Explanatory statement

Proposed amendment

Service target performance incentive scheme

Electricity distribution network service providers

February 2009

AUSTRALIAN ENERGY REGULATOR

Request for submissions

Interested parties are invited to make written submissions to the Australian Energy Regulator (AER) on the amendments proposed in this paper by the close of business 19 March 2009.

Submissions can be sent electronically to: aerinquiry@aer.gov.au

Alternatively, submissions can be sent to:

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Network Regulation South
Australian Energy Regulator
GPO Box 520
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The AER prefers that all submissions be publicly available to facilitate an informed and transparent consultative process. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information are requested to:

- clearly identify the information that is the subject of the confidentiality claim, and
- provide a non-confidential version of the submission in a form suitable for publication.

All non-confidential submissions will be placed on the AER's website at http://www.aer.gov.au. For further information regarding the AER's use and disclosure of information provided to it, see the *ACCC/AER Information Policy*, October 2008 also available on the AER's website.

Enquiries about this paper, or about lodging submissions, should be directed to the Network Regulation South branch of the AER on (03) 9290 1436.

Contents

1 Introduction

The Australian Energy Regulator (AER) is responsible for the economic regulation of distribution network service providers (DNSPs) in the National Electricity Market (NEM), 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/scheme) for DNSPs. On 26 June 2008 the AER published the first version (version 1.0) of the STPIS for DNSPs. Since releasing the STPIS the AER has become aware of a material issue regarding the interaction between the cap on revenue at risk and the equation for the calculation of the s-factor. The AER now seeks to remedy this issue through an amendment to the scheme. The AER has also sought to make several other amendments to provide further clarity on the operation of the scheme. This explanatory statement sets out these amendments to version 1.0 of the STPIS and satisfies the AER's obligations under clause 6.16(b)(2) of the NER.

The AER is seeking to amend specific aspects of the STPIS to remove potentially unintended consequences and to improve transparency in the operation of the scheme. The key changes to the scheme include:

- Amended s-factor calculation: The AER proposes to amend the method by which the s-factor is calculated. The s-factor calculation in version 1.0 of the STPIS was computed primarily on *changes* in performance from one year to the next (rather than on performance relative to the target). The s-factor was also applied cumulatively — that is, the allowed revenues (and prices) were altered by the s-factor and continued at the altered level until the end of the regulatory control period. The AER has altered the s-factor equation so that a DNSP's target is now computed primarily on the basis of deviations in performance from the underlying targets.

- Amended cap on revenue at risk: The AER also proposes to increase the amount of revenue at risk under the scheme from ±3 per cent to ±5 per cent. This amendment is designed to counter the decrease in the power of the incentive that occurs under some circumstances due to the amended s-factor formula.

- Amended major event day calculation: The AER proposes to amend how it calculates the major event day threshold which applies to events excluded from the scheme.

The proposed amendments and clarifications are discussed in detail at section 5 of this explanatory statement.

When developing version 1.0 of the STPIS the AER had regard to the NER requirements as set out in the accompanying Final Decision to version 1.0 of the STPIS.[1] The AER has also had regard to these requirements when developing the proposed amendments set out in this explanatory statement. Further, the AER

[1] AER, *Electricity distribution network service providers Service target performance incentive scheme*, Final decision, June 2008, appendix B.

considers that the proposed amendments are consistent with the AER's stated objectives for the scheme, as set out at clause 1.5 of the scheme.

The AER also notes clause 11.16.5 of the NER sets out transitional matters particular to the Queensland DNSPs, Ergon Energy and Energex. As appropriate, the AER will take into account and consider these transitional matters at the time it applies this scheme in making Ergon Energy and Energex's 2010–15 distribution determinations in accordance with clauses 2.2 and 2.6(a) of the scheme.

Version 1.0 of the scheme has not been implemented by a DNSP in any revenue proposals. The amended scheme (version 1.1) will be finalised in time for the South Australian and Queensland DNSPs to prepare their revenue proposals for submission by 31 May 2008.

While the proposed amendments do not fundamentally alter the overall operation of the STPIS, the changes concerned will result in some material adjustments to the way the s-factor is determined. Interested parties are invited to make written submissions on the specific areas of the scheme proposed for amendment.

Pursuant to clause 6.6.2(b)(1) of the NER the AER will consult with the authorities responsible for the administration of relevant jurisdictional electricity legislation in developing and implementing its STPIS.

2 Background

The AER published version 1.0 of the STPIS for DNSPs in June 2008 following public consultation which began in November 2007 with the release of an issues paper. A proposed scheme was published in April 2008 and finalised in June 2008. The scheme was developed following consultation with jurisdictional regulators and industry stakeholders in accordance with clause 6.6.2(b)(1) and rule 6.16 of the NER.

This scheme is part of the suite of regulatory requirements designed to streamline and improve the quality of economic regulation of energy networks, reduce regulatory costs and enhance regulatory certainty, consistent with the Council of Australian Government's objectives. While the regulatory regime as a whole encourages a business to improve its operating and capital efficiency, the STPIS is designed to ensure that this increase in efficiency is not at the expense of a deterioration in service performance for customers. Further, the STPIS is designed to encourage a business to improve its service performance where customers are willing to pay for these improvements. The AER considers that in so doing the STPIS plays an important part in balancing the incentives on regulated businesses to ensure outcomes are consistent with the national electricity objective in section 7 of the NEL, in terms of efficient price and non-price outcomes for the long-term benefit of users.

