



Proposed

**Electricity distribution network service
providers**

Service target performance incentive scheme

April 2008

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1 Nature and authority

1.1 Introduction

Consistent with the requirements of clause 6.6.2 of the *National Electricity Rules* (*NER* or *Rules*), this publication sets out the Australian Energy Regulator's (AER) *service target performance incentive scheme* for *distribution network service providers* (DNSPs).

1.2 Authority

Clause 6.6.2(a) of the *NER* requires the AER to develop, in accordance with the *distribution consultation procedures*, the *service target performance incentive scheme*.

1.3 Role of this scheme

- (a) The role of this *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*.
- (b) To that end, this *scheme*:
 - (1) defines the performance incentive *scheme parameters* that specify how a DNSP's service performance is measured
 - (2) sets out the requirements with which the values to be attributed to the *parameters* must comply
 - (3) will be used by the AER to decide the service standards financial reward or penalty component of a distribution determination
 - (4) provides guidance about the approach the AER will take in reviewing a DNSP's service standards performance and explains how this will affect a DNSP's allowed revenue.
- (c) The obligation of a DNSP to comply with this *scheme*:
 - (1) is additional to any obligation imposed under any other law applying to a DNSP, and
 - (2) does not derogate from such an obligation.

1.4 AER objectives

The AER objectives for this *scheme* are that the *scheme*:

- (a) is consistent with the national electricity objective set out in section 7 of *National Electricity Law*

(b) is consistent with clause 6.6.2(b)(3) of the *NER*, which requires that in developing and implementing a *service target performance incentive scheme*, the AER 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 DNSPs, and
- ii. any *regulatory obligation or requirement* to which the DNSP is subject, and
- iii. the past performance of the distribution network, and
- iv. any other incentives available to the DNSP 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) promotes transparency in:

- (1) the information provided by a DNSP under the *scheme* to the AER, and
- (2) the decisions made by the AER.

1.5 Confidentiality

The AER's obligations regarding confidentiality and the disclosure of information provided to it by a DNSP are governed by the *Trade Practices Act 1974*, the National Electricity Law and the *NER*.

1.6 Definitions and interpretation

(a) In this *scheme*, the words and phrases presented in italics have the meaning given to them in:

- (1) the glossary, or
- (2) if not defined in the glossary, the *NER*.

(b) Explanations in this *scheme* about why certain information is required are provided for guidance only.

1.7 Processes for revision

- (a) The AER may amend or replace this *scheme* from time to time in accordance with clause 6.6.2(c) of the *NER* and the *distribution consultation procedures*.
- (b) While this *scheme* can be amended at any time, an amendment cannot apply to a DNSP for a *regulatory control period* unless it is promulgated no less than 19 months before the commencement of that *regulatory control period* (the ‘cut off date’).
- (c) In order to ensure that the *distribution consultation procedures* can be completed before the cut off date, a DNSP must submit any proposed amendments to the AER at least 120 *business days* before the cut off date.
- (d) A proposal by a DNSP to amend this *scheme* must demonstrate how the proposed amendment is consistent with the objectives in clause 1.4 of this *scheme*.
- (e) A proposal by a DNSP to add or vary a *parameter* must:
 - (1) provide information and quantitative data on its performance history covering at least the most recent three to five years as measured by its proposed *parameter*, and
 - (2) where this performance history information is not available, provide an appropriate benchmark or methodology to set *performance targets*, and *incentive rates* for the proposed *parameter*.

1.8 Version history and effective date

A version number and an effective date of issue will identify every version of this *scheme*.

2 The service target performance incentive scheme

2.1 General application of the scheme

- (a) Consistent with clause 6.2.6 of the *NER*, the *scheme* applies to the control mechanism for *standard control services*.
- (b) The *parameters* and the maximum revenue increment or decrement that a DNSP can receive and the payments to customers that a DNSP must make for a given level of performance are prescribed in this *scheme*.
- (c) In clauses 6.3.2, 6.8.2(c)(2), 6.8.2(d) and 6.12.1, the *NER* provides that:
 - (1) 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 *service target performance incentive scheme*.
 - (2) A DNSP's *regulatory proposal* must contain at least:
 - i. as part of the *building block proposal*, a description, including relevant explanatory material, of how the DNSP proposes the *service target performance incentive scheme* 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.
 - (3) In each distribution determination the AER will decide on how any applicable *service target performance incentive scheme* is to apply to the DNSP.
- (d) Where the *scheme* indicates that a DNSP can make a proposal, that proposal should be made in either the *regulatory proposal* in accordance with *NER* clause 6.8.2 or any revised *regulatory proposal* in accordance with *NER* clause 6.10.3, and is subject to the requirements of those clauses.

