Draft decision

Essential Energy distribution determination

2015–16 to 2018–19

Attachment 11: Service target performance incentive scheme

November 2014

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on Essential Energy's 2015–19 distribution determination. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 5 – Regulatory depreciation

Attachment 6 – Capital expenditure

Attachment 7 – Operating expenditure

Attachment 8 – Corporate income tax

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Demand management incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanism

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – Connection policy

Contents

Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	aggregate service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
CPI-X	consumer price index minus X
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
expenditure assessment guideline	expenditure forecast assessment guideline for electricity distribution
F&A	framework and approach
MRP	market risk premium

Shortened form	Extended form
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

11 Service target performance incentive scheme

We published the current version of our national Service Target Performance Incentive Scheme for electricity DNSPs (STPIS) in November 2009. This scheme provides a financial incentive for distribution network service providers (DNSPs) to maintain and improve their performance.[1] The STPIS balances the incentive in the regulatory framework for DNSPs to reduce costs at the expense of service performance. Cost reductions are beneficial to both DNSPs and their customers when service performance is maintained or improved.

The STPIS establishes targets based on historical performance, and provides financial rewards for DNSPs exceeding performance targets and financial penalties for DNSPs failing to meet targets. These rewards and penalties are calculated by taking into account the value of customer reliability (VCR). This aligns the DNSPs' incentives with the long term interests of consumer, which is consistent with the NEO.

The STPIS has two components, the s-factor component and the guaranteed service levels (GSL) scheme. The s-factor component adjusts the revenue that a DNSP earns depending on reliability of supply and customer service performance. The GSL scheme sets threshold levels of service for DNSPs to achieve and requires direct payment to customers who experience service worse than the predetermined level.

We have not previously applied our national STPIS to the NSW or ACT DNSPs[2] and we determined that no STPIS would apply to the NSW or ACT DNSPs in the transitional regulatory control period.[3] That is, the NSW and ACT DNSPs are not currently subject to financial penalty or reward through the s-factor component. However, jurisdictional GSL arrangements do apply.

In our Stage 2 Framework and Approach (F&A), we proposed to apply the s-factor component of our national STPIS to the NSW and ACT DNSPs for the 2015–19 regulatory control period. We considered this to be suitable given we now have sufficient historical data (collected over the 2009–14 regulatory control period) with which to set service performance targets. We did not propose to apply the guaranteed service level component (GSL) if the NSW and ACT DNSPs remain subject to jurisdictional GSL arrangements.[4]

11.1 Draft decision

Consistent with our Stage 2 F&A and Essential Energy's proposal, we will apply the s-factor component of our national STPIS to Essential Energy for the 2015–19 regulatory control period. We will not apply the GSL component to Essential Energy as the existing NSW GSL arrangement will continue to apply. We propose to apply the STPIS to Essential Energy in accordance with the details set out below.

11.1.1 Revenue at risk

The revenue at risk caps the risk of the STPIS to Essential Energy. The penalty or reward of the STPIS is calculated as a percentage adjustment to Essential Energy's total revenue. We accept

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1 AER, *Electricity distribution network service providers—service target performance incentive scheme*, 1 November 2009. (AER, *Electricity distribution STPIS*, Nov 2009).
2 Ausgrid, Endeavour Energy and Essential Energy in NSW and ActewAGL in the ACT.
3 AER, *Transitional decision for NSW and ACT DNSPs*, 16 April 2014, p.49.
4 AER, *Stage 2 framework and approach NSW distributors,* January 2014, pp.14-15; AER, *Stage 2 framework and approach ActewAGL*, January 2014, pp.14-15.