3 Rule requirements

Clause 6.6.2 of the NER requires the AER to develop and publish a STPIS and sets out the requirements the AER must comply with in doing so.

When amending the STPIS, the distribution consultation procedures, as set out in rule 6.16 of the NER, require the AER to publish a proposed STPIS, explanatory statement and invitation for submissions. Stakeholders must be allowed at least 30 business days to make submissions to the AER. Within 80 business days of publishing the proposed STPIS the AER must publish its final decision and STPIS. As already noted, the AER is required by the NER to consult on the proposed STPIS with authorities responsible for the administration of relevant jurisdictional electricity legislation.

In addition to the specific rules for the scheme set out at clause 6.6.2 of the NER, the scheme has been designed to be consistent with the building block proposal requirements as set out in clause S6.1.3 of the NER.

4 Basis and design of the scheme

As noted in the Final decision to version 1.0 of the STPIS, the rationale for the scheme is to balance the incentive to reduce expenditure with the need to maintain and improve service performance for customers. This can be achieved through the provision of non-financial incentives such as monitoring and publicly reporting against specified service standards, or through financial incentives such as rewards and penalties based on the service outcomes delivered. As noted previously, DNSP service standards are currently set by jurisdictional governments and regulators through jurisdictional electricity legislation.[2]

The STPIS, through the s-factor component, provides a financial incentive for DNSPs to maintain and improve service performance on average by assigning rewards or penalties to a DNSP where performance is either better or worse than the targeted performance.

The STPIS also contains a guaranteed service levels (GSLs) component which is designed to improve service to customers receiving poor performance and act as a recognition payment to customers that have received poor performance.

The following provides an outline of the key design features of the s-factor and GSL components of the revised scheme. The differences in the revised scheme compared to the current scheme are discussed in detail in section five of this paper.

4.1 S-factor component

- The s-factor component is symmetrical as penalties are incurred at the same rate as rewards. This symmetry provides the incentive for a DNSP to maintain and improve service performance.

- The s-factor is determined primarily on the basis of deviations in performance from underlying performance targets. A DNSP's targets are established at the commencement of the regulatory control period.

- The scheme provides incentives for a DNSP to make sustained improvements in service performance because a DNSP delivering sustained improvements above target performance will continue to receive financial rewards from the scheme until the end of the regulatory control period. The DNSP will stop receiving financial rewards as soon as actual performance reverts back to the target performance.

- 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.

- Performance targets are to be based on the average performance over the past five years adjusted for any planned reliability improvements and having regard to any

[2] The AER will publicly report on the service performance of DNSPs in the future. The AER is consulting separately with DNSPs and other stakeholders on the reporting measures through consultation on the AER's future annual reporting arrangements for DNSPs.

instance where the cap on revenue at risk has been breached in the previous regulatory period.

- Incentive rates for reliability parameters are based on a customer's willingness to pay for service improvements.

- There is an overall cap on the revenue at risk in the scheme of 5 per cent. There is a 1 per cent cap on the customer service component of the scheme and a 0.5 per cent cap on any individual customer service parameter.

- 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, the scheme identifies a list of events outside the control of the DNSP that may be excluded from the scheme.

- Application of the s-factor or a portion of the s-factor can be delayed in any one year, for up to one additional year to smooth the impact on customer prices (s-bank).

4.2 GSL component

- The GSL component has a role in both improving service to customers receiving poor performance and providing recognition to customers, though an appropriate payment, that have received poor performance.

- The expected volume of GSL payments is estimated using current performance and is included in the annual revenue requirement set in the distribution determination made by the AER.

- GSL parameters, thresholds and payment amounts in the STPIS have been based on existing jurisdictional arrangements.

- Payments are required to be made to customers automatically as opposed to on application from the customer.

- The GSL component applies different thresholds of performance to different parts of the network for the frequency and duration of interruptions parameters.

- The GSL component uses the same exclusion criteria that apply to the s-factor component.

- The GSL component of the AER's STPIS will not be applied where a DNSP is already subject to a jurisdictional GSL scheme.

5 Proposed amendments

This section sets out the AER's proposed amendments to version 1.0 of the distribution STPIS. The majority of the amendments are contained within appendix C to the scheme, however the AER has also made changes in other appendices and the body of the scheme.

5.1 Adjustments to allowed revenue

The following amendments and clarifications apply to appendix C of the STPIS. The headings below mirror the headings of the sections in appendix C of the STPIS where amendments have been made.

5.1.1 Applying the s-factor to the control mechanism

Version 1.0 of the scheme provided a general outline of the way the s-factor is incorporated into the control mechanism for a DNSP.[3] In appendix C of the proposed scheme, the AER has provided greater detail of how the s-factor is incorporated into the various forms of control currently applied to standard control services.

A control mechanism specifies how a DNSP's allowed revenue (or prices) can evolve throughout the regulatory control period. In general, the allowed revenue (or prices) is adjusted annually for the change in the consumer price index (CPI) and the X-factor.[4] The s-factor is incorporated into the general form of a control mechanism as another multiplier alongside the CPI minus X adjustment.

5.1.2 Removing the effect of the s-factor

Version 1.0 of the scheme was based around two key features: First, the s-factor was computed primarily on *changes* in performance from one year to the next (rather than on performance relative to target); and second, the s-factor was applied cumulatively — that is, the allowed revenues (and prices) were altered by the s-factor and continued at the altered level until the end of the regulatory control period. Furthermore, it was proposed to limit the revenue at risk by imposing a cap on the s-factor of ±3 per cent. This cap on the s-factor essentially imposed a cap on the *rate of change* of revenue or prices.

