Ergon Energy Corporation Limited

Proposed Amendment - Service Target Performance Incentive Scheme - Submission

Australian Energy Regulator

29 October 2009

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This submission, which is available for publication, is made by:

Ergon Energy Corporation Limited
PO Box 15107
City East
BRISBANE QLD 4002

Enquiries or further communication should be directed to:

Tony Pfeiffer
General Manager Regulatory Affairs
Ergon Energy Corporation Limited
Email: tony.pfeiffer@ergon.com.au
Ph: (07) 3228 7711
Mobile: 0417 734 664
Fax: (07) 3228 8130

Or

Kim Casey
Manager Regulatory Affairs – Performance & Reporting
Ergon Energy Corporation Limited
Email: kim.casey@ergon.com.au
Mobile: 0428 197 012

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Overview

Ergon Energy Corporation Limited (Ergon Energy) welcomes the opportunity to make this submission to the Australian Energy Regulatory (AER) on its proposed amended "Electricity Distribution Network Service Providers - Service Target Performance Incentive Scheme" Version 01.2 (draft) (the STPIS). This submission is provided by Ergon Energy in its capacity as a distribution network service provider (DNSP) in Queensland.

Introduction

Ergon Energy generally supports the amendments to the proposed amended STPIS given they do not appear to fundamentally alter the operation of the STPIS, rather the changes move to improve the transparency and effectiveness of the scheme and provide greater flexibility where appropriate.

That said, Ergon Energy believes that the following issues warrant further clarification or amendment:

- Ergon Energy strongly objects to the AER's amendment to clause2.2 (a) of the STPIS, which restricts a DNSPs ability to propose variations under the scheme
- Ergon Energy seeks clarification on the use of terms with regards to the requirement that performance targets must not 'decline' over time
- Appendix D in its current form requires further consideration.

These issues are detailed in the relevant sections of this submission.

1 Proposed amendments

Clause 5 of the Explanatory Statement outlines the AER's proposed amendments to Version 1.1 of the STPIS, aimed at improving the clarity, effectiveness and operation of the Scheme. The majority of the amendments are contained within the body of the STPIS however changes have also been made in Appendix C and D.

1.1 S-Bank Mechanism

Ergon Energy notes that the AER has chosen not to alter the application of the s-bank mechanism, following proposed amendments included in ETSA's regulatory proposal to allow DNSPs to either:

- defer incurring any rewards or penalties under the STPIS for more than one year; or
- bank rewards or penalties up to a maximum percentage of a DNSP's revenue (i.e. the s-bank could hold a maximum percentage of a DNSPs revenue).

Rather, the AER raised concern that any further averaging will reduce the power of the incentive and considers that the current mechanism allows DNSPs to adequately manage volatility that may arise from the application of the s-factor.

Ergon Energy has no comment in this regard.

1.2 Major Event Days (Appendix D)

Currently, the AER has adopted the US Institute of Electrical and Electronics Engineers (IEEE) Standard 1366:2003 in the STPIS as the quantitative approach for excluding an unplanned system outage which exceeds a particular boundary (currently 2.5 beta). Appendix D of the SPTIS provides that if the unplanned SAIDI exceeds the calculated boundary the period is deemed a Major Event Day (MED) and is excluded from the calculation of the revenue increment or decrement (ie the s-factor) under the scheme.

This approach aligns with Ergon Energy's current methodology as adopted in its Regulatory Proposal to the AER.

Transformation of data that is not normally distributed

The STPIS currently assumes that all SAIDI data collected under the scheme exhibits a log normal distribution. Furthermore, it is silent on how a DNSP should use any data that is obtained under the scheme that is not log normal.

In Clause 5.2.1 of the Explanatory Statement, the AER proposes to explicity allow a DNSP to propose alternative statistical approaches in utilising the data sets applied under the scheme. Specifically, a number of new paragraphs have been inserted into Appendix D of the proposed amended STPIS in addition to a number of new steps in the process to calculate the MED boundary, to explicity allow a DNSP to propose an alternative transformation method where a daily unplanned SAIDI data set is not log normally distributed.

This proposed amendment is in response to the submission by ETSA (as part of its regulatory proposal for the 2010-15 regulatory control period) that there should be scope for the Box-Cox transformation methodology to be used to find the average and the standard deviation of service performance data, instead of the natural logarithm approach currently used in the scheme.

