

APPENDIX 48

**Report on STPIS parameter values
Parsons Brinckerhoff**

Energex

Report on STPIS parameter values

15 August 2014



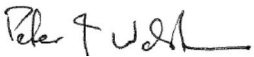
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1. Introduction

1.1 Scope

Energex engaged Parsons Brinckerhoff to assist in establishing targets for the reliability of supply component of the Service Target Performance Incentive Scheme (STPIS) parameters. The work includes:

- to advise on methods of calculating and making adjustments to the targets for capital works in the current period and works forecast for the next period
- validation of the data used in the adjustment mechanism
- providing a 'reasonableness' check of the calculated targets.

1.2 STPIS requirements

The STPIS requirements are set out in a guideline published by the AER in November 2009 (version 1.2). For the reliability of supply component, the guideline requires that:

- Targets are based on the average performance over the past five regulatory years (ref 3.2.1(a))
- Targets may be modified by:
 - ▶ an adjustment for excluded events (ref 3.2.1(a)(1))
 - ▶ an adjustment for completed or planned reliability improvement works (ref 3.2.1(a)(1A))
 - ▶ an adjustment for revenue at risk (ref 3.2.1(a)(1B))
 - ▶ any other factors that are expected to materially affect network reliability performance (ref 3.2.1(a)(2)).

Energex proposes adjustments for 'excluded events' and 'revenue at risk'. Energex does not propose any adjustments in respect of 'completed or planned works' or 'other factors'.

2. Assessment

2.1 Targets

Energex's regulatory year is 1 July to 30 June with the next regulatory control period commencing 1 July 2015. Parsons Brinckerhoff confirms that targets are based on the average performance in years 2009/10 to 2013/14 measured from 1 July 2009 to 30 June 2014. This meets the requirement that targets are based on the average performance over the past five regulatory years (ref 3.2.1(a)).

2.2 Adjustment for excluded events

Events that may be excluded from the data when calculating the 5-year average are listed in STPIS clause 3.3. Energex has excluded such events. The excluded events are those previously submitted to AER in the Annual Performance information. Parsons Brinckerhoff notes that this information has been externally audited and therefore Parsons Brinckerhoff has not tested the accuracy of this information.

2.3 Adjustment for completed or planned works

Energex states that it has undertaken funded reliability improvements in each year of the current regulatory control period and has assessed their impact as follows. Significant improvements were made in the first two years of the regulatory control period when compared to the remaining years. As such, the impact of these works on reliability performance is inherently reflected in the actual performance data.

Energex states that it will not undertake expenditures for improvement works in the next regulatory control period, but will address issues with Worst Performing Feeders. In Parsons Brinckerhoff view, these works have no material impact on network average performance. This is because the expenditure is focussed on bringing poorly performing feeders back to acceptable performance. It is evident that some feeders' performance will deteriorate in each period and require remedial actions. The result is maintenance of overall performance levels.

Hence Energex does not propose an adjustment in respect of completed or planned works.

2.4 Adjustment for revenue at risk

Annual performance in the current regulatory control period has breached the revenue cap determined under clause 2.5(a) of the STPIS guideline. Hence, Energex proposes to make an adjustment for revenue at risk as allowed by clause 3.2.1(a)(1B).

The STPIS guideline does not specify how the adjustment should be calculated and the AER has not made a decision in respect of an adjustment under this clause. Hence, Energex has developed its own methodology based on the following principles:

- The adjustment should only be made to annual performance in those years where the s-factor reward or penalty exceeded the revenue cap.
- The adjustment should be applied to each parameter separately so as to take into account the different incentive rates associated with each parameter (and sub-parameter as appropriate) and the contribution of each parameter to the total reward or penalty.

- The adjustment should be on the actual reward or penalty; that is after the action of any delay in application of the revenue increment or decrement made in accordance with clause 2.5(d).

The calculation methodology is set out in Appendix A.

In Parsons Brinckerhoff's view, the calculation methodology is consistent with the requirements of the STPIS because:

- No adjustment is made for 2009/10 results, as no revenue increment or decrement was incurred under the STPIS in this year
- The methodology only removes from the targets the actual portion of performance that has not been subject to a reward or penalty under the incentive scheme.