Essential Energy's proposal that the revenue at risk for each regulatory year of the 2015–19 regulatory control period will be capped at ±2.5 per cent. Within this there will be a cap of ±2.25 per cent for the reliability of supply component and ±0.25 per cent for the customer service component.[5]

11.1.2 Performance targets

Reliability of supply

We will apply the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) of the reliability of supply component to Essential Energy. We accept Essential Energy's proposed 2.5 beta method to derive the major event day thresholds (MED) in accordance with appendix D of the STPIS. However, we do not accept Essential Energy's proposed performance targets based on the average performance over past 5 regulatory years as it has not accounted for its past reliability improvement expenditure as required by clause 3.2.1(a) of the STPIS.

As we have not observed any obvious overall reliability improvement trend from Essential Energy's performance over the last five regulatory years, we have adjusted Essential Energy's performance targets based on the apportioned adjustments for Ausgrid. This is because Essential Energy has reported it has spent $609 million of reliability related expenditure in the last five regulatory years. We expect Essential Energy would broadly achieve similar levels of Ausgrid's SAIDI and SAIFI improvement, after taking into account their relative past investments and sizes. Table 111-1 sets out our draft decision on Essential Energy's performance targets for reliability of supply component.

Table 111-1 AER indicative performance targets for Essential Energy's reliability of supply component[6]

Year	2015/16	2016/17	2017/18	2018/19
Unplanned SAIDI				
Urban	69.15	69.15	69.15	69.15
Short rural	220.09	220.09	220.09	220.09
Long rural	430.13	430.13	430.13	430.13
Unplanned SAIFI				
Urban	0.875	0.875	0.875	0.875
Short rural	1.949	1.949	1.949	1.949
Long rural	2.821	2.821	2.821	2.821

Source: AER analysis.

5 Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, p.3.

6 We have taken Essential Energy's estimated 2013–14 data to set the indicative performance targets for this draft decision. We will set the performance targets for reliability of supply parameters based on the actual 2013–14 data for the final decision once we have verified the data.

Customer service component

We will apply the telephone answering parameter to Essential Energy. We do not accept Essential Energy's proposed performance target that 60 per cent of calls will be answered within 30 seconds. Due to lack of sufficiently robust historical data, we set Essential Energy's telephone answering target at 68.53 per cent based on the average performance target of the Victorian DNSPs.

11.1.3 Incentive rates

The incentive rates represent the penalties or rewards that Essential Energy will receive for each unit of variation in performance from the relevant performance target. Instead of applying the VCR prescribed in clause 3.2.2 of the STPIS, we consider the most recent VCR should be applied as it better reflects customers' current value for reliability.

We note that AEMO has recently carried out a VCR review and has published the final results from this review in September 2014.[7] We consider the revised AEMO VCR values represent the best available information for this purpose because the review process was comprehensive and included survey of NSW consumers and relies on more recent information on the preferences of NSW consumers than the VCRs prescribed in the STPIS. Table 111-2 presents our indicative incentive rates to apply to Essential Energy's SAIDI and SAIFI targets. They are based on the 2014 AEMO NSW VCR and the average of the smoothed annual revenue determined in this draft decision.[8]

Table 111-2 AER indicative incentive rates on Essential Energy's reliability of supply targets

Network type	Urban	Short rural	Long rural
Unplanned SAIDI	0.01357	0.02332	0.00748
Unplanned SAIFI	1.10519	2.86260	1.23977

Source: AER analysis.

Broadly these VCRs stemming from the recent AEMO work are lower than the previous VCRs reflecting a lower customer willingness to pay for reliability improvements. This leads to lower incentive rates and smaller penalties and rewards for each unit of variation in performance from the targets set.

The incentive rate for the telephone answering parameter will be –0.04 per cent per unit of the telephone answering parameter, which is consistent with Essential Energy's proposal and clause 5.3.2 of the STPIS.[9]

11.2 Essential Energy's proposal

Essential Energy broadly accepted our proposed application of the STPIS for the 2015–19 regulatory control period. It proposed that only unplanned SAIDI and unplanned SAIFI of the reliability of supply

7 AEMO, *Value of customer reliability review final report*, September 2014

8 We will update the incentive rates based on the average of the smoothed annual revenue determined in the final decision and the revised SAIDI and SAIFI performance targets based on the actual data for 2013/14.