However, after further consideration the AER considers that version 1.0 of this scheme did not fully achieve the original objectives. For example, the operation of the cap in combination with the calculation of the s-factor gave rise to some undesirable incentives and opportunities for strategic behaviour. For example, a DNSP that had experienced deterioration in performance in one year, so that the cap of 3 per cent on the change in revenue was binding, would have had a perverse incentive to further worsen service performance. This incentive arose from the fact that any further deterioration in performance in the current year would not be penalised, but would lower the performance standard required in the future (since the s-factor was based

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3 AER, *Electricity distribution network service providers Service target performance incentive scheme*, Final decision, June 2008, p 25.

4 The consumer price index represents the annual percentage change in inflation. The X-factor is a smoothing factor. The post-tax revenue model illustrates this adjustment.

primarily on changes in performance) — allowing the DNSP to be further rewarded in subsequent years for 'improvements' in its performance.

In addition, the primary reliance on rewarding changes in performance gave rise to a potential problem of 'double-dipping' across regulatory control periods. A situation might arise where a DNSP was funded in its distribution determination for the investments necessary to improve service performance. This would normally result in an increase in the service performance targets in the subsequent regulatory period. However, version 1.0 of the scheme primarily rewarded or penalized DNSPs on the basis of a *change* in performance. A DNSP which was provided additional funding to improve its service performance would then be also rewarded through the performance incentive scheme for an apparent improvement in performance. In effect, the DNSP would be rewarded twice for the same improvement in service.

For these reasons the AER considers that the scheme should be modified to make it simpler and more closely aligned to the original objectives. Under the revised scheme the s-factor is computed primarily on the basis of deviations in performance from the underlying targets. In addition, the cap on revenue at risk limits the extent to which revenues or prices can depart from underlying 'baseline' level (rather than the rate of change of revenues or prices from one year to the next).

Within each regulatory period, provided the cap on revenue at risk is not binding, these changes have no effect on the operation of the scheme. For example, a one-off deterioration in performance under version 1.0 of the scheme would result in a one-off decline in revenue/prices followed by a return to the original revenue/prices. The same outcome would arise under the revised scheme. Similarly, under the existing scheme, a permanent improvement in service quality would be rewarded with revenues which persistently exceeded the baseline level during the regulatory period. The same is true under the revised scheme.

Different outcomes can occur between the two schemes, however, when the cap on revenue at risk is binding. For example, under the original scheme significant under-performance in one year might result in the cap binding, limiting the change in revenue/prices to, say, -3 per cent. In the subsequent year, a further drop in performance would result in revenue/prices further declining by a maximum of another 3 per cent, for a total of a 6 per cent drop from "baseline" revenue. In contrast, return in performance to target or baseline levels would result in a maximum 3 per cent increase in revenue, at best returning revenues/prices to baseline. Even if the firm exceeded its performance targets in the subsequent period it could not receive a financial reward relative to its baseline level of revenue.

Let's suppose that under the revised scheme the cap is also set at 3 per cent. In the year following substantial under-performance, if performance deteriorates even further, there is no additional penalty (the firm's revenues/prices remain at 3 per cent below baseline). On the other hand, if the firm's performance subsequently exceeds the targets, the 3 per cent penalty could be eliminated and changed into a reward. In fact, if the firm exceeded its targets in the following period it could receive a reward of up to 3 percent in excess of its baseline level (a swing in revenue of 6 per cent year-on-year).

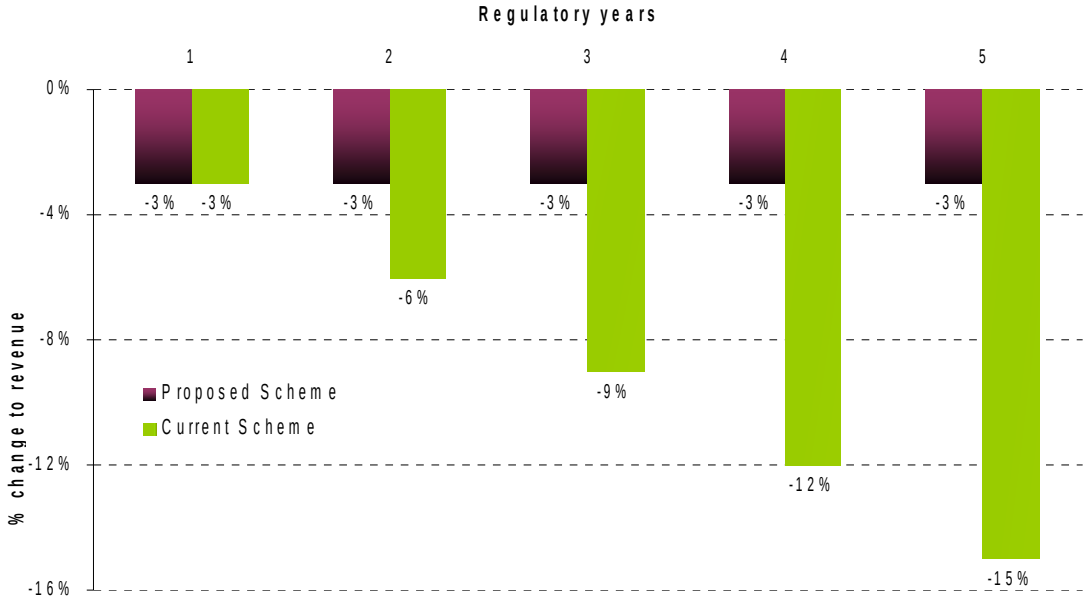
These changes in the application of the cap have some implications for the overall power of the incentive to maintain or improve service performance. By changing the

cap to apply to the *level* of performance rather than the rate of change of performance the revised scheme in some respects reduces the incentive to prevent some particular forms of poor performance (and, at the same time, reduces the incentive to pursue some forms of high performance). On the other hand, there are some circumstances where the revised scheme would lead to greater incentives for improving performance.