2.5 Other factors

Energex does not propose any adjustments in respect of 'other factors'. Parsons Brinckerhoff discussed a range of potential factors with Energex. The following are not expected to have a material impact on reliability performance:

- The potential for changes in asset management practice to impact on reliability performance – Energex is continually improving its practices; however, improvements are gradual and no step changes are proposed.
- The potential for changes in targeted levels of performance to be mandated by the relevant regulator – targets have now been set by Queensland Competition Authority and Energex does not propose any additional expenditures in the remainder of the current regulatory period or the next to improve performance to meet these targets.

Factors that may have an impact on reliability performance are:

- The potential for a delay in the completion of some reliability projects being undertaken in the current regulatory control period to impact on performance in the next period.

Energex is undertaking a small number of reliability improvement projects in the current regulatory control period that might materially impact on network average reliability performance. The impact of expenditures already undertaken is reflected in actual performance on which targets are based. While all work should be completed within the current regulatory control period, it is possible that some projects may be delayed into the next period. Parsons Brinckerhoff recommends that Energex undertake a risk assessment of the potential for projects to be delayed and assess the materiality of possible delays on reliability performance..

3. Conclusion

Parsons Brinckerhoff has reviewed the targets proposed by Energex for inclusion in its regulatory proposal for the 2015/16 to 2019/20 period. In our view, the targets meet the requirements of the STPIS November 2009 in respect of:

- targets are based on the average performance over the past five regulatory years
- targets have been appropriately modified for:
 - ▶ an adjustment for excluded events
 - ▶ an adjustment for revenue at risk
- No adjustments to targets are appropriate and none have been made for:
 - ▶ completed or planned works
 - ▶ any other factors that are expected to materially affect network reliability performance.

There is a small possibility that reliability projects intended for completion in the current regulatory control period may be delayed into the next period. Parsons Brinckerhoff recommends that Energex undertake a risk assessment of the potential for projects to be delayed and assess the materiality of possible delays on reliability performance.

Appendix A

Methodology - revenue at risk



Methodology - revenue at risk

The information provided below describes how actual performance was corrected for the revenue at risk to the extent that it did not lie between the upper limit and the lower limit (2%).

Overall, the addition of the s-factors for each of the parameters led to a revenue increment that exceeded the maximum allowed revenue increment in four of the five years in the period 2009/10 to 2013/14. As the STPIS did not apply in 2009/10, no revenue adjustment was made and hence, no adjustment is required.

The methodology is to reduce the s-factor for each reliability parameter in proportion to its contribution, such that their sum equals the revenue cap (2%) in each year. The reduced s-factor for each reliability parameter is then used to calculate the adjusted performance for that year.

The data, however, shows that the annual performance for some parameters was less than the target and as such did not contribute to the revenue cap being exceeded. If scaling was applied to these parameters, the affect would be to adjust the performance of those parameters that did not meet target performance, which appears contrary to the objectives for the scheme. To prevent these parameters being scaled, only parameters with s-factors above zero were included in the scaling calculation.

The adjustment methodology is described below.

For each year:

1. Find the overall reduction required:
 - a. Determine the actual annual performance for the parameter, net of excluded events
 - b. For each parameter, calculate the Raw s-factor as $(\text{Target} - \text{Actual}) * (\text{incentive rate})$
 - c. Calculate the Total raw s-factor as the sum of the individual parameter Raw s-factors
 - d. The Overall Reduction required is the $(\text{Total raw s-factor}) - (\text{Cap})$
2. Find the contribution of each parameter to the overall s-factor:
 - a. For each parameter, calculate the Raw s-factor above zero - this removes the impact of any parameters that did not contribute to the cap being exceeded
 - b. Calculate the Total raw s-factor above zero as the sum of the individual parameter Raw s-factors above zero
 - c. The contribution of each parameter is then the ratio of the $(\text{Raw s-factor above zero})$ and the $(\text{Total raw s-factor above zero})$.
3. Find the reduction in each parameter's performance to match the overall reduction required:
 - a. Calculate the Contribution of each parameter as $(\text{Reduction}) * \frac{(\text{Raw s-factor above zero})}{(\text{Total raw s-factor above zero})}$
4. Find the adjusted annual performance for each parameter:
 - a. Calculate Adjusted actual performance as $(\text{Actual} + (\text{Contribution}/\text{Incentive rate}))$

A diagram depicting the calculation methodology is shown as Figure 1. In this figure, four parameters are considered with P1 being underperformance against targets and P2, 3 and 4 outperforming against targets. It shows that only the positive s-factors are scaled to match the s-factor cap of two. The actual calculation is shown in Table 1.