9 Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, p.10.

component would be subject to revenue at risk as it did not have sufficient historical MAIFI data. It also proposed to apply the telephone answering parameter under the customer service component.[10]

Essential Energy proposed a revenue at risk of ±2.5 per cent, which comprised of ±2.25 per cent for reliability of supply parameters and ± 0.25 per cent for the telephone answering parameter.[11]

For the reliability of supply component, Essential Energy proposed to derive the MED thresholds using the 2.5 beta method, which is consistent with appendix D of the STPIS. It proposed to set its performance targets based on the average performance over the last 5 complete years in accordance without any adjustment. Table 111-3 below sets out Essential Energy's proposed performance targets for unplanned SAIDI and unplanned SAIFI. It also proposed to calculate the incentive rates in accordance with clause 3.2.2 of the STPIS and use the VCR prescribed in the STPIS.[12]

Table 111-3 Essential Energy's proposed performance targets for the reliability of supply component

Year	2014/15	2015/16	2016/17	2017/18	2018/19
Unplanned SAIDI (minutes)					
Urban	80.00	80.00	80.00	80.00	80.00
Short rural	240.6	240.6	240.6	240.6	240.6
Long rural	457.8	457.8	457.8	457.8	457.8
Unplanned SAIFI					
Urban	1.037	1.037	1.037	1.037	1.037
Short rural	2.204	2.204	2.204	2.204	2.204
Long rural	3.153	3.153	3.153	3.153	3.153

Source: Essential Energy, *Attachment 3.2 – proposed application of STPIS*, May 2014, p.7.

For the customer service component, Essential Energy proposed to exclude reliability of supply exclusions from the calculation of telephone answering performance, consistent with clause 3.3 of the STPIS. It submitted its historical data for telephone answering has been manually updated with daily data from the main reporting tool called Symposium and it is not available at this level beyond a rolling 12 months. Essential Energy considered such data is not robust. It noted its new telephony reporting system implemented on 11 January 2014 will improve the reporting of telephone answering data. It proposed to set the telephone answering target at 60 per cent based on less than 3 months' worth of

[10] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS* May 2014, pp. 4–5.
[11] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, pp. 3–4.
[12] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, p. 7.

new telephony data. It also proposed to apply the incentive rate of -0.04 per cent per unit of the telephone answering parameter consistent with clause 5.3.2(a)(1) of the STPIS.[13]

11.3 AER's assessment approach

In developing and implementing the STPIS, we must take into account:

(1) the benefits to electricity consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs; and

(2) any regulatory obligation or requirement to which the DNSP is subject; and

(3) the past performance of the distribution network; and

(4) any other incentives available to the DNSP under the NER or a relevant distribution determination; and

(5) the need to provide incentives that are sufficient to offset any financial incentives the DNSP may have to reduce costs at the expense of service levels; and

(6) the willingness of the customer or end user to pay for improved performance in the delivery of services; and

(7) the possible effects of the scheme on incentives for the implementation of non-network alternatives.

Clause 2.1(d) of the STPIS requires us to determine the following in accordance with the NER and the implementation of the STPIS:

(1) each applicable component and parameter to apply to a DNSP including the method of network segmentation for the reliability of supply component

(2) the revenue at risk to apply to each applicable component and parameter

(3) the incentive rate to apply to each applicable parameter including the value of customer reliability (VCR) to be applied in accordance with clause 3.2.2(d) and appendix B

(4) the performance target to apply to each applicable parameter in each regulatory year of the regulatory control period

(5) any decision with respect to the transitional arrangements set out in clause 2.6

(6) the threshold to apply to each applicable GSL parameter

(7) the payment amount to apply to the applicable GSL parameter

(8) the major event day boundary to apply to a DNSP:

   (a) where the DNSP has proposed a major event day boundary that is greater than 2.5 standard deviations from the mean; or

[13] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, pp. 9–10.