2.2 Structure of the scheme

- (a) This *scheme* comprises the following four components:
 - (1) the reliability of supply component
 - (2) the quality of supply component
 - (3) the customer service component
 - (4) the guaranteed service level (GSL) component.
- (b) Under the reliability, quality and customer service components of the *scheme*, a DNSP's revenue is increased (or decreased) based on changes in service

performance from year to year, as assessed by the AER in accordance with this *scheme*.

- (c) Under the GSL component, payments are made directly to customers where the service performance received by those customers is worse than a specific threshold.
- (d) One or more components of the *scheme* may apply to a DNSP.
- (e) Each component sets out:
 - (1) the *parameters* that may apply
 - (2) the requirements with which the values to be attributed to the *parameters* must comply, and
 - (3) where applicable, the maximum revenue increment or decrement that a DNSP may receive or the payment to customers that a DNSP must make under each component of the *scheme*.

2.3 Timing of performance

- (a) Where a DNSP's *regulatory control period*:
 - (1) commences on 1 January or 1 July, the DNSP must measure its performance for each year within the *regulatory control period* from the 1 January until 31 December inclusive
 - (2) commences on a day other than the 1 January or 1 July, the AER will determine the period that the DNSP must measure its performance for each year within the *regulatory control period*.
- (b) Where a DNSP's *regulatory control period* ceases before a full multiple of years has transpired from the start of the *regulatory control period*, the DNSP must measure its performance in the final year from the 1 January or 1 July or as determined by the AER in accordance with clause 2.3(a)(2), as appropriate, until the end of the *regulatory control period*.
- (c) Where clause 2.3(b) applies, the measured performance may be adjusted to represent annualised performance.

2.4 Revenue at risk

- (a) Subject to clause 2.4(b) and excluding the GSL component, the maximum revenue increment or decrement (the *revenue at risk*) for the *scheme* components in aggregate for each year within the *regulatory control period* shall be 3%, that is, the sum of the *s-factors* for all *parameters* must lie between +3% and -3%.
- (b) A different *revenue at risk* may apply where this would satisfy the objectives of the *scheme* described in clause 1.4.

- (c) The *s-factor* will be calculated and approved annually by the AER in accordance with appendix C.
- (d) The application of a revenue increment or decrement or a portion of the revenue increment or decrement may be delayed for a period of one year, in accordance with appendix C, for the purposes of reducing price variations to customers.
- (e) A DNSP proposing a delay in accordance with clause 2.4(d) must provide in writing its reasons for believing that the delay will result in reduced price variations to customers.
- (f) This *scheme* does not operate retrospectively. An adjustment to a DNSP's allowed revenue can only be made as a result of its performance in a period where *parameters* and values have been established under the *scheme* for the DNSP in advance of the relevant period.

2.5 Transitional arrangements

- (a) The AER recognises that transitional issues may arise from one *regulatory control period* to the next if the *scheme's parameters* or other attributes are altered.
- (b) The AER will give consideration to an arrangement under the *scheme* that reduces the impact of transitional issues.
- (c) Subject to any transitional arrangements set out in the *NEL, NER* or *national electricity legislation*, the AER may in its absolute discretion consider and decide whether the *scheme* or a component of the *scheme* should be altered to take account of a transitional issue.
- (d) The AER shall decide on the appropriateness of the arrangement to address a transitional issue on the basis of:
 - (1) materiality of the issue
 - (2) reasonableness and fairness to the DNSP and customers
 - (3) consistency with the objectives as set out in clause 1.4.
- (e) The AER shall set out in writing its reasons for deciding on the appropriateness of the proposed transitional arrangements.

2.6 Suspension of scheme

- (a) At any time during a *regulatory control period* in which a *scheme* applies to a DNSP, the AER may in its absolute discretion consider and decide whether the *scheme* or a component of the *scheme* should be suspended for a *regulatory control period* or a portion of a *regulatory control period*.
- (b) A DNSP proposing that the *scheme* or a component of the *scheme* be suspended must provide in writing its reasons for proposing the suspension.

- (c) The AER will publish its reasons for deciding to suspend or to not suspend the *scheme*.
- (d) Before suspending a *scheme* the AER will consult with the relevant DNSP and such other persons as it considers appropriate.

3 Reliability of supply component

3.1 Performance incentive scheme parameters

- (a) Appendix A contains standard definitions of the following reliability of supply *parameters*:
- (1) SAIDI
 - (2) SAIFI
 - (3) MAIFI
- (b) Each of these *parameters* will apply during a *regulatory control period* except where the AER determines otherwise in its distribution determination for a DNSP.
- (c) Where a DNSP is unable to measure MAIFI, then MAIFI will not apply during that *regulatory control period*.
- (d) The electricity distribution network area shall be divided into segments by *network type*.
- (e) The network area may be segmented by a method other than *network type* if the alternative better meets the objectives as set out in clause 1.4.
- (f) *Performance targets* and *incentive rates* will be applied to each parameter segment.