This is illustrated in Figure 1 below. Under version 1.0 of the scheme there was a theoretical possibility that a DNSP might substantially worsen its service performance in each year of the regulatory control period. This could lead to a theoretical penalty of 15 per cent in the final year of the period. In contrast, under the revised scheme, the DNSP would be subject to a maximum penalty of 3 per cent in each year.

The AER notes that this is a theoretical example, and that it is highly unlikely that a DNSP's performance would either increase or decrease to such an extent over the regulatory control period, however the example is useful in demonstrating how the amended scheme operates.

Figure 1 — Effect of the removal of the carry forward mechanism



Source: AER analysis

The AER recognises that the removal of the carry forward can result in less financial incentives as demonstrated in figure 1. To address this, the AER proposes to increase the cap on revenue at risk at clause 2.5(a) of the scheme from 3 per cent to 5 per cent. This proposed amendment is not designed to materially change the amount of revenue at risk over the regulatory control period, but rather is included in an effort to offset the possible decrease in the power of the incentive which results from the removal of the carry forward mechanism.

The AER considers that with the increased limit on revenue at risk, the removal of the carry forward mechanism neither leads to an inconsistency between the STPIS and the EBSS, nor does it reduce the effectiveness of either scheme.

To give effect to this proposed amendment, an alteration to the mechanism to reverse the revenue increment or decrement is required. The denominator of the equation has been modified to reflect the sum of the total s-factors determined in the previous regulatory year. The amended equation (2) below has been included in appendix C of the proposed scheme.

$$S_t = \frac{(1+S_t^{'})}{(1+S_{t-1}^{'})} - 1 \quad \text{..... (2)}$$

where:

$S_t^{'}$ is calculated as set out in equation (4) below

S_{t-1}' is the sum of the total s-factors for all parameters for year t–1 (the previous regulatory year).

The amended equation (2) is not required to be used when determining the s-factor for the first regulatory year of a regulatory control period. This is because the s-factor from the last regulatory year of the previous regulatory control period is removed through the distribution determination process. Hence, for the first regulatory year of a regulatory control period the value of the term $S_{t-1}^{'}$ in equation (2) is defined to be zero, thus $S_t = S_t^{'}$.

5.1.3 The operation of the s-bank mechanism

The s-bank is a revenue smoothing mechanism which allows a DNSP to delay the revenue increment or decrement, or a portion of the revenue increment or decrement, for one regulatory year. The AER proposes to remove the (1 + pretax WACC) term from the s-bank equation.

This term was included in version 1.0 of the scheme to account for the time value of money so that a DNSP is indifferent between delaying a reward or penalty, and incurring that reward or penalty immediately. However, in order to achieve this indifference, the s-bank mechanism would also have to be adjusted by the X factor in addition to the pre tax weighted average cost of capital (WACC).[5] For example, if the X factor was negative, the DNSP would benefit from delaying any reward as the s-factor would be applied to a larger revenue in the next regulatory year.[6] Conversely, if the X factor is positive, a DNSP would have an incentive to take any benefits immediately. The AER considers that the inclusion of the X factor terms into equation (3) would add unnecessary complexity to this calculation.

A DNSP's smoothed revenue profile (calculated in the post-tax revenue model) is adjusted annually for CPI and the X factor, which generally results in revenue being higher in a subsequent regulatory year, compared to the previous regulatory year. Given that the delayed s-factor or portion of the s-factor will be applied to a higher

[5] The s-bank mechanism would also have to be adjusted by other factors which may adjust revenue (or prices) from year to year.
[6] In general a DNSPs smoothed revenue requirement increases over the regulatory control period.

revenue in a subsequent regulatory year, any incentive a DNSP may have to delay taking a penalty, or immediately taking a reward is diminished. Therefore, in the interest of simplicity, the AER considers it is unnecessary to provide a DNSP further compensation through the s-bank mechanism for the time value of money. On that basis, the AER considers it appropriate to remove the WACC term from equation (3).

A further change is also necessary to the s-bank mechanism to incorporate changes made to equation (2). The amended formula for the calculation of the s-bank mechanism becomes:

$$S'_t = (S''_t - Sb_t) + Sb_{t-1} \quad \text{..... (3)}$$

where:

S''_t is the sum of the s-factor for all parameters for year t, before banking, as determined in equation (4)

Sb_t is the s-bank for the current regulatory year t

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

5.1.4 Revenue at risk

The revised STPIS places an overall notional ±5 per cent cap on revenue at risk under the s-factor components of the scheme, with sub limits on revenue at risk on the customer service parameters of 0.5 per cent on any one customer parameter, with a total of 1 per cent at risk on all customer service parameters.

The AER proposes to add two equations to the scheme to clarify the operation of the cap on revenue at risk. To ensure that the s-factor applied to revenues does not exceed the cap, a lower and an upper limit are placed on the sum of the s-factors for all parameters (S'''_t), which is calculated in accordance with the proposed equation (5) in appendix C.