(b) where the major event day boundary that applied to the DNSP in previous distribution determinations was greater than 2.5 standard deviations from the mean; or

(c) where the DNSP has proposed a major event day boundary that is greater than 2.5 standard deviations from the mean and where in previous distribution determinations the major event day boundary that has applied to the DNSP was greater than 2.5 standard deviations from the mean.

We have outlined our likely approach to the application of the STPIS in the Stage 2 F&A. We have adopted the position in the Stage 2 F&A, unless new information has become available which warrants a reconsideration of this position. In such instance, we have considered the relative merits of the alternative against the objectives of the STPIS.

11.3.1 Interrelationships

In applying the STPIS we must consider any other incentives available to the distributor under the rules or relevant distribution determination.[14] One of the objectives of the STPIS is to provide incentives that are sufficient to offset any financial incentives the service provider may have to reduce costs at the expense of service levels.[15] For the 2015–19 regulatory control period, the STPIS will interact with the capital expenditure sharing scheme (CESS).[16] However, for this period we will not apply the expenditure benefit sharing scheme (EBSS) which applies to opex as we have set the opex allowance exogenously.[17]

The CESS rewards distributors whose capital expenditure becomes more efficient. In setting the STPIS performance targets, we will consider both completed and planned reliability improvements expected to materially affect network reliability performance.[18] By setting the performance targets in such a way, any incentive a DNSP may have to reduce the capital expenditure at the expense of target service levels will be offset by the STPIS penalty.

We have not funded Essential Energy with capex or opex allowances to improve its supply reliability for the 2015–19 regulatory control period. Therefore if Essential Energy were to improve its reliability, it should fund the investment itself, which it could do from STPIS rewards. This means it will only earn a financial reward from the STPIS after the investment has delivered a material improvement to the reliability outcomes. Our proposed incentive rates will provide a financial reward that is reflective of customers' value on reliability improvement. The STPIS will ensure that any investment decision to improve reliability will be made efficiently after taking into account the VCR. This leads to more efficient investment outcomes that meet the long term interest of consumers.

11.4 Reasons for draft decision

The following section sets out our consideration in applying the STPIS to Essential Energy for the 2015–19 regulatory control period.

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14 NER, cl. 6.6.2(b)(3)(iv).
15 Cl. 1.5(b)(5) of the STPIS.
16 The Efficiency Benefit Sharing Scheme will not operate for the 2015–19 regulatory control period.
17 AER, *Overview, Essential Energy distribution determination 2014-15 to 2018-19*, November 2014.
18 Included in the distributor's approved forecast capex for the subsequent period.

11.4.1 Applicable components and parameters

We have stated in Stage 2 F&A that:[19]

- performance targets would be set for both SAIDI and SAIFI under the reliability of supply component, with financial incentives attached to each.
- NSW DNSPs' network would be divided into four feeder types (CBD, urban, short rural and long rural).
- we will apply the telephone answering parameter under the customer service component to the NSW DNSPs in the 2015–19 regulatory control period.
- we would not apply the GSL component of the STPIS to NSW DNSPs while the jurisdictional GSL scheme remains in place.

As we have not identified any reasons that we should depart from the above positions, we will apply the SAIDI and SAIFI reliability of supply parameters and the telephone answering customer service parameter to Essential Energy. We will not apply the GSL component of the STPIS to Essential Energy in the 2015–19 regulatory control period as the existing NSW GSL arrangement will continue to apply.

The Consumer Challenge Panel (CCP) suggested that we should consider the inclusion of a public lighting element into the STPIS as it would provide DNSPs with incentives to respond appropriately to the needs of consumers, until there is more contestability.[20] Origin submitted that we should consider broadening the scope of the STPIS to include measures reflecting services that customers value more, this includes timeframe required to visit a customer's premise and re-billing caused by metering errors.[21] We consider these issues would be better addressed when we review our national STPIS. Given there is inadequate time to review our national STPIS to consider these issues before finalising our determinations for the NSW DNSPs, we will not apply those suggested additional components to Essential Energy.