Application of a greater beta threshold

In Clause 5.2.2 of the Explanatory Statement, the AER also recognises that it would be appropriate to allow a DNSP to propose a major event day boundary that is greater than the 2.5 beta that is currently permitted. The AER considers this increased flexibility will allow a DNSP to propose a major event day boundary that more accurately reflects the service performance characteristics of its network and to provide sufficient incentive for a DNSP to maintain or improve service performance.

Conversely, the AER notes that 2.5 beta from the mean provides a reasonable 'safe harbour' standard which has been adopted by the IEEE, and that proposal of a lower threshold would not be appropriate. Rather, the AER proposes to require DNSPs to use the IEEE standard as the minimum beta boundary while providing some flexibility by allowing a greater beta threshold (than a 2.5 beta) to be used where appropriate.

This proposed amendment (reflected in Appendix D of the STPIS) is in response to the request from SP AusNet for the scheme to allow discretion for the AER to consider an alternative exclusion threshold proposed by a DNSP.

Ergon Energy notes that the AER's chosen methodology to calculate Major Event Day Threshold (T_{MED}) aligns with Ergon Energy's current approach as applied in its Regulatory Proposal submitted to the AER. Furthermore, Ergon Energy has tested all of its daily unplanned SAIDI data collected under the scheme to calculate the MED threshold (T_{MED}) for log normal distribution and it has been proven that the data exhibits a log normal distribution after Step 3 in Appendix D. Under current drafting of Appendix D, this would suggest Ergon Energy is not required to employ a transformation technique to transform its daily unplanned SAIDI data.

Ergon Energy supports the AER's proposal to explicitly allow a DNSP to propose an alternative transformation method where the historical daily unplanned SAIDI data (after Step 3 in Appendix D of STPIS) used to calculate the Major Event Day threshold is not normally distributed. Ergon Energy also welcomes the proposal to allow a DNSP to propose a threshold greater than 2.5 beta.

However Ergon Energy finds the current drafting of Appendix D to be confusing (namely, the hierarchy of clauses is unclear), and warrants further revision.

Of note, the following text is repeated in both paragraphs 3 and 5 of Appendix D

> *In calculating daily unplanned SAIDI, any interruption that spans multiple days is accrued to the day on which the interruption begins.*

Further clarification is also required regarding steps to be taken in the transformation of data should it be found to not be normally distributed following step 3.

Specifically, when step 3 finds the daily unplanned SAIDI data set to be log normally distributed, points 4 - 6 (excerpt below) require alpha (α) and beta (β) to be calculated as the average and standard deviation of the ***logarithms*** of the daily unplanned SAIDI data set respectively. T_{MED} is required to be calculated as the ***exponential*** of (α+2.5β) (i.e.: $e^{(\alpha+2.5\beta)}$).

Apply a commonly accepted statistical test for normality to the data set, and where the data set is normally distributed:

4. Find α (alpha), the average of the logarithms of the data set.
5. Find β (beta), the standard deviation of the logarithms of the data set.
6. The boundary for an extreme event or *major event day* (T_{MED}) is then calculated as follows:
   a. $T_{MED} = e^{(\alpha+2.5\beta)}$

(where the value of 2.5B is adjusted to reflect any alternative amount permitted to be used in accordance with this *scheme*.)

However, when step 3 finds the data set to be <u>not</u> normally distributed, point 2 on page 36 (excerpt below) requires the DNSP to

2. Apply the proposed alternative data transformation to calculate each *daily unplanned SAIDI* value in the data set.

Which "**data set**" is unclear, however, point 2 could imply - use the transformation to calculate each new *daily unplanned* SAIDI value in the **transformed daily unplanned SAIDI** data set. This then implies that the alternative data transformation is intended to convert a non log normally distributed daily unplanned SAIDI data set – into a log normally distributed daily unplanned SAIDI data set.

Then the T_{MED} process can continue as for when the daily unplanned SAIDI data set is log normally distributed

However, points 3-5 (excerpt below) then require alpha and beta to be calculated as the average and standard deviation of the transformed data set respectively ***without calculating the logarithms*** of the data set and T_{MED} is required to be calculated as **(α+2.5β) only** and rather than the exponential of (α+2.5β) (i.e.: $e^{(\alpha+2.5\beta)}$).