The following equations (4A) and (4B) have been added to appendix C to place limits on the sum of the s-factors for all parameters:

$$S''_t = \min(\max(S_t^{ROS} + S_t'^{CS}, \underline{S}), \overline{S}) \quad \text{..... (4A)}$$

where:

$\underline{S}$ is the lower limit of the overall revenue at risk as set out in clause 2.5

$\overline{S}$ is the upper limit of the overall revenue at risk as set out in clause 2.5

S_t^{ROS} is the sum of the raw s-factors for the reliability of supply parameters, as determined in equation (5A)

and:

$$S_t'^{CS} = \min(\max(S_t^{CS}, \underline{S}^{CS}), \overline{S}^{CS}) \quad \text{..... (4B)}$$

where:

$\underline{S}^{CS}$ is the lower limit of the revenue at risk for customer service parameters as set out in clause 5.2(a)

$\overline{S}^{CS}$ is the upper limit of the revenue at risk for customer service parameters as set out in clause 5.2(a)

S_t^{CS} is the sum of the raw s-factors for customer service parameters, as determined in equation (5B).

If the sum of the s-factors for all parameters (S_t''') is within the cap (i.e. between the lower and upper limit) then $S_t''' = S_t''$.

5.1.5 The service standard factor — s-factor formula

In its submission on the AER's Preliminary positions on its framework and approach paper for ETSA Utilities, ETSA Utilities raised concerns regarding potentially perverse incentives that occur when the cap on revenue at risk is breached.[7] In its Final framework and approach paper for ETSA Utilities, the AER stated that it was investigating ETSA Utilities' concerns, which raised a potential formulaic error in the STPIS.[8]

After detailed analysis the AER considers that the incentive properties of the s-factor formula (equation (3) of version 1.0) did not operate as intended in instances where the revenue at risk cap is breached and may have provided perverse incentives to a DNSP in such circumstances.

The AER has therefore amended the s-factor formula to address this issue while retaining the key features of the scheme. The revised method of calculating the annual revenue increment or decrement (labelled equation ((5A) and (5B)) in the amended scheme) is based on the difference between a DNSP's target performance on each parameter and the actual performance on that parameter. Under this formula, the revenue increment or decrement applies for one regulatory year.

This formula provides incentives for a DNSP to make sustained improvements in service performance because the DNSP will continue to receive financial rewards from the scheme until the end of the regulatory control period. The DNSP will stop receiving financial rewards as soon as actual performance reverts back to the target performance.

The proposed equations for calculating the sum of the raw *s-factors* are as follows:

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7 ETSA Utilities, *Submission to the AER's Preliminary positions Framework and approach paper*, August 2008.

8 AER, *Final Framework and approach paper, ETSA Utilities 2010-2015*, November 2008, p. 72.

$$S_t^{ROS} = \sum_p ir_p * [Tar_{p,t-1} - Act_{p,t-1}] \quad \text{.. (5A)}$$

where:

S_t^{ROS} is the sum of the raw *s-factors* for all reliability of service(ROS) *parameters*

p is the reliability of service performance *parameter*

ir_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 *regulatory year t*, and *t*–1 is the year in which the performance *parameter* is measured.

$$S_t^{CS} = \sum_p \min(\max(ir_p * [Tar_{p,t-1} - Act_{p,t-1}], \underline{S}^{ICS}), \overline{S}^{ICS}) \quad \text{........................ (5B)}$$

where:

S_t^{CS} is the sum of the raw s-factors for all customer service parameters

p is the customer service performance parameter

ir_p, Act_p, Tar_p have the same definition as above

$\underline{S}^{ICS}$ is the lower limit of the revenue at risk for individual customer service parameters as set out in clause 5.2(b)

$\overline{S}^{ICS}$ is the upper limit of the revenue at risk for individual customer service parameters as set out in clause 5.2(b).

Equations (5A) and (5B) apply where there is a 12-month gap between the year of service performance and the application of the *s-factor*, e.g. if the end of the reporting period (usually a financial year) aligns with the start of a *regulatory year*.

If the end of the reporting period does not align with the start of a regulatory year, e.g. if the end of the reporting period is June 30 whereas the start of the regulatory year is 1 January, then there is less than a 12-month gap (in this example, a 6-month gap) between the end of the reporting period and the date of the application of the s-factor. In this instance, the t–1 terms in equations (5A) and (5B) should be replaced with t, where t is the regulatory year in which end of the reporting period occurs.

5.1.6 Overlap between regulatory control periods

The AER has amended the description of X_0 as applied in equation (6) in appendix C of the scheme so that it more generally reflects X_0 given the different control mechanisms that may be applied to DNSPs under clause 6.2.5(b)of the NER.

The AER has also specified that the value of X_0 is taken from the post-tax revenue model applicable in the next regulatory control period. X_0 is defined in the amended scheme as follows:

> X_0 is the percentage change between the *annual revenue requirement* in the last *regulatory year* of the previous *regulatory control period* and the *annual revenue requirement* for first *regulatory year* of the next *regulatory control period* taken from the post-tax revenue model. This is illustrated above in equations (1A), (1B) and (1C).

Equation (6) has the affect of replacing the term S_t used in equations (1A), (1B) and (1C) with $S_t^{'''}$ in the first and second regulatory years in the next regulatory control period.