3.2 Values for parameters

3.2.1 Performance Targets

- (a) The *performance targets* must be based on average performance over the past five years modified by the following:
- (1) any reliability improvements completed or planned where the planned reliability improvements are included in the expenditure program proposed by the DNSP in its *regulatory proposal* or forecast to occur in the period between the lodging of the *regulatory proposal* and the end of the current *regulatory control period*, and where the reliability improvements are expected to result in a material improvement in supply reliability
 - (2) any other factors that are expected to materially affect network reliability performance including the effect of any non-network alternatives to network augmentation.
- (b) Where a DNSP proposes a *performance target* modified in accordance with clause 3.2.1(a)(1) or clause 3.2.1(a)(2), the DNSP must provide in writing an explanation of how the modified *performance target* has been calculated.

- (c) Where five years of data is not available the AER may approve a *performance target* based on an alternative methodology or benchmark where the AER is satisfied that the target meets the objectives set out in clause 1.4.

3.2.2 Incentive rate

- (a) The *incentive rates* must be based on the value that customers place on supply reliability (the ‘value of customer reliability’ or VCR).
- (b) Where the electricity distribution network is divided into segments by *network type*, the VCR to be used to determine *incentive rates* is:
- i. for the CBD segment, \$59,200 per MWh increased by CPI from 2002 to the start of the relevant *regulatory control period*, and
 - ii. for all other *parameter* segments, \$29,600 per MWh increased by CPI from 2002 to the start of the relevant *regulatory control period*.
- (c) Where the electricity distribution network is divided into segments by a method other than *network type* in accordance with clause 3.1(e), the VCR to be used to determine *incentive rates* for parameter segments will be consistent with the VCR to be used under clause 3.2.2(b).
- (d) An alternative VCR may apply to a *parameter* segment. Where the DNSP proposes an alternative VCR, the DNSP should provide the AER with the methodology used to calculate the value and the research that supports the calculation.
- (e) The portion of VCR assigned to the *parameters* SAIDI and SAIFI is determined by applying an appropriate weighting to each *parameter*.
- (f) Where the electricity distribution network is divided into segments by *network type*, the weighting will be either as set out in Table 1 or a value determined from an applicable assessment of the value that customers attribute to the level of service measured by each *parameter*.

Table 1 – Weightings for SAIDI and SAIFI

Parameter segment	Ratio of SAIDI to SAIFI
CBD	1.13
Urban	0.97
Rural (short and long)	0.92

- (g) Where the electricity distribution network is divided into segments by a method other than *network type* in accordance with clause 3.1(e), the weighting will be a value determined from an applicable assessment of the value that customers attribute to the level of service measured by each *parameter*.

- (h) The *incentive rate* for SAIDI is calculated by:
- i. multiplying the portion of VCR assigned to SAIDI (in \$/MWh) by the average annual energy consumption (in MWh) expected for the *regulatory control period*
 - ii. dividing by the smoothed *annual revenue requirement* (in \$), and
 - iii. dividing by the number of minutes in a year.
- (i) The *incentive rate* for SAIFI is calculated by:
- i. multiplying the portion of VCR assigned to SAIFI (in \$/MWh) by the average annual energy consumption (in MWh) expected for the *regulatory control period*
 - ii. dividing by the smoothed *annual revenue requirement* (in \$)
 - iii. dividing by the number of minutes in a year, and
 - iv. multiplying by the average of the annual *performance target* for SAIDI divided by the annual *performance target* for SAIFI in each year of the *regulatory control period*.¹
- (j) The *incentive rate* for MAIFI must be either 8% of the *incentive rate* for SAIFI or a value determined from an applicable assessment of the value that customers attribute to a reduction in MAIFI.

3.3 Exclusions

- (a) The following may be excluded when calculating the revenue increment or decrement under the *scheme*:
- (1) any day (midnight to midnight) where daily SAIDI for the electricity distribution network exceeds the *major event day* threshold as set out in appendix D
 - (2) load shedding due to a generation shortfall
 - (3) load interruptions caused by a failure of the shared transmission network
 - (4) load interruptions caused by a failure of transmission connection assets except where the interruptions were due to inadequate planning of transmission connections and the DNSP is responsible for transmission connection planning.

¹ This figure will equate to CAIDI for each year of the *regulatory control period*. SAIFI must be determined to three decimal places to avoid rounding errors.

4 Quality of supply component

4.1 Performance incentive scheme parameters

No quality of supply *parameters* are currently specified for inclusion in the *scheme*.