11.4.2 Revenue at risk

Revenue at risk caps the potential rewards and penalties that Essential Energy would receive under the scheme. The STPIS allows us to vary the revenue at risk where this would satisfy the objectives of the scheme. In setting the revenue at risk, we must take into account the benefits to consumers that are likely to result from the scheme, in particular, that the benefits are sufficient to warrant any reward or penalty under the scheme for the DNSPs.

We proposed to set the revenue at risk for the NSW DNSPs within the range of ± 5 per cent in the Stage 2 F&A. In Essential Energy's regulatory proposal, it considered the ±5 per cent revenue at risk to be excessive given the implementation issues with transitioning to a new scheme.[22] Essential Energy proposed to apply a revenue at risk of ±2.5 per cent. Within this there will be a cap of ±2.25 per cent for the reliability of supply component and ±0.25 per cent for the customer service component.[23]

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19 AER, *Stage 2 framework and approach Ausgrid, Endeavour Energy and Essential Energy*, January 2014, pp. 14-15.
20 CCP, *CCP1 submission to AER re NSW DNSPs' regulatory proposals 2014–19*, 15 August 2014, p. 39.
21 Origin, *Submission to Ausgrid, Endeavour, Essential initial 2015-19 regulatory proposal*, August 2014, p. 37
22 Essential Energy, *Regulatory proposal*, *Attachment 3.2 – proposed application of STPIS*, May 2014, p. 4.
23 Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, pp. 3-4.

Through its customer research, Essential Energy found that there was little support for reliability improvement if it involved bill increases.[24] The CCP further suggested that consumers may prefer lower prices for reduced reliability.[25] Under this circumstance, we consider that applying a lower revenue at risk would better meet the objectives of the scheme and the long term interest of consumers as it limits customers' exposure to potential price increases if there is further reliability improvement. Further, as discussed in section 11.4.3, Essential Energy has spent a total of $609 million on reliability and security improvement projects. There is uncertainty as to what this expenditure would deliver in terms of improved supply reliability in the 2015–19 regulatory control period. We have adjusted Essential Energy's performance targets for completed reliability improvement projects that are expected to result in a material improvement in supply reliability. This intended to mitigate the risks of customers paying twice for service improvements that they have already paid. Further, the application of a lower powered scheme (reflecting the lower value on customer reliability) in this instance will reduce the risk of consumers and Essential Energy for paying or receiving inadequate rewards or penalties under the adjusted performance targets.

We accept Essential Energy's proposal that the revenue at risk for each regulatory year of the 2015–19 regulatory control period will be capped at ±2.5 per cent. Within this there will be a cap of ±2.25 per cent for the reliability of supply component and ±0.25 per cent for the customer service component. We consider this lower powered incentive would balance the risk to both consumers and Essential Energy and thus better meet the objectives of the STPIS.

11.4.3 Reliability of supply component

We will apply unplanned SAIDI and unplanned SAIFI parameters under the reliability of supply component to Essential Energy for the 2015–19 regulatory control period. Unplanned SAIDI measures the sum of the duration of each unplanned sustained customer interruption (in minutes) divided by the total number of distribution customers. Unplanned SAIFI measures the total number of unplanned sustained customer interruptions divided by the total number of distribution customers.

MED exclusions

The STPIS allows certain events to be excluded from the calculation of the s-factor revenue adjustment. These exclusions include the events that are beyond the control of Essential Energy, such as the effects of transmission network outages and other upstream events. They also exclude the effects of extreme weather events that have the potential to significantly affect Essential Energy's STPIS performance.