5.1.7 Timing and equation notation

The AER has also provided greater detail of how the timing of performance measurement relates to when the s-factor is applied to revenues (or prices). If the period over which performance is measured is aligned with the regulatory year, t–1 is the regulatory year in which performance is measured and the revenue increment or decrement applies in the regulatory year t+1. Alternatively, if the period over which performance is measured does not align with the regulatory year, the t–1 terms in equation (5A) and (5B) in the proposed STPIS are replaced with t terms, where t is the regulatory year in which the end of the measurement period occurs. This clarification applies to all the time subscripts in appendix C.

5.2 Major event day definition

The following section sets out the AER's proposed amendments to appendix D of the scheme, which relates to the calculation and implementation of the major event day boundary.

5.2.1 Steps for establishing the major event day boundary

The AER proposes to delete step 2 from the methodology for establishing the major event day boundary in appendix D of the STPIS. This step was included by the AER in version 1.0 of the scheme to provide that a DNSP's unplanned SAIDI data was as close to log normal as possible.

This step is not included in the exclusion mechanism as published by the US Institute of Electrical and Electronics Engineers (IEEE) standard 1366–2003, and the AER now considers that removing only the large outliers may not be accurate. The AER proposes to remove this step from the STPIS to align the steps with the IEEE standard and to improve the accuracy of the major event day boundary.

5.2.2 Frequency of calculating the major event day boundary

Version 1.0 of the scheme specified that the major event day boundary is established at the commencement of the regulatory control period and this boundary applies for the duration of the regulatory control period.[9]

The IEEE standard specifies that the major event day boundary is calculated at the end of each reporting period — i.e. after each regulatory year.[10] After further consideration, the AER considers that updating the major event day boundary on an annual basis will result in a boundary that is more accurate and better reflects the effects of recent changes in reliability practices and operating conditions. On that basis, the AER proposes to amend appendix D of the scheme to reflect that the major event day boundary will be calculated annually using the last five years SAIDI data consistent with the IEEE standard.

5.2.3 Application of the IEEE exclusion

In the revised STPIS the AER has also clarified how it will apply the IEEE standard's exclusion framework. The AER adopted the IEEE standard 1366–2003 in the STPIS as the quantitative approach for excluding the duration of an unplanned system outage which exceeds a particular threshold from specific components of the scheme under clauses 3.3(a)(1) and 6.4(a)(1).

Appendix D of the scheme provides that if the unplanned system average interruption duration index exceeds the calculated boundary, the period is deemed a major event day and is excluded from the calculation of the revenue increment or decrement under the scheme.

For the avoidance of doubt, the AER has clarified in appendix D that it will exclude the entire duration of those outages originating within the midnight to midnight period of a major event day.

The AER considers that this approach to implementing the IEEE exclusion is consistent with both the intent of the IEEE exclusion, and its practical application by other regulators.[11] This approach also provides DNSPs with an appropriate level of certainty surrounding their financial exposure following a major event, such as a severe storm.

The AER has inserted the following proposed text in appendix D:

> Any day where *unplanned SAIDI* exceeds the *major event day* boundary may be excluded when calculating the values of the *parameters* for the purpose of calculating the revenue increment or decrement resulting from this *scheme*.
>
> Where an interruption on a *major event day* spans multiple days, the entire length of the interruption is excluded when calculating the values of the

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9 AER, *Electricity distribution network service providers Service target performance incentive scheme*, version 1.0, June 2008, p 30.

10 IEEE, *IEEE Guide for Electric Power Distribution Reliability Indices (IEEE Standard 1366–2003)*, 10 December 2003, p. 8.

11 See, for example: IPART, *Design, Reliability and Performance, Licence Conditions Distribution Network Service Providers*, 1 December 2007, p. 27.

parameters for the purpose of calculating the revenue increment or decrement resulting from this *scheme*.

5.3 The value of customer reliability

The value of customer reliability (VCR) figure is one of the inputs used to calculate incentive rates for the unplanned SAIDI and unplanned SAIFI reliability of supply parameters in the STPIS. The current VCR values, as set out in clause 3.2.2(b) of the scheme are based on a study conducted by Charles River Associates (CRA) for VENCorp in 2002.[12]

In 2007 CRA undertook a new VCR study on behalf of VENCorp. This 2007 study (released in 2008) followed a similar approach to the 2002 study. Two areas that VENCorp identified as having been revised since the 2002 study are:

- the increased representation of industrial and commercial sectors, which VENCorp considers were under-represented in the 2002 study, and
- the inclusion of 'social disruption costs' which represent the impact of severe outages on essential services such as emergency services, healthcare, transport water and sewerage.[13]

In its Final decision on version 1.0 of the STPIS, the AER stated that the VCR figures were based on the most recent documented and robust work on reliability incentive rates.[14] Given the release of this new VCR study, the AER proposes to update the VCR figures contained in its STPIS to reflect the outcomes of this study. The revised figures are:

- $95 700/MWh for CBD segments, and
- $47 850/MWh for all other parameter segments.

This amendment is consistent with the AER's approach to VCR in version 1.0 of the scheme. Importantly, DNSPs still have the option of proposing an alternative VCR to the AER in their regulatory proposals pursuant to clause 3.2.2(d). In making this amendment, the AER considers that the consequential benefits to consumers from this amendment are sufficient to warrant any reward or penalty provided under this scheme.[15]

Consistent with the AER's approach in version 1.0 of the scheme, the proposed VCR value must be escalated from the September 2008 quarter to the start of the regulatory control period. Clause 3.2.2(b) of the scheme has been amended to reflect this change. The CPI used to escalate the VCR to the start of the regulatory control period is the CPI used to roll forward a DNSP's asset base in the roll forward model.