3. Find α (alpha) as the average of each daily *unplanned SAIDI* value to which the proposed alternative data transformation method has been applied.

4. Find β (beta) as the standard deviation of each daily *unplanned SAIDI* value to which the proposed alternative data transformation method has been applied.

5. The boundary for an extreme event or *major event day* (T_{MED}) is then calculated such that the transformed value is as follows:

   $T_{MED} = \alpha + 2.5\beta$

   (where the value of 2.5B is adjusted to reflect any alternative amount permitted to be used in accordance with this *scheme*.)

Further clarification from the AER with regards to this calculation is required. Ergon Energy seeks clarification whether the alternative data transformation method replaces the use of natural logarithm.

A suggested rewording by Ergon Energy of Appendix D follows. The key steps queried with regards to the calculations above (albeit, reworded given Ergon Energy's understanding of the steps on the basis that the alternative data transformation replaces the use of natural logarithm) are highlighted for further clarification.

Suggested rewording : Ergon Energy

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 *regulatory years*' SAIDI data (the '2.5 beta method').

A DNSP may propose in accordance with clause 2.2 of this *scheme, a major event day* boundary that is greater than 2.5 standard deviations from the mean. A DNSP subject to a beta threshold greater than 2.5 during a *regulatory control period* and seeking to reduce its beta threshold to 2.5 in the subsequent *regulatory control period* must demonstrate to the AER that its proposal is consistent with the objectives of the *scheme* and provide supporting information, as required by clause 2.2 of the *scheme*.

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*.

In calculating daily *unplanned SAIDI*, any *interruption* that spans multiple days is accrued to the day on which the *interruption* begins. 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 *parameters* for the purpose of calculating the revenue increment or decrement resulting from this *scheme*.

The *major event day* boundary is calculated at the end of each reporting period (typically one *regulatory year*) for use during the next reporting period using the 2.5 beta method as follows:

1) Collect values of daily *unplanned SAIDI* over five sequential *regulatory years* ending on the last day of the last complete reporting period. If fewer than five *regulatory years* of historical data are available, the most recent data should be used.
2) Only those days where an *unplanned SAIDI*/day value > 0 are considered (do not include days that did not have any *interruptions*).
3) Calculate the natural logarithm (ln) of each daily *unplanned SAIDI* value in the daily unplanned SAIDI data set.
4) Apply a commonly accepted statistical test for normality to the ln(daily unplanned SAIDI) data set. Where application of a statistical test indicates:
   a) the ln(daily unplanned SAIDI) data set is normally distributed:
      i) Find α (alpha), the average of the logarithms of the daily unplanned SAIDI data set.
      ii) Find β (beta), the standard deviation of the logarithms of the daily unplanned SAIDI data set.
      iii) The boundary for an extreme event or *major event day* (T_{MED}) is then calculated as follows:

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

      where the value of 2.5B is adjusted to reflect any alternative amount permitted to be used in accordance with this *scheme*.
   b) the ln(daily unplanned SAIDI) data set is <u>not</u> normally distributed:
      i) Propose an alternative data transformation method to replace the use of natural logarithm which, when applied to the daily unplanned SAIDI data set, results in a more normally distributed transformed data set in accordance with clause 2.2 of this scheme.
      ii) Apply the proposed alternative data transformation to the daily unplanned SAIDI data set to calculate each *daily unplanned SAIDI* value in the transformed data set.
      iii) Find α (alpha) as the average of the values in the transformed data set
      iv) Find β (beta) as the standard deviation of the values in the transformed data set.
      v) The boundary for an extreme event or *major event day* (T_{MED}) is then calculated such that the transformed value is as follows:

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

      where the value of 2.5B is adjusted to reflect any alternative amount permitted to be used in accordance with this *scheme*.
5) Any day in the new reporting period where the total *unplanned SAIDI* exceeds the calculated value of T_{MED} is classified as a *major event day*.
6) Where 4 (b) applies and application of an alternative data transformation method is required, in addition to the requirements of clause 2.2 of this scheme, a DNSP must:
   a) Demonstrate that the natural logarithm of the data set of each daily unplanned SAIDI value is not normally distributed.
   b) Explain the proposed alternative data transformation method.
   c) Provide the calculations that demonstrate the application of the alternative data transformation method to the daily unplanned SAIDI values.
   d) Provide the data set resulting from applying the proposed alternative transformation method.
   e) Demonstrate that the resulting transformed data set is normally distributed or that the normality of the transformed data set is improved over the normality of the ln(daily unplanned SAIDI) data set.