Essential Energy proposed to calculate MED thresholds using 2.5 beta method in accordance with appendix D of the STPIS.[26] We accept this proposed method to calculate the MED thresholds as this is consistent with the position in our Stage 2 F&A.[27] We will apply the exclusions as proposed by Essential Energy and have incorporated our calculation of exclusions into the setting of STPIS targets for this draft decision. Table 111-4 sets out our calculated MED thresholds calculated in accordance with appendix D of the STPIS.

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[24] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, p. 4.
[25] CCP, *CCP1 submission to AER re NSW DNSPs' regulatory proposals 2014–19*, 15 August 2014, p. 12.
[26] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, pp.5-6.
[27] AER, *Stage 2 framework and approach Ausgrid, Endeavour Energy and Essential Energy*, January 2014, p. 14.

Table 111-4 AER calculated MED thresholds (T_{MED})

Regulatory year	T_{MED}
2009/10	7.242
2010/11	6.659
2011/12	5.920
2012/13	5.825
2013/14	5.893

Source: AER analysis.

Performance targets

In the Stage 2 F&A, we proposed to set the performance targets based on Essential Energy's average performance over the past five regulatory years. As we are setting the performance targets for 2015–16 regulatory year onwards, we consider the most recent data is desirable and it is also consistent with the STPIS. We will use historical data for the 2009–10 to 2013–14 regulatory years as the base to forecast service performance.

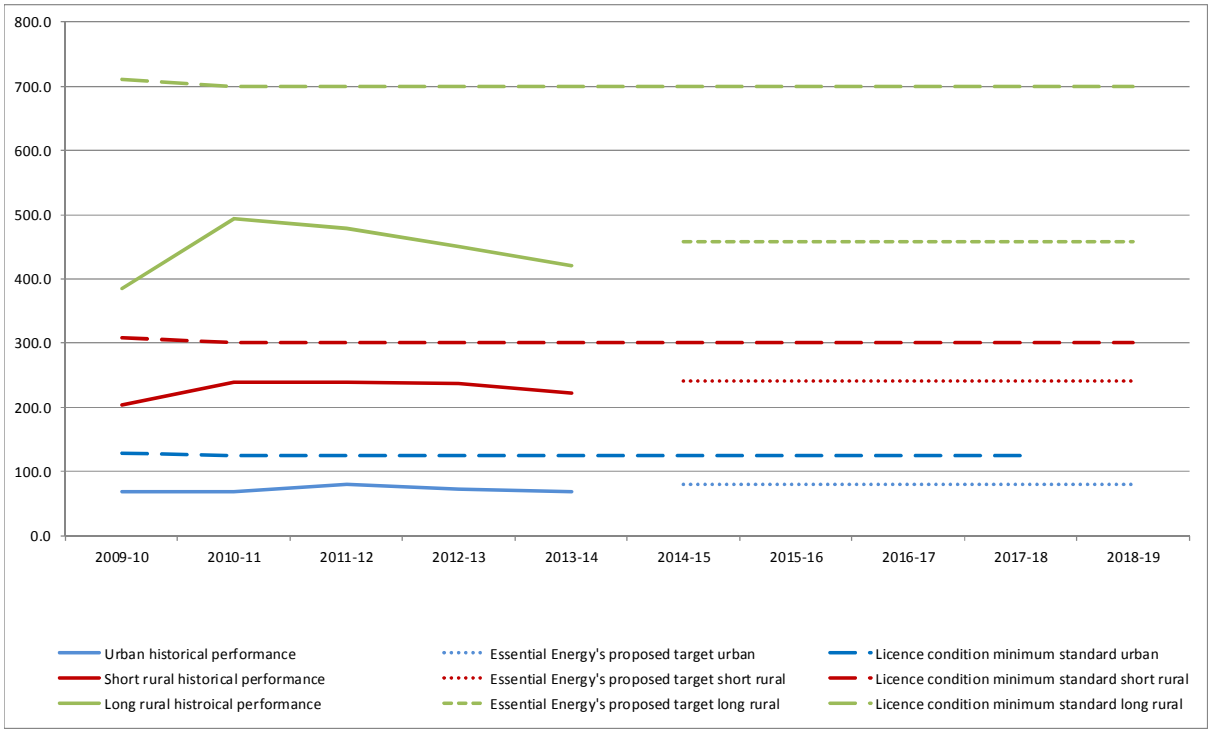
The STPIS requires us to take into account any regulatory obligation or requirement to which Essential Energy is subject to. Essential Energy is required to meet the minimum network overall reliability standards prescribed in schedule 2 of the NSW licence conditions for electricity distributors.[28] We note Essential Energy is currently performing better than these prescribed minimum requirement as illustrated in Figure 111-1 and Figure 111-2. The NSW licence conditions indicate that the DNSP has discretion to plan its investment for compliance with these licence conditions to suit its individual circumstances if it is economically efficient to do so.[29] Essential Energy proposed to set its performance targets based on average performance over the last 5 complete years. [30]