5 Customer service component

5.1 Performance incentive scheme parameters

- (a) Appendix A contains standard definitions of the following customer service *parameters*:
- (1) telephone answering
 - (2) streetlight repair
 - (3) new connections
 - (4) response to written enquiries
 - (5) notice of *planned interruptions*.
- (b) Each of the following *parameters* will apply during a *regulatory control period* except where the AER determines otherwise in its distribution determination for a DNSP:
- (1) telephone answering.
- (c) The DNSP may propose that one or more of the following *parameters* apply during the *regulatory control period* where the inclusion of the *parameter(s)* would satisfy the objectives of the *scheme* described in clause 1.4:
- (1) streetlight repair
 - (2) new connections
 - (3) response to written enquiries
 - (4) notice of *planned interruptions*.
- (d) The AER may require a DNSP to include any or all of the *parameters* in clause 5.1(c) for a *regulatory control period* where the AER considers that the inclusion of any or all of the *parameters* listed in clause 5.1(c) would satisfy the objectives of the *scheme* described in clause 1.4.
- (e) *Performance targets* and *incentive rates* will be applied to each *parameter*.

5.2 Revenue at risk

- (a) The maximum *revenue at risk* for all customer service *parameters* in aggregate shall be 1% of revenue for each year of the *regulatory control period*.
- (b) The maximum *revenue at risk* for an individual customer service *parameter* shall be 0.5% of revenue for each year of the *regulatory control period*.

5.3 Values for parameters

5.3.1 Performance Targets

- (a) The *performance targets* must be based on average performance over the past five years modified by the following:
- (1) any customer service improvements completed or planned where the planned customer service improvements are included in the expenditure program proposed by the DNSP in its *regulatory proposal* or forecast to occur in the period between the lodging of the *regulatory proposal* and the end of the current *regulatory control period*, and where the customer service improvements are expected to result in a material improvement in customer service.
 - (2) any other factors that are expected to materially affect the service being measured by the *parameter*.
- (b) Where a DNSP proposes a *performance target* modified in accordance with clause 5.2.1(a)(1) or clause 5.2.1(a)(2), the DNSP must provide in writing an explanation of how the modified *performance target* has been calculated.
- (c) Where five years of data is not available the AER may approve a *performance target* based on an alternative methodology or benchmark where the AER is satisfied that the target meets the objectives set out in clause 1.4.

5.3.2 Incentive rate

- (a) The *incentive rate* for the telephone answering *parameter* must be either 0.040 or a value determined from an applicable assessment of the value that customers attribute to the level of service proposed.
- (b) Where practicable, the *incentive rates* for *parameters* other than the telephone answering *parameter* should be based on the value that customers attribute to the level of service proposed.
- (c) Where clause 5.3.2(b) cannot be met, then the DNSP should propose an appropriate methodology for setting an *incentive rate* that is consistent with the objectives set out in clause 1.4.
- (d) A DNSP must provide information that explains how the proposed *incentive rates* have been calculated.

5.4 Exclusions

- (a) Where the impact of an event is allowed to be excluded from the calculation of a revenue increment or decrement under the reliability of supply component of this *scheme* (under clause 3.3), the impact of that event may be excluded from the calculation of a revenue increment or decrement for the telephone answering *parameter*.

(b) For other customers service *parameters*, the DNSP may propose exclusions if appropriate, with regard to the objectives set out in clause 1.4.

6 Guaranteed service level component

6.1 Application

- (a) Where *jurisdictional electricity legislation* imposes an obligation on a DNSP to operate a guaranteed service level scheme, clauses 6.2 to 6.4 do not apply to the DNSP.
- (b) Should *jurisdictional electricity legislation* be altered within the current *regulatory control period* to no longer impose an obligation on a DNSP to operate a guaranteed service level scheme, the AER may decide to apply clauses 6.2 to 6.4 to the DNSP.

6.2 Performance incentive scheme parameters

- (a) Appendix A contains standard definitions of the following *parameters*:
 - (1) frequency of interruptions
 - (2) duration of interruptions
 - (3) total duration of interruptions
 - (4) streetlight repair
 - (5) new connections
 - (6) response to written enquiries
 - (7) notice of *planned interruptions*.
- (b) Each of these *parameters* will apply during a *regulatory control period* except where the AER determines otherwise in its distribution determination for a DNSP.
- (c) A *parameter* should not apply during a *regulatory control period* where:
 - (1) the DNSP cannot measure service performance, or
 - (2) insufficient historical data is available to determine the DNSP's current service performance, or
 - (3) the cost of applying the *parameter* during the *regulatory control period* is likely to be greater than the cost customers are willing to pay for the inclusion of the measure.
- (d) Customers may be segmented into groups by geographic area or by feeder type or by some other method. Different thresholds and GSL payment amounts may apply for each customer group.

6.3 Values for parameters

6.3.1 Thresholds

(a) The thresholds for the *parameters* are shown in Table 2.