1.3 Timing of performance measurement

The AER proposes in Clause 5.3 of the Explanatory Statement, to alter the scheme to include references to regulatory years, rather than specifying the dates over which a DNSP's performance will be measured over (i.e. 1 July until 30 June inclusive). This amendment eliminates the scope for gaps in performance measurement to occur, as under the current scheme DNSPs that start their regulatory control period on, say 1 January (the Victorian DNSPs), must measure their performance on a financial year basis.

The amendment largely impacts clause 2.4 of the scheme, with consequential amendments arising as a result (discussed below).

Ergon Energy supports the AER's proposed amendments to the scheme with regard to timing of performance measurement, which both provides for alignment of measuring and reporting performance to differing regulatory years, and simplifies the operation of the scheme.

2 Other Amendments and Clarifications

The AER has also made other amendments to further clarify the operation of the scheme

2.1 Clarifications

General application of the scheme

Clause 5.4.1.1 of the Explanatory Statement and the insertion of a new clause 2.1(d) into the SPTIS is aimed at clarifying what aspects of the scheme the AER will determine for a DNSP in its distribution determination.

Ergon Energy notes that clause 6.12.1(9) requires that a distribution determination is predicated on a constituent decision by the AER on how any applicable service target performance incentive scheme is to apply to the DNSP. We support the amendment to the STPIS as providing further clarification (as Guidelines should) with regard to the components of the scheme that AER's will consider within its constituent decision on STPIS.

With regards to clause 2.1(d)(8), it is noted that in its current form, this appears not to allow for the AER to determine the major event day boundary to apply to a DNSP where the DNSP proposes a threshold of 2.5 standard deviations. A simple rewording is suggested such that clause 2.1(d)(8) is amended to read:

> 2.1(d) (8) the *major event day* boundary to apply to a DNSP, **including**:

Proposals to vary the application of the scheme

In Clause 5.4.1.2 of the Explanatory Statement the AER raises the need to clarify when a DNSP can make a proposal to vary the scheme. Specifically, clause 2.2(a) of the STPIS has been amended to:

> Where the *scheme* indicates that a DNSP can make a proposal to vary the application of this *scheme*, that proposal should be made in the *regulatory proposal* in accordance with and subject to clause 6.8.2 of the NER.

Of note, the amendment to clause 2.2(a) of the STPIS removes the ability for any proposal to vary the scheme to be made by a DNSP in

> *any revised regulatory proposal in accordance with clause 6.10.3 of the NER*

Ergon Energy strongly objects to the AER's amendment to clause2.2 (a) of the STPIS.

Whilst it is noted that National Electricity Rules (NER) are binding, whereas Guidelines are not binding on either the AER or DNSPs, Ergon Energy argues that this amendment seeks to curtail the principles of NER within the drafting of a Guidelines. Furthermore, it is not clear why the AER would seek to make an amendment to this effect.

The STPIS is but one of the many elements packaged in a DNSPs regulatory proposal or revised regulatory proposal, and a necessary point for consideration of any distribution determination. The AER should not in principle be seeking to fetter or diminish a DNSPs rights under the Rules via its Guidelines, rather it should seek to provide further clarity and guidance only.

2.2 Consequential amendments

Process for Revision

Clause 5.4.2.1 of the Explanatory Statement discusses revisions to clause 1.8(f)(1) of the STPIS which are consequential to amendments made relating to the timing of performance measurement. The amendment to 1.8(f)(1) involves the replacement of financial years with regulatory years to expand the type of information that a DNSP may provide to the AER when it seeks to add or vary a parameter.

As stated, Ergon Energy supports the proposed amendments to the scheme with regard to timing of performance measurement.

Values for parameters - Reliability of Supply

Clause 5.4.2.2 of the Explanatory Statement refers to the revision of existing clauses and insertion of new clauses as relevant to amending the process by which performance targets can be set (to permit calendar year data to be the basis for setting of performance targets), and how the incentive rates for unplanned SAIDI and SAIFI parameters are calculated (to take into account leap years). Specifically:

- Amendments have been made to clause 3.2.1(a), and newly inserted clause 3.2.1(a)(1) and clause 3.2.1(c) of the STPIS permit calendar year data to be the basis for setting of performance targets - this has been achieved through reference to regulatory years.

