon	<p>SAIDI and SAIFI are appropriate measures to include. CAIDI is not, as it is a function of SAIFI and SAIDI and a representation of the customer's experience due to an outage and does not reflect a system's performance. Inclusion of MAIFI is not recommended at this time.</p> <p>Ergon Energy suggests that planned SAIDI should be excluded from the scheme. Planned outages may be indicative of high amounts of capital investment in the network and the impact of planned outages on the reliability of the radial network will vary significantly from that on a meshed network.</p>
	ETSA	<p>ETSA supports the inclusion of SAIFI, SAIDI, MAIFI and CAIDI in principle, though notes that many DNSPs would not currently have sufficient accurate data to report on MAIFI.</p> <p>Planned SAIDI outages should be excluded, customers are not as inconvenienced by planned interruptions as unplanned interruptions.</p>
	MEU	MEU supports the inclusion of SAIFI, SAIDI, MAIFI, and CAIDI.

		Planned and unplanned interruptions should be included, however, penalties for unplanned interruptions should be less severe.
Types of measures in an s-factor scheme - quality measures	Alinta	No Australian s-factor scheme currently includes a quality of supply measure, and it should not be included until the trade off between cost and quality improvement can be reasonably quantified.
	Aurora	Does not currently collect quality of supply data in response to explicit complaints, and does not own resources to collect such data. Would need at least 5 years worth of accurate and reliable data.
	Citipower Powercor	Citipower Powercor believes that further work needs to be conducted before any quality of supply measures are able to be included in a national s-factor scheme.
	Energex	Given the complexities associated with supply quality, it should not be addressed in the s-factor scheme; rather, it should be visited at a later date for potential inclusion.
	Ergon Energy	Quality indicators should not be used until they can be applied consistently at a national level, and a DNSP has a proven capability to track and record its network power quality parameters.
	ETSA	Willing to work with AER to assess how quality of supply can be more accurately measured and would support the inclusion of quality of supply if <ul style="list-style-type: none"> ▪ total/average performance could be adequately measured. ▪ it could be proven that the quality of supply issue was the fault of the DNSP (and reasonably foreseeable and within the DNSPS

		control) <ul style="list-style-type: none"> ▪ it could be shown that customers value improvements in the quality of supply
	MEU	Where the quality of supply affects the supply stability of a customer, this should be included within the s-factor scheme, and suggest that the AER implement a scheme which can accommodate continuous adjustment and integration of more detailed elements over time.
Types of measures in an s-factor scheme - customer service measures	Alinta	Prefers to account for customer service through a GSL scheme.
	Aurora	Believes that customer service standards can be adequately addressed through reporting scheme.
	Citipower Powercor	Citipower Powercor only supports the inclusion of call centre performance in a national s-factor scheme.
	Energex	Most customer service standards are better dealt with through the GSL scheme.
	Ergon Energy	Supports the inclusion of customer service standards into the GSL scheme, not the s-factor scheme.
	ETSA	Only those services that are received by all customers should be subject to an s-factor scheme, with the remainder dealt with through GSL schemes.
	MEU	Recommends that the AER establish links with the Ombudsman to create a methodology for implementing customer service standards in

		an s-factor scheme.
Approach to setting targets under an s-factor scheme	Aurora	The random nature of unplanned outages and the effect of current reliability improvement schemes must be accounted for in setting targets. The AER should ensure that there is adequate data – at least 5 years worth – to provide adequate statistical analysis.
	Citipower Powercor	The choice of method for setting performance targets should be case-specific and will depend on the availability of historical data, and the variability of performance data over time. Where reliable historic data is available and performance is generally stable, average historical performance would generally be the most appropriate method for setting targets.
	Energex	Targets that reflect the trending from DNSPs past historical performance would provide a sound basis for setting targets in the future. Consideration should also be given to past imperatives to which the DNSP has been subject and changes in definitions and reporting protocols over time.
	Ergon Energy	A DNSPs moving average historical performance may provide an appropriate basis for setting targets, as it captures both normalised historical performance, and the long term trend of system performance.
	ETSA	Setting targets should be case by case and specific to each DNSP. After the first year targets should be set based on actual performance from the first year of the scheme. Targets should only be altered where there is an exception. It is desirable to have at least 5 years or more