Table 2 – GSL Parameter Thresholds

Parameter	Threshold
Frequency of interruptions	CBD and Urban feeders – 9 interruptions Rural (short and long) feeders – 15 interruptions
Duration of interruptions	CBD and urban feeders – 12 hours Rural (short and long) feeders – 18 hours
Total duration of interruptions	Level 1 – 20 hours Level 2 – 30 hours Level 3 – 60 hours
Streetlight repair	5 days
New connections	Connection on or before the day agreed
Response to written enquiries	5 days, excluding Saturday, Sunday and any Public Holiday applicable to the customer's location
Notice of planned interruptions	4 days, excluding Saturday, Sunday and any Public Holiday applicable to the customer's location

(b) A DNSP may propose or the AER may require a different threshold for a *parameter* where:

- (1) the forecast cost of GSL payments is likely to be greater than the cost customers are prepared to pay, or
- (2) the application of the threshold in Table 2 would require the DNSP to undertake expenditure in excess of the expected benefit to customers, or
- (3) the services currently provided by the DNSP are significantly better than the threshold level for the *parameter*.

6.3.2 Payment

- (a) A GSL payment must be made to a customer when the service performance to that customer exceeds the GSL *parameter* threshold.
- (b) Any payments required to be made by the DNSP to a customer under clause 6.3.2(a) must be paid by the DNSP as soon as practicable after the obligation arises.
- (c) A DNSP is required to monitor service levels to promptly detect when actual service performance has exceeded the GSL *parameter* threshold.

- (d) A DNSP may apply to the AER for an exclusion from clause 6.3.2(a) where the DNSP does not have the systems required to detect when a service exceeds the threshold.
- (e) Where a DNSP has applied for an exclusion from clause 6.3.2(a), the AER may grant the DNSP an exemption from the requirement to make payments in accordance with clause 6.3.2(a) for a period of up to one year.
- (f) During the period of an exemption granted by the AER, the DNSP must make GSL payments when it becomes aware that the service provided has exceeded the *GSL parameter* threshold. This includes when a customer shows reasonable evidence that a *GSL parameter* threshold has been exceeded.
- (g) A DNSP must make GSL payments by:
- (1) applying a credit to the customer's account, or
 - (2) posting or delivering a cheque to the customer, or
 - (3) electronic transfer of the payment to the customer's bank account, or
 - (4) a method agreed with the customer.

6.3.3 Payment amount

- (a) GSL payments are not intended to compensate customers for loss suffered as a result of poor service. GSL payments are intended to be acknowledgement of poor service.
- (b) Payment amounts are shown in Table 3.

Table 3 – GSL Payment Amounts

Parameter	Payment Amount A\$ (including GST if applicable)
Frequency of interruptions	\$80
Duration of interruptions	\$80
Total duration of interruptions	Level 1 – \$100 Level 2 – \$150 Level 3 – \$300
Streetlight repair	\$25
New connections	\$50 per day to a maximum of \$300
Response to written enquiries	\$50
Notice of planned interruptions	\$50

- (c) A DNSP may propose or the AER may require alternative payment amounts where:
- (1) the forecast number of payments is small and the DNSP or AER considers that a larger payment would provide a better incentive to meet the GSL targets, or
 - (2) the forecast number of payments is large and the DNSP or AER considers that a smaller payment would constrain the total forecast cost of GSL payments to a level that customers are prepared to pay.
- (d) A DNSP may propose or the AER may require additional payment amounts in conjunction with additional thresholds for any *parameter*. That is, the DNSP or AER may propose that a customer who experiences a level of service that exceeds a second threshold is paid a larger amount than a customer who experiences a level of service that exceeds the specified threshold.
- (e) Alternative payment amounts proposed under clause 6.3.3(c) and clause 6.3.3(d) should recognise the intent of GSL payments as outlined in clause 6.3.3(a).

6.4 Exclusions

- (a) Despite clause 6.3.2, GSL payments are not required to be made when the GSL threshold for the frequency of interruptions *parameter* or the duration of interruptions *parameter* or the total duration of interruptions *parameter* is exceeded as a result of any of the following events:
- (1) any day (midnight to midnight) where daily SAIDI for the electricity distribution network exceeds the *major event day* threshold as set out in appendix D, or
 - (2) load shedding due to a generation shortfall, or
 - (3) load interruptions caused by a failure of the shared transmission network, or
 - (4) load interruptions caused by a failure of transmission connection assets except where the interruptions were due to inadequate planning of transmission connections and the DNSP is responsible for transmission connection planning.

7 Information and reporting requirements

7.1 Information for annual compliance

- (a) A DNSP must report on its annual performance against the *parameters* applicable to it in accordance with any applicable *regulatory information instrument*.
- (b) A DNSP must provide details annually of each of the exclusions under clause 3.3, clause 5.3 and clause 6.4 that has applied in calculating the revenue increment or decrement or GSL payments made under the *scheme*.

7.2 Annual review

- (a) The AER will review the service standards information relevant to the *scheme* that a DNSP is required to provide annually under any applicable *regulatory information instrument*.
- (b) In undertaking the review referred to in clause 7.2(a), the AER may consider:
 - (1) the appropriateness and accuracy of the DNSP's data collection, reporting and recording processes and systems
 - (2) whether the performance data reported is consistent with the *parameter* definitions contained in appendix A and other elements contained in appendix C and the distribution determination, and
 - (3) whether the *financial incentive* proposed by the DNSP has been calculated in accordance with this *scheme*.
- (c) The AER will advise the DNSP of the outcome of any review conducted under clause 7.2(a).