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12 CRA, *Assessment of the Value of Customer Reliability (VCR)*, December 2002.

13 VENCorp, The value of customer reliability used by VENCorp for electricity transmission planning, Consultation paper, 5 September 2008, p 1.

14 AER, *Electricity distribution network service providers Service target performance incentive scheme*, Final decision, June 2008, p 17.

15 Clause 6.6.2(b)(3)(i).

5.4 Other amendments and clarifications

This section sets out other amendments and clarifications made to the scheme. The primary purpose of these adjustments is to clarify the intent or operation of the scheme.

5.4.1 Calculating incentive rates

Average annual energy consumption

The AER has amended clauses 3.2.2(h)(1) and 3.2.2(i)(1) and appendix B of the scheme to reflect the intent of the scheme that the average annual energy consumption input used to calculate incentive rates for the reliability of supply parameters should be an input according to network type.[16]

The annual revenue requirement

The AER has amended clauses 3.2.2(h)(2) and 3.2.2(i)(2) and appendix B of the scheme to correct an inconsistency with respect to the revenue input used to calculate incentive rates for the reliability of supply parameters. The average of the smoothed annual revenue requirement for the regulatory control period determined by the AER in the relevant distribution determination (taken from the post-tax revenue model) is to be used to calculate incentive rates for the reliability of supply parameters.

Other amendments to calculating incentive rates

The AER has amended clause 3.2.2(i)(4) of the scheme so that the average of the annual unplanned SAIDI and SAIFI performance targets be used as inputs for calculating incentive rates for any applicable unplanned SAIFI parameters.

This amendment results in incentive rates for unplanned SAIFI parameters that are constant over the regulatory control period (i.e. incentive rates are only required to be calculated once for each applicable SAIFI parameter, rather than for each regulatory year of the regulatory control period).[17] Constant incentive rates provide DNSPs with a continuous incentive to maintain and improve service performance throughout the regulatory control period which is consistent with the incentive rates for all other parameters in the scheme. Further, a DNSP will have a constant incentive rate over the regulatory control period irrespective of whether its performance targets are constant or variable.

The AER has also amended clause 5.3.2(a) to include a reference to the units of measure that apply to the customer service parameter incentive rate.

The AER has also clarified the calculation of SAIFI to state that it is expressed per 0.01 interruptions in appendix A of the scheme.

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[16] Clause 3.1(c) of the scheme specifies that a DNSP's network will be divided into segments by network type. Network type is defined in the glossary of the scheme. The AER has not amended this definition. A DNSP may propose to segment its network by a method other than network type in accordance with clause 3.1(d) of the scheme.

[17] The incentive rates for unplanned SAIDI parameters are also constant over the regulatory control period. The methodology employed in clause 3.2.2(h) is unchanged from version 1.0 of the scheme.

The AER has modified appendix B of the scheme to reflect the amendments discussed. In addition to these amendments, two generic formulas have been included that illustrate the calculation of incentive rates for the unplanned SAIDI and unplanned SAIFI parameters.

Customer service parameters

The AER has amended clause 5.3.2(a)(1) to clarify the units of measure for incentive rates for the customer service parameters. This clarification does not alter the operation of the scheme.

5.4.2 Deletion of clauses 1.8(b) and 1.8(d)

Clause 1.8(b) of version 1.0 of the scheme was included to provide DNSPs with greater certainty as to the form in which the scheme is likely to apply to them in a forthcoming distribution determination. It stated that:

> 1.8(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 the regulatory control period (the 'cut off date').
>
> 1.8(d) In order to ensure that the distribution consultation procedures can be completed before the cut off date, a proposal to amend this scheme must be submitted to the AER at least 120 business days before the cut off date.

The AER considers that clause 1.8(b) unnecessarily restricts both the AER's and a DNSP's ability to amend and apply the scheme, which is potentially inconsistent with the NER. Under clause 6.6.2(c) of the NER, the AER is allowed to amend the STPIS in accordance with the distribution consultation procedures set out at rule 6.16. The AER considers that these procedures are sufficient to ensure that any amendment to the scheme is appropriately consulted on and proposes to delete clause 1.8(b), and clause 1.8(d), which becomes redundant once clause 1.8(b) is removed.

5.4.3 Insertion of clauses 3.2.1(a)(1A), 5.3.1(b)(1A) and 5.3.1(b)(1B)

The AER has added three clauses to the scheme that relate to the setting of performance targets for the reliability of supply and customer service parameters. These clauses specify that the AER will take account of whether a DNSP breached the cap on revenue at risk in the current regulatory control period when establishing performance targets in the next regulatory control period in which parameters are to be applied.

If the sum of the raw s-factors exceeds the amount of revenue at risk in a regulatory year, an adjustment is required to performance targets to ensure that a DNSP does not experience a penalty, by way of increasingly difficult performance targets, in the next regulatory control period for improved service performance that exceeded the revenue at risk. Likewise, an adjustment is required to ensure that a DNSP does not benefit, by way of easier performance targets, in the next regulatory control period for service performance that fell below the amount of revenue at risk.

In both these instances, the AER considers it appropriate to adjust performance targets to take into account the possibility that the revenue at risk may be breached in the

current regulatory control period and has proposed the inclusion of clauses 3.2.1(a)(1A), 5.3.1(b)(1A) and 5.3.1(b)(1B) which state that the AER will take into account any instance where the cap has been breached when setting performance targets.