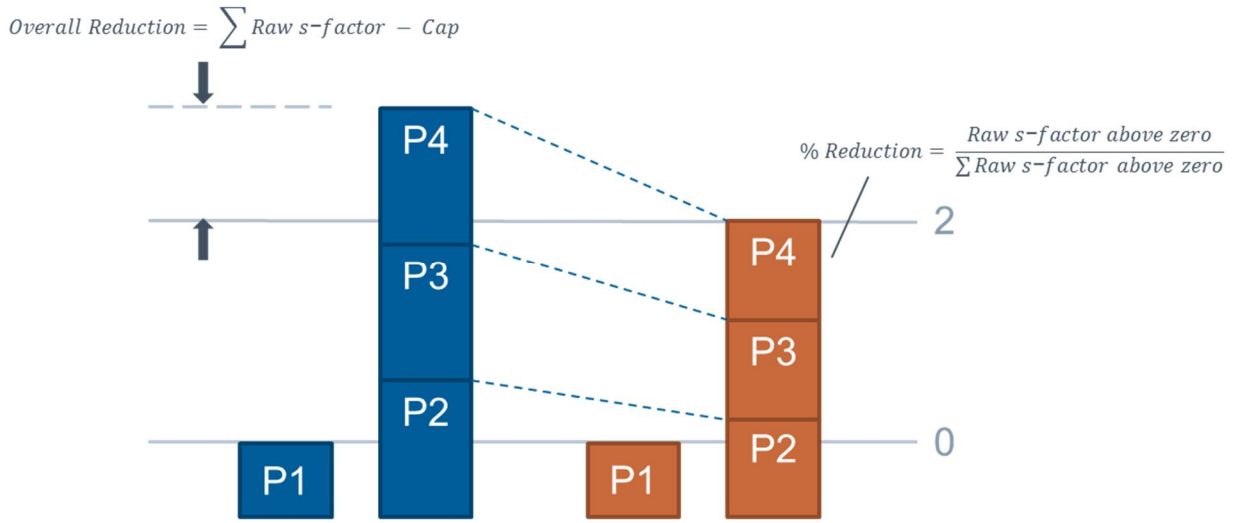


Figure 1 Calculation methodology

Table 1 S-factor adjustment calculation

| Parameter | Item | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 |
|-------------|-------------------------------------|---------------|---------------|---------------|---------------|---------------|
| CBD SAIDI | Actual | 1.506 | 5.973 | 8.112 | 0.731 | 2.237 |
| | Target | | 3.3 | 3.3 | 3.3 | 3.3 |
| | Incentive Rate | | 0.0088 | 0.0088 | 0.0088 | 0.0088 |
| | Raw S-Factor | 0 | -0.0235 | -0.0423 | 0.0226 | 0.0094 |
| | Raw s-factors above 0 | | 0.0000 | 0.0000 | 0.0226 | 0.0094 |
| | Contribution | | 0.0000 | 0.0000 | 0.0100 | 0.0041 |
| | Capped S-Factor | | -0.0235 | -0.0423 | 0.0126 | 0.0052 |
| | Capped Actual | 1.51 | 5.97 | 8.11 | 1.87 | 2.71 |
| Urban SAIDI | Actual | 66.54 | 57.469 | 43.088 | 54.446 | 51.911 |
| | Target | | 69.4 | 67.7 | 66 | 64.3 |
| | Incentive Rate | | 0.0634 | 0.0634 | 0.0634 | 0.0634 |
| | Raw S-Factor | 0 | 0.7564 | 1.5604 | 0.7325 | 0.7855 |
| | Raw s-factors above 0 | | 0.7564 | 1.5604 | 0.7325 | 0.7855 |
| | Contribution | | 0.1449 | 0.7994 | 0.3253 | 0.3468 |
| | Capped S-Factor | | 0.6116 | 0.7610 | 0.4072 | 0.4387 |
| | Capped Actual | 66.54 | 59.75 | 55.70 | 59.58 | 57.38 |
| Rural SAIDI | Actual | 162.25 | 142.281 | 142.8894 | 104.5964 | 114.2187 |
| | Target | | 173.2 | 164.4 | 158 | 152.4 |
| | Incentive Rate | | 0.0134 | 0.0134 | 0.0134 | 0.0134 |
| | Raw S-Factor | 0 | 0.4143 | 0.2882 | 0.7156 | 0.5116 |
| | Raw s-factors above 0 | | 0.4143 | 0.2882 | 0.7156 | 0.5116 |
| | Contribution | | 0.0793 | 0.1477 | 0.3178 | 0.2259 |
| | Capped S-Factor | | 0.3350 | 0.1406 | 0.3978 | 0.2858 |
| | Capped Actual | 162.25 | 148.20 | 153.91 | 128.31 | 131.07 |