7.3 Changes in data collection

- (a) A DNSP must notify the AER in writing as soon as it becomes aware of, or plans any material changes to data collection or recording methods used by the DNSP to record and report on the DNSP's performance against the DNSP's *parameters*.
- (b) Any notice provided to the AER under clause 7.3(a) must include an assessment of whether the changes to the data collection or recording methods no longer allow the DNSP to accurately record and report on the DNSP's performance against one of the *parameters* applicable to the DNSP.
- (c) The AER may amend this *scheme* as a result of the DNSP's new data collection methods.

Appendix A: Performance incentive scheme parameters—standard definitions

Reliability component

Parameter	Definition
SAIDI (System Average Interruption Duration Index)	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 (System Average Interruption Frequency Index)	The total number of sustained customer interruptions divided by the total number of distribution customers. SAIFI excludes momentary interruptions (one minute or less).
MAIFI (Momentary Average Interruption Frequency Index)	The total number of customer interruptions of one minute or less, divided by the total number of distribution customers.

Notes:

1. The number of distribution customers is calculated as the average of the number of customers at the beginning of the reporting period and the number of customers at the end of the reporting period.
2. Unmetered Street Lighting supplies are excluded. Other unmetered supplies can either be included or excluded from the calculation of reliability measures.
3. Inactive accounts are excluded.
4. In calculating MAIFI, each operation of an automatic reclose device is counted as a separate interruption. Sustained interruptions which occur when a recloser locks out after several attempts to reclose should be deleted from MAIFI calculations.

Network type	Definition
CBD feeder	a feeder supplying predominantly commercial, high-rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy when compared to urban areas.
urban feeder	a feeder, which is not a CBD feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3 MVA/km.
short rural feeder	a feeder which is not a CBD or urban feeder with a total feeder route length less than 200 km.
long rural feeder	a feeder which is not a CBD or urban feeder with a total feeder route length greater than 200 km.

Quality component

No *parameters* are defined.

Customer and GSL components

Parameter	Definition
Duration of interruptions	The duration of an unplanned interruption experienced by a customer.
Frequency of interruptions	The number of unplanned sustained interruptions experienced by a customer in a year.
New connections	The connection of electricity supply to a new customer's premises on or before the date agreed to with the customer. Note: Does not include re-energisation of existing premises.
Notice of planned interruptions	The delivery of notice to customers of a planned interruption on or before the threshold.
Response to written enquiries	The provision of a written response to a written enquiry on or before the defined threshold. Written enquiries and responses include email.
Streetlight repair	The repair of a public light within 2 business days of each fault report or a period otherwise agreed between the distributor and the person, if that person is the occupier of an immediately neighbouring residence or is the proprietor of an immediately neighbouring business.
Telephone answering	Calls to the fault line answered in 30 seconds where the time to answer a call is measured from when the call enters the telephone system of the call centre (including that time when it may be ringing unanswered by any response) and the caller speaks with a human operator, but excluding the time that the caller is connected to an automated interactive service that provides substantive information. This measure does not apply to: <ul style="list-style-type: none"> • calls to payment lines and automated interactive services; • calls abandoned by the customer within 30 seconds of the call being queued for response by a human operator. Where the time in which a telephone call is abandoned is not measured, then an estimate of the number of calls abandoned within 30 seconds will be determined by taking 20 per cent of all calls abandoned. <p>Note: Being placed in an automated queuing system does not constitute a response.</p>
Total duration of interruptions	The total duration of all unplanned interruptions experienced by a customer in a year.

Appendix B: Calculating incentive rates

Clauses 3.2.2 and 5.3.2 set out how *incentive rates* are to be determined for each component of the *scheme*.

Worked example

For the SAIFI *parameter*, assume that a DNSP has the attributes set out in the following table.

Attribute	Value
Start of regulatory period	2010
Type of feeder	urban
VCR	\$29,600 per MWh (\$2002)
Average annual energy consumption	7,000,000 MWh
Smoothed annual revenue requirement	\$300,000,000
SAIFI target – urban	1.150
SAIDI target – urban	70.0

The *incentive rate* is determined in accordance with clause 3.2.2(i) as follows.