5.4.4 Amendment to clauses 5.1(e) and 6.2(4)

The AER also proposes to amend clauses 5.1(e) and 6.2(4) by removing the words 'effective competition', and relacing them with 'standard control services' to more closely align the terminology used in the STPIS with that of the NER.

5.4.5 Insertion of appendix E

The proposed scheme contains a new appendix E which provides a detailed worked example showing the operation of the equations in appendix C.

Appendix A: Addressing the NER requirements

The following table sets out how the AER has met the relevant NER requirements in amending the STPIS.

Rule requirement	**AER response**
Clause 6.6.2(b)(1) The AER must consult with the authorities responsible for the administration of relevant jurisdictional electricity legislation.	The AER will consult with the authorities responsible for the administration of relevant jurisdictional electricity legislation on the amendments to the STPIS.
Clause 6.6.2(b)(2) The AER must ensure that service standards and service targets (including guaranteed service levels) set by the scheme do not put at risk the DNSP's ability to comply with relevant service standards and service targets (including guaranteed service levels) as specified in jurisdictional electricity legislation.	Service standards and service targets as specified in jurisdictional legislation will be funded through the capital and operating expenditure requirements of a DNSP. The impact of these improvements will be considered when setting targets under the amended STPIS. The amendments to the STPIS do not put at risk a DNSP's ability to comply with relevant service standards and service targets specified in jurisdictional electricity legislation. The guaranteed service levels (GSL) component of the scheme will not apply where a jurisdictional GSL scheme is imposed, therefore, the STPIS will not put at risk a DNSP's ability to comply with GSLs in jurisdictional electricity legislation.
Clause 6.6.2(b)(3)(i) The AER must take into account the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs.	The amended STPIS provides a symmetrical financial incentive for DNSPs to maintain and improve service performance. Customers benefit from the scheme's application by receiving improved service levels, or lower prices that reflect diminished service levels. The AER considers that the benefits likely to result from the amended STPIS are

	sufficient to warrant any reward or penalty under the scheme.
Clause 6.6.2(b)(3)(ii) The AER must take into account any regulatory obligation or requirement to which the DNSP is subject.	The AER has set out that it will take into account any regulatory obligations or requirements in setting performance targets under the scheme. As noted above, the GSL component of the amended STPIS will not apply where a jurisdictional scheme is in place. The amendments to the STPIS have not altered how the AER will take account of any regulatory obligations or requirements.
Clause 6.6.2(b)(3)(iii) The AER must take into account the past performance of the distribution network.	Targets under the amended scheme are to be set at the average of the last five years performance, adjusted for any planned reliability improvements or any other factors that are expected to materially affect network reliability performance. GSL payments and thresholds have been developed and based on existing jurisdictional GSL arrangements and thus are generally based on the levels of service that DNSPs are currently subject to under these arrangements.
Clause 6.6.2(b)(3)(iv) The AER must take into account any other incentives available to the DNSP under the NER or a relevant distribution determination.	In amending the STPIS, the AER has taken into account incentives provided under the CPI minus X regulatory framework, the efficiency benefit sharing scheme (EBSS) and demand management incentive scheme (DMIS) as set out in the NER and the relevant schemes developed by the AER.
Clause 6.6.2(b)(3)(v) The AER must take into account the need to ensure that the incentives are sufficient to offset any financial incentives the service provider may have to reduce costs	Incentive rates are set at customer's willingness to pay and the scheme is symmetrical, i.e. penalties are incurred at the same rate as rewards, there is a strong

at the expense of service levels.	incentive for a DNSP not to reduce costs at the expense of service levels. The STPIS is flexible to allow incentive rates to be increased or decreased as appropriate. This will be decided as part of the distribution determination. A ± 5 per cent cap on the revenue at risk is applied under the STPIS, this establishes the maximum reward DNSP's can earn from improved service levels and limits the penalty incurred from diminishing service levels. The rationale for the cap is discussed in the final decision for version 1.0 of the scheme. The amendments made to the s-factor formula improve the balance between the financial incentives under a capped scheme.
Clause 6.6.2(b)(3)(vi) The AER must take into account the willingness of the customer or end user to pay for improved performance in the delivery of services.	The incentive rates used in the scheme are calculated using the VCR which reflects customers' willingness to pay for improved levels of service. The AER has updated the VCR values used in the amended scheme as it believes the most recent documented and robust data should be used to reflect the VCR.
Clause 6.6.2(b)(3)(vii) The AER must take into account the possible effects of the scheme on incentives for the implementation of non-network alternatives.	The AER has taken into account the possible effects of the STPIS on incentives for the implementation of non-network alternatives. The AER intends that the STPIS be as neutral as possible regarding the level of reliability provided by network solutions vis-à-vis non network alternatives. The amendments to the STPIS do not affect a DNSPs incentive to implement non-network alternatives

Shortened forms

AER	Australian Energy Regulator
AR	allowed revenue
ARR	annual revenue requirement
CPI	consumer price index
CRA	Charles River Associates
DMIS	demand management incentive scheme
DNSP	distribution network service provider
EBSS	efficiency benefit sharing scheme
GSL	guaranteed service level
IEEE	Institute of Electrical and Electronics Engineers (USA)
MAAR	maximum allowable average revenue
MAIFI	momentary average interruption frequency index
MWh	megawatt hour
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules
s-factor	service standards factor
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SCNRRR	Steering Committee of National Regulatory Reporting Requirements
STPIS	service target performance incentive scheme
VCR	value of customer reliability
WACC	weighted average cost of capital
WAPC	weighted average price cap