[28] *Reliability and performance licence conditions for electricity distributors – the Hon Anthony Roberts MP Minster for Resources & Energy*, 1 July 2014.

[29] *Reliability and performance licence conditions for electricity distributors explanatory note*, Commencement date 1 July 2014, p. 3.

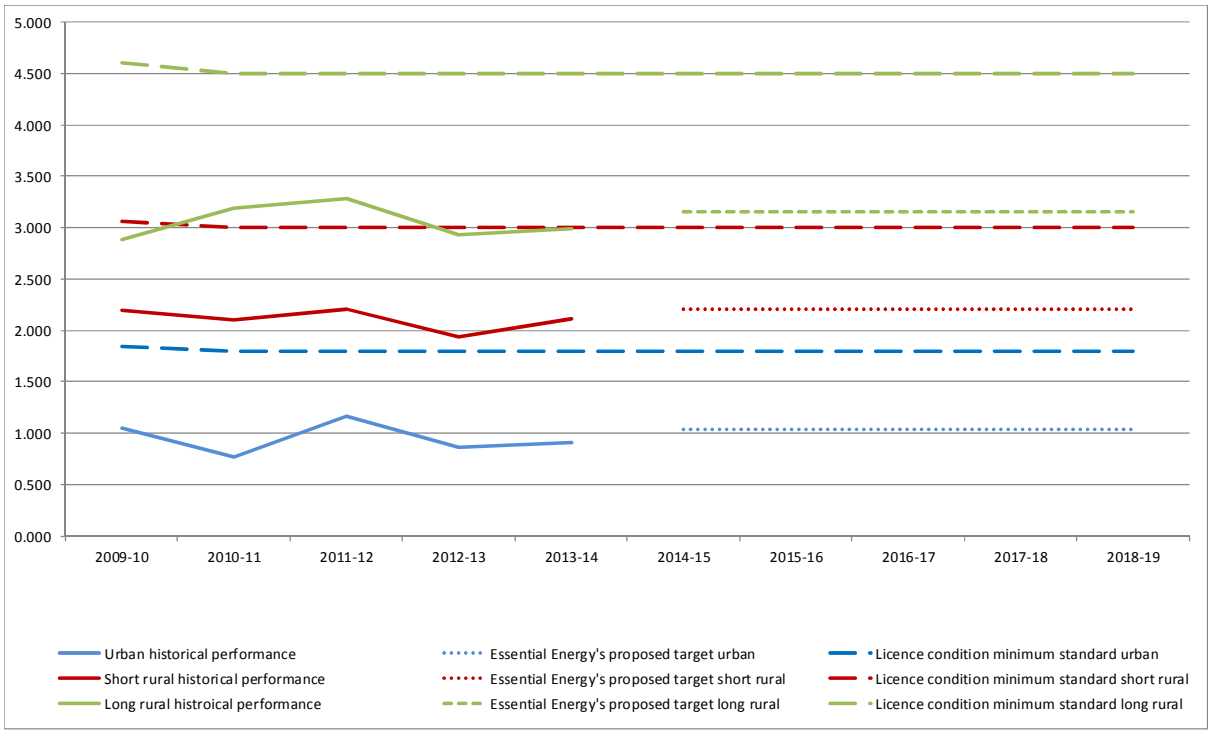
[30] Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, p. 6.