- (1) determine the VCR at 2010 i.e. $29,600 \times (1 + \text{CPI}) =$ (say) \$34,000/MWh
- (2) determine the portion of VCR applicable to the SAIFI *parameter* for urban feeders from table 1, i.e. $34,000 / (1 + 0.97) = 17,258.88$
- (3) multiply by the average annual energy consumption (in MWh), divide by the smoothed annual revenue requirement (in \$), then divide by the number of minutes in a year i.e. $17,258.88 \times 7,000,000 / 300,000,000 / (365.25 \times 24 \times 60) = 0.0008$
- (4) multiply by SAIDI and divide by SAIFI i.e. $0.0008 \times 70.0 / 1.150 = 0.0466$
- (5) expressed as a percentage for each 0.01 interruptions away from the *performance target*, the *incentive rate* is $0.0466 \times 0.01 \times 100 / 1 = 0.0466\%$

Similarly, the *incentive rate* for *urban feeder SAIDI* in this example is:

$$(34,000 \times (1 - 1 / (1 + 0.97)) \times 7,000,000 / 300,000,000) / (365.25 \times 24 \times 60) \times 100 / 1 = 0.0743\%$$

Appendix C: Adjustments to allowed revenue

Calculating allowed revenue

Under the reliability, quality and customer service components of the *scheme*, a DNSP's annual revenue (through average prices for all customers) is increased (or decreased) based on changes in service performance from year to year. The *s-factor* applies only to *standard control services*.

NER clause 6.2.6 requires that the control mechanism for *standard control services* must be of the prospective CPI minus X form, or some incentive-based variant of the prospective CPI minus X form. The *s-factor*, expressed as a percentage change in revenue, is incorporated into the control mechanism in accordance with the *NER* and the DNSP's distribution determination.

The value of the *s-factor* for each year of a *regulatory control period* is calculated in accordance with this appendix C.

Applying the s-factor to the control mechanism

An *s-factor* must be added to the control mechanism such that allowed revenue is incremented when service performance is better than *performance targets* and decremented when service performance is worse than *performance targets*.

The calculation is of the general form:

$$(1+CPI)*(1+S_t) \dots \dots \dots (1)$$

where:

CPI is the consumer price index

S_t is the *s-factor* in the year the revenue change applies

The way the *s-factor* is incorporated into the control mechanism will be set out in the distribution determination.

The allowed revenue (and prices) are altered by the *s-factor* and continue at the altered level until the end of the *regulatory control period*. Hence a mechanism is required to reverse the revenue increment or decrement at an appropriate time, so that customers do not continue to pay for service improvements made in the past. Where the regulatory framework includes an efficiency carry over mechanism for opex efficiencies, it is appropriate for the distributor to retain rewards or penalties under the incentive mechanism for the carry over period.

The calculation is of the form:

$$S_t = \frac{(1 + S'_t)}{(1 + S'_{t-t'})} \dots \dots \dots (2)$$

In such cases, once revenue and/or prices are raised or lowered the change continues to apply until removed through the action of the $S'_{t-t'}$ term. Hence, by setting t' equal to six, this general form of the incentive allows that the change in any year can be retained for a full 5 year period.

The *s-factor* may cause volatility in prices when service performance varies about the target performance from year to year. A DNSP may delay the action of a price increment or decrement or a portion of the price increment or decrement for one year.

The calculation is of the form:

$$S'_t = \frac{(1 + S'_{t'})}{(1 + S'_{t-t'})} - Sb_t + Sb_{t-1} * (1 + \text{pretaxWACC}) \dots \dots \dots (3)$$

where:

Sb_t is the s-bank for the current year t

Sb_{t-1} is the s-bank for the previous year t-1

pretax WACC refers to the pretax value of the weighted average cost of capital for *standard control services*.

The service standards factor (s-factor)

The *s-factor* for each *parameter* is calculated by comparing a DNSP's performance against its *parameters* and the *performance targets* and *incentive rates* included in the DNSP's distribution determination within a calendar year.

The total *s-factor* is the sum of the *s-factors* for each *parameter*. The total *s-factor* result cannot exceed the percentage of *revenue at risk* specified in clause 2.4.

The calculation is of the form:

$$S'_t = \sum_p s_p * [(Tar_{p,t-1} - Act_{p,t-1}) - (Tar_{p,t-2} - Act_{p,t-2})] \dots \dots \dots (4)$$

where:

S' is the sum of the *s-factors* for all *parameters*

p is the performance *parameter*

s_p is the *incentive rate* for *parameter* p

Act_p is the actual performance for *parameter* p

Tar_p is the target performance for *parameter* p

t is the year in which the revenue change applies

The formulae applies where there is a 6-month gap between the year of service performance and the application of the *s-factor*, e.g. performance reported for a calendar year would apply from 1 July in the following year. If the end of the reporting year aligns with the date of application of the *s-factor*, then a 12-month gap is required before the *s-factor* can be applied and the ‘t’ terms in the formulae would be t-2 and t-3 respectively.

Worked example

Assume that the *scheme* for a DNSP consisted of the *parameters* SAIDI and SAIFI only, with actual service performance against *performance targets* as set out in the following table.