- Amendments to clause 3.2.2(h)(3) and clause 3.2.2(i)(3) of the STPIS and also, amendments to the worked example in Appendix B reflect the term "average" as having been included in the third step of the process to clarify that the average

number of minutes in a regulatory year is to be used to calculate the incentive rates for unplanned SAIDI and SAIFI parameters.

Ergon Energy generally supports the proposed the aforementioned consequential amendments to the scheme.

However, Ergon Energy noted that another amendment was made to the STPIS which has not been discussed in the Explanatory Statement. Specifically:

- Amendments to clause 3.2.1(a) of the STPIS to enact the requirement that *….performance targets to apply during the regulatory control period must not decline across regulatory years*.

Ergon Energy seeks further clarification regarding the AER's choice of terminology in this instance, namely the requirement that performance targets must not "**decline**".

It is noted by Ergon Energy that an objective of the STPIS is to balance a DNSP's incentive to reduce expenditure with the need to "**maintain and improve**" its service performance. However, it should be noted that the rate of improvement of performance over time, may slow.

Furthermore, Ergon Energy refers the AER to Clause 2.5.3 of its *Framework and Approach, Stage 2 - Application of Schemes* (November 2008), which discusses the performance targets to apply during the regulatory control period, including the AER's preliminary position that:

> *….STPIS performance targets would be established at or above the current MSS levels*

Futhermore, the AER noted within its Framework and Approach that, on the reliability of supply component of performance targets,

> *….the operation of the national distribution STPIS can accommodate constant or variable targets*

and

> *….the MSS targets require an improved level of service over the next regulatory control period.*

Ergon Energy, in its regulatory proposal submitted to the AER, has proposed that STPIS performance targets be set as MSS levels which tighten gradually (i.e. could be deemed to 'decline') over the next regulatory period. This is aligned with requirements of the AER's *Framework and Approach, Stage 2 - Application of Schemes* (November 2008).

Ergon Energy seeks further clarification from the AER with regards to the objective of the amendment to clause 3.2.1(a) of the STPIS.

Values for parameters - Customer Service

Clause 5.4.2.3 of the Explanatory Statement refers to consequential revisions made to clause 5.3.1(a), the newly inserted clause 5.3.1(b)(1) and clause 5.3.1(d) of the STPIS to alter the basis on which the performance targets for customer service can be set, following on from the regulatory year based amendments discussed earlier.

Ergon Energy supports the proposed amendments to clause 5.3.1(a) and insertion of clauses 5.3.1(b)(1) and 5.3.1(d) in the STPIS, given they are consequential to the proposed amendments to the scheme with regard to timing of performance measurement.

Appendix C: Adjustments to allowed revenue

The AER has amended a number of examples contained in Appendix C to reflect the amendments in clauses 2.4, 3.2 and 5.3 of the STPIS discussed above. In general, the amendments involve the replacement of 'years' with 'regulatory years' following on from the amendments discussed earlier.

Ergon Energy supports the proposed amendments to Appendix C of the STPIS, given they are consequential to the proposed amendments to the scheme with regard to timing of performance measurement.

2.3 Minor amendments

Exclusions (clause 3.3 and 6.4 of the STPIS)

Clause 5.4.3.1 of the Explanatory Statement proposes two amendments to reflect the recent establishment of the Australian Energy Market Operator (AEMO). The amendments replace reference to NEMMCO with AEMO in clause 3.3(a)(4) and 6.4(a)(4) of the STPIS.

Ergon Energy supports the proposed amendments to clause 3.3(a)(4) and 6.4(a)(4) of the STPIS, which are necessary given the establishment of the AEMO.

Appendix A: performance incentive Scheme parameters - standard definitions

Clause 5.4.3.2 of the Explanatory Statement proposes amendments to two definitions contained in Appendix A of the STPIS to reflect the amendments made in clauses 2.4, 3.2 and 5.3 of the scheme. Revisions have been made to the definitions for "Frequency of Interruption" and "Total Duration of Interruptions" to replace the reference to "year" with "regulatory year".

Ergon Energy supports the proposed amendments to the definitions for "Frequency of Interruption" and "Total Duration of Interruptions", given they are consequential to the proposed amendments to the scheme with regard to timing of performance measurement.