		worth of performance data.
	MEU	Target measures should be set on the basis of specific performance. Targets should be reassessed at each regulatory reset.
Approach to setting rewards and penalties	Citipower Powercor	Service incentive rates and weightings of indicators should ideally be determined on the basis of customer's willingness to pay. However, in the absence of further, more robust data, the businesses support the continuation of the use of VCR as the basis for incentive rates for reliability and customer service indicators in Victoria.
	Energex	Supports different incentive rates across jurisdictions to reflect different topographies. Weightings should account for jurisdictional and customer priorities, impacts of local factors, capacity of DNSPs program of work to deliver improvements and scope to improve performance.
	Ergon Energy	The AER should determine the relative weighting for each measure in a manner consistent with the objectives sought to be achieved by the scheme.
	ETSA	Incentive rates and weightings should be determined on the basis of customers' willingness to pay. Future rates for service measures could be based on surveys.
	MEU	Establish weightings through customer surveys. All customers of each class should receive the average service standard for the network as related to that class. Those receiving lower service standards should have the average standard of service improved at no additional cost.

Approaches for dealing with risk	Aurora	Using a dice is not an acceptable risk mitigation mechanism, therefore a single-point-target scheme is also not an acceptable method.
	Citipower Powercor	An appropriate mechanism to mitigate the impact of variability in S-factors, without impacting incentives for service performance, is to introduce a smoothing mechanism that would allow distributors to defer part or all of the S-factor from one year to the next (i.e. an S-bank). Such a mechanism provides distributors with flexibility to smooth the impact of normal variations in service performance such as that which may be attributable to weather conditions. An S-bank mechanism has been introduced in Victoria where the ESC found that volatility is substantially reduced when the S-factor is averaged over two years rather than one.
	Energex	Risk should be balanced between customer and DNSP and should include dead bands to account for seasonal volatility and data fluctuations, an overall limit on reward/penalty, and collars and caps.
	Ergon Energy	Supports the potential application of a combination of mechanisms, to manage risk, and supports a paper trial for initial regulatory period.
	ETSA	Deadbands, collars and caps are appropriate to limit risk to customers. Mechanisms need to be developed to mitigate financial risks for DNSPs for normal variations in performance and one off type events.
	MEU	Does not support the inclusion of any further protection from risks associated with an s-factor scheme. Considers that consumers face higher risks than the DNSP.

	United Energy	Deadbands, limits on penalties and collars/caps remove some risk from DNSPs, but should be considered in light of the historical data for DNSPs.
Exclusions	Alinta	Exclusions are needed to ensure that DNSPs are not inappropriately penalised in the event of extreme events. Alinta favours the statistical approach as per the IEEE standard 1366-2003.
	Aurora	Aurora does not support exclusions for customer service STPIS or reporting purposes. For reliability standards, does not favour the IEEE standard 1366-2003, because this standard excludes events on their relative severity, not their absolute severity.
	Citipower Powercor	Citipower Powercor supports the use of quantitative measures for setting criteria for exclusions from both the S-factor and GSL schemes. The use of quantitative criteria such as IEEE 1366-2003 is administratively simple and reduces the uncertainty that is created as a result of the regulator having discretion over the definition of widespread, rare or unforeseeable events. Also support the exclusion of events that are caused by upstream transmission faults or other events where a distributor is required to interrupt supply.
	ENA	Current approach to exclusions in transmission is appropriate, namely, based on force majeure events.
	Energex	Supports exclusions for events that are outside DNSPs control. These should apply to customer service standards, and reliability indicators.
	Ergon Energy	Ergon Energy support IEEE 1366-2003 standard, however, submits that a major delay event should be defined by reference to the 24 hour

		period from the time of the event, rather than from the start of the calendar date.
	ETSA	ETSA supports the use of quantitative measures for setting criteria for exclusions, and supports the application of IEEE 1366-2003 standard. The exclusions criteria do need to be catered to each individual DNSP – a ‘one size fits all’ approach will not suffice.
	MEU	MEU is totally opposed to using statistical measures, as they are used to exclude ‘outrider’ issues for DNSPs.
Issues with implementing a national GSL scheme	Aurora	Aurora submits that it must be ascertained whether local jurisdictions are willing to relinquish to the AER responsibility for requiring DNSPs to make GSL payments. Suggests that reliability may be better dealt with under GSL scheme than s-factor scheme.
	Ergon Energy	Any scheme should recognise discrete characteristics of different DNSPs, when defining services and establishing service delivery requirements. National GSL scheme would need to be supported by <ul style="list-style-type: none"> ▪ Appropriate limitations and immunities ▪ Practical arrangements for administration
	ESCOSA	Development of national STPIS needs to consider whether incentives that are considered appropriate for one DNSP are appropriate for other DNSPs.
	United Energy	The AER is obliged to consider current GSL schemes in jurisdictional arrangements when assessing whether to develop a national GSL