Parameter	s_p	SAIDI for year _{t-1}		SAIDI for year _{t-2}		GAP _{t-1}	GAP _{t-2}	s-factor = $s_p * (GAP - GAP)$ %
	%	Minutes		Minutes				
	(2)	Actual (3)	Target (4)	Actual (5)	Target (6)	(7)	(8)	
SAIDI								
- Urban	0.0743	65.0	70.0	72.4	70.0	5.0	-2.4	0.550
- Short rural	0.0516	135.0	140.0	132.0	140.0	5.0	8.0	-0.155
SAIFI								
- Urban	0.0466	0.991	1.150	1.160	1.150	0.159	-0.010	0.788
- Short rural	0.0436	1.730	1.800	1.820	1.800	0.070	-0.020	0.392
All								1.575

The *s-factor* for each *parameter* segment is calculated from the *s-factor* formula by:

- (1) determining actual performance for each of the *parameter* segments – columns 3 and 5
- (2) calculating the performance gap (target less actual performance) in each year as shown in columns 7 and 8
- (3) calculating the performance gap in the year t-2 less the performance gap in the year t-1 and multiplying by the *incentive rate* for the *parameter* segment

The total *s-factor* is the sum of the *s-factors* for each *parameter* segment, which in this example is 1.575% of revenue.

Appendix D: Major Event Days

A *major event day* is defined in the Institute of Electrical and Electronics Engineers (IEEE) standard 1366-2003, IEEE Guide for Electric Power Distribution Reliability Indices. This standard was published in May 2004. The IEEE standard excludes natural events which are more than 2.5 standard deviations greater than the mean of the log normal distribution of five years' SAIDI data (the '2.5 beta method').

The steps used in the 2.5 beta method for establishing the *major event day* boundary are as follows:

- (1) Collect values of daily SAIDI over five sequential years ending on the last day of the last complete reporting period. If fewer than five years of historical data are available, the most recent data should be used, noting that the five-year information is not available.
- (2) SAIDI figures related to events that were considered to be extreme in the past should be excluded from the data set.
- (3) Only those days where a SAIDI/day value > 0 are considered (do not include days that did not have any interruptions).
- (4) Calculate the natural logarithm (\ln) of each daily SAIDI value in the data set.
- (5) Find α (alpha), the average of the logarithms of the data set.
- (6) Find β (beta), the standard deviation of the logarithms of the data set.
- (7) The boundary for an extreme event or *major event day* (T_{MED}) is then calculated as follows:

$$T_{MED} = e(\alpha + 2.5 \beta)$$

- (8) Any day in the new reporting period where the total SAIDI exceeds this value of T_{MED} is classified as a *major event day*.

Where extreme events have not been identified before, it is not clear from the IEEE standard how these would be excluded from historical data (step 2 above). In such cases, an initial T_{MED} boundary is established based on the unadjusted daily SAIDI data for the five-year period prior to the reporting period being assessed. Any events for which the daily SAIDI (or the consecutive daily SAIDI for a single event) exceeds this boundary are then excluded from the unadjusted data and a final T_{MED} calculated. This final T_{MED} is the figure that would be used to identify *major event days* that may be excluded when calculating the revenue increment or decrement under the *scheme*.

Glossary

This *scheme* uses the following definitions.

annual revenue requirement	has the meaning set out in the <i>National Electricity Rules</i> .
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 <i>National Electricity Rules</i> .
distribution network service provider	has the meaning set out in the <i>National Electricity Rules</i> .
jurisdictional electricity legislation	has the meaning set out in the <i>National Electricity Law</i> .
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	has the meaning set out in appendix A.
major event day	has the meaning set out in appendix D.
national electricity legislation	has the meaning set out in the <i>National Electricity Law</i> .
national electricity market	has the meaning set out in the <i>National Electricity Law</i> .

National Electricity Rules or NER	the rules as defined in the <i>National Electricity Law</i> .
network type	the type of network supplying customers being either CBD, urban, short rural or long rural feeders as defined in appendix A.
parameters	the performance measures defined in appendix A.
performance target	the level of performance that results in a DNSP neither receiving a financial penalty nor financial reward in the <i>regulatory year</i> .
planned interruption	an <i>interruption</i> due to a planned event.
regulatory control period	has the meaning set out in the <i>National Electricity Rules</i> .
regulatory proposal	has the meaning set out in the <i>National Electricity Rules</i> .
revenue at risk	the amount by which a DNSP's revenue may increase or decrease as a result of the application of the <i>scheme</i> .
SAIDI	has the meaning set out in appendix A.
SAIFI	has the meaning set out in appendix A.
scheme	<i>service target performance incentive scheme</i> .
service target performance incentive scheme	the <i>service target performance incentive scheme</i> defined in the <i>National Electricity Rules</i> .
s-factor or service standards factor	the percentage revenue increment or decrement that applies in each <i>regulatory year</i> .
unplanned interruption	an <i>interruption</i> due to an unplanned event.