| CBD SAIFI | Actual | 0.0831 | 0.0098 | 0.0428 | 0.0065 | 0.0161 |
| | Target | | 0.0320 | 0.0320 | 0.0320 | 0.0320 |
| | Incentive Rate | | 0.7993 | 0.7993 | 0.7993 | 0.7993 |
| | Raw S-Factor | 0 | 0.0177 | -0.0086 | 0.0204 | 0.0127 |
| | Raw s-factors above 0 | | 0.0177 | 0.0000 | 0.0204 | 0.0127 |
| | Contribution | | 0.0034 | 0.0000 | 0.0091 | 0.0056 |
| | Capped S-Factor | | 0.0143 | -0.0086 | 0.0113 | 0.0071 |
| | Capped Actual | 0.0831 | 0.0141 | 0.0428 | 0.0178 | 0.0231 |
| Urban SAIFI | Actual | 1.1160 | 0.8426 | 0.6457 | 0.7232 | 0.6699 |
| | Target | | 1.0440 | 1.0320 | 1.0200 | 1.0080 |
| | Incentive Rate | | 4.2346 | 4.2346 | 4.2346 | 4.2346 |
| | Raw S-Factor | 0 | 0.8528 | 1.6358 | 1.2568 | 1.4317 |
| | Raw s-factors above 0 | | 0.8528 | 1.6358 | 1.2568 | 1.4317 |
| | Contribution | | 0.1633 | 0.8380 | 0.5582 | 0.6320 |
| | Capped S-Factor | | 0.6895 | 0.7978 | 0.6986 | 0.7997 |
| | Capped Actual | 1.1160 | 0.8812 | 0.8436 | 0.8550 | 0.8192 |
| Rural SAIFI | Actual | 2.2492 | 1.8638 | 1.5432 | 1.3442 | 1.2836 |
| | Target | | 2.285 | 2.201 | 2.12 | 2.041 |
| | Incentive Rate | | 1.0957 | 1.0957 | 1.0957 | 1.0957 |
| | Raw S-Factor | 0 | 0.4615 | 0.7207 | 0.8500 | 0.8299 |
| | Raw s-factors above 0 | | 0.4615 | 0.7207 | 0.8500 | 0.8299 |
| | Contribution | | 0.0884 | 0.3692 | 0.3775 | 0.3663 |
| | Capped S-Factor | | 0.3731 | 0.3515 | 0.4725 | 0.4635 |
| | Capped Actual | 2.2492 | 1.9445 | 1.8802 | 1.6888 | 1.6180 |
| Totals | <i>Sum of Raw S-Factors</i> | 0 | 2.4793 | 4.1542 | 3.5980 | 3.5807 |
| | <i>Sum of Raw s-factors above 0</i> | | 2.5028 | 4.2051 | 3.5980 | 3.5807 |
| | Sum of contributions | | 48% | 215% | 160% | 158% |
| Calculation | Cap | 2 | 2 | 2 | 2 | 2 |
| | Reduction | | 0.4793 | 2.1542 | 1.5980 | 1.5807 |