		scheme.
Issues for jurisdictions with/without an s-factor scheme	Aurora	For those without a current s-factor scheme, the AER needs to ensure that the level of reporting accuracy is set for each DNSP at the beginning of the regulatory period. This needs to be chosen such that the quality and duration of the data set is sufficient to provide adequate statistical analysis.
	Citipower Powercor	Citipower Powercor maintains that service performance should be measured and reported at the same level of disaggregation to preserve comparability with historical information and so as not to incur any additional reporting costs on distributors. Any changes to current schemes should not allow for DNSPs to experience windfall gains and losses.
	ENA	It is unclear as to what extent the introduction of an s-factor scheme will require review and adjustment to current reporting practices. The key objective should be to align customer expectations and understand the implications for customers and the community. A paper trial would allow the development of a comprehensive practical understanding of how the scheme operates.
	ETSA	Need to ensure that adequate time is allowed for those without an s-factor scheme to collect robust data. The Outage Management System (intended to be used for reliability reporting) implemented by ETSA has only been operational since July 2005, which means there will be insufficient data to establish s-factor targets for the forthcoming regulatory control period.

	United Energy	<p>For those jurisdictions without a current s-factor scheme, need to consider:</p> <ul style="list-style-type: none"> ▪ Availability of data ▪ Data accuracy <p>The national scheme for these DNSPs should consider:</p> <ul style="list-style-type: none"> ▪ Geographical and locational aspects of the DNSP ▪ Different market features ▪ Jurisdictional service schemes and targets ▪ Different reward/risk preferences of the business <p>For those with a current s-factor scheme, need to consider:</p> <ul style="list-style-type: none"> ▪ Ensuring that an adequate history of data is available to support any changes in service measures ▪ Ensuring that any change to current structure results in equal or improved incentives for DNSPs ▪ Appropriate transitional arrangements to ensure there is no disadvantage to DNSPs.
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Glossary

annual revenue requirement	has the meaning set out in the National Electricity Rules.
CAIDI (Customer Average Interruption Duration Index)	the sum of the duration of each sustained customer interruption (in minutes), divided by the total number of sustained customer interruptions (SAIDI divided by SAIFI). CAIDI excludes momentary interruptions (one minute or less duration).
distribution consultation procedure	has the meaning set out in the National Electricity Rules.
distribution network service provider	has the meaning set out in the National Electricity Rules.
jurisdictional electricity legislation	has the meaning set out in the National Electricity Law.
incentive rate	the rate at which a revenue increment or decrement accrues due to a change in service performance.
interruption	<p>an interruption is any loss of electricity supply to a customer associated with an outage of any part of the electricity supply network, including generation facilities and transmission networks, of more than 0.5 seconds, including outages affecting a single premises. The customer interruption starts when recorded by equipment such as SCADA or, where such equipment does not exist, at the time of the first customer call relating to the network outage. An interruption may be planned or unplanned, momentary or sustained.</p> <p>Does not include subsequent interruptions caused by network switching during fault finding.</p>
MAIFI	the total number of customer interruptions of one minute or less, divided by the total number of distribution customers.
national electricity legislation	has the meaning set out in the National Electricity Law.
national electricity market	has the meaning set out in the National Electricity Law.

National Electricity Rules or NER	the rules as defined in the National Electricity Law.
network type	the type of network supplying customers being either CBD, urban, short rural or long rural feeders.
parameters	the performance measures.
performance target	the level of performance that results in a DNSP neither receiving a financial penalty nor financial reward in the regulatory year.
planned interruption	an interruption due to a planned event.
regulatory control period	has the meaning set out in the National Electricity Rules.
regulatory proposal	has the meaning set out in the National Electricity Rules.
revenue at risk	the amount by which a DNSP's revenue may increase or decrease as a result of the application of the scheme.
SAIDI	The sum of the duration of each sustained customer interruption (in minutes) divided by the total number of distribution customers. SAIDI excludes momentary interruptions (one minute or less).
SAIFI	The total number of sustained customer interruptions divided by the total number of distribution customers. SAIFI excludes momentary interruptions (one minute or less).
service target performance incentive scheme	the service target performance incentive scheme defined in the National Electricity Rules.
s-factor or service standards factor	the percentage revenue increment or decrement that applies in each regulatory year.
unplanned interruption	an interruption due to an unplanned event.
Weighted average cost of capital	has the meaning set out in the National Electricity Rules.