Figure 111-1 Essential Energy's unplanned SAIDI performance, proposed target and minimum standards for all feeder types (minutes)



Source: Essential Energy, *RIN table 6.2.1*; AER analysis.

Figure 111-2 Essential Energy's unplanned SAIFI performance, proposed target and minimum standards for all feeder types (number of interruptions)



Source: Essential Energy, *RIN table 6.2.2*; AER analysis.

Clause 3.2.1(a) of the STPIS states that performance targets for the reliability of supply parameters must be established with reference to average historical performance modified to account for completed or planned reliability improvements and any other factor expected to materially affect network reliability performance.

We do not have a preferred method for how this modification should be undertaken. However, such modification must take account of expenditure programs completed in the previous regulatory period or planned to be undertaken in the next regulatory control period, and the benefits, in terms of improved reliability outcomes, these programs are expected to deliver to the DNSP's network. Any proposed modification will need to be supported by statistical analysis.

The EUAA noted the NSW Government has removed various planning standards and made its reliability standards more flexible. It suggested that the AER should ensure the DNSPs' proposals would reflect the recent changes to reliability standards.[31] The key determinant of a DNSP's reliability performance is its existing network assets and their configuration, which is the result of the DNSP's historical investment and its operating practices. Most of these assets have an expected life in excess of 50 years, therefore by discounting for uncontrollable external impacts such as weather variations, the DNSP's reliability level should not change abruptly. Setting the performance targets based on historical average and adjusted for the results of completed and planned reliability improvement means customers do not pay for historical reliability investment twice.

We note a key driver of the NSW DNSPs' expenditure in the 2009–14 regulatory control period was to augment their networks to meet the previous N-1 deterministic planning standard.[32] Essential Energy reported it has spent around $465 million of capex to meet this planning standard in the 2009–14 regulatory control period. It has also spent an additional $144 million of capex in the same period that would have a direct impact on reliability.[33] That is, Essential Energy has spent a total of $609 million to improve security and reliability of its network during the 2009–14 regulatory control period. The NSW Government has removed this N-1 deterministic planning standard from the licence conditions since 1 July 2014.

Essential Energy submitted that gains realised from the previous capital work have been substantially accounted for by taking the 5 year average, as these gains are built into the performance of the years used to establish the targets. Further it assumed that any small improvements in reliability performance not included in historical averages will be offset by factors that have the effect of degrading network reliability. Therefore Essential Energy did not propose to further adjust the performance targets.[34]

The STPIS scheme requires that the performance targets to apply during the regulatory control period must be based on average performance over the past five regulatory years. It also requires that these averages be modified by any completed reliability improvements that were proposed by the DNSP, and the cost of the improvements allowed by the relevant regulator, in the DNSP's previous regulatory proposal or regulatory submission.[35]

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31 EUAA, *Submission to NSW electricity distribution revenue proposals (2014/15 to 2018/19),* 8 August 2014, pp. 4 & 12.

32 Design, r*eliability and performance licence conditions for distribution network service providers – Ian Macdonald, MLC Minister for Energy,* 1 December 2007, Schedule 1.

33 Essential Energy, *Response to AER Essential 005,* 28 July 2014, pp. 1-8.

34 Essential Energy, *Response to AER Essential 005*, 28 July 2014, p .7.

35 AER, Electricity distribution network service providers—service target performance incentive scheme, 1 November 2009, Clause 3.2.1. (AER, Electricity distribution STPIS, Nov 2009).

In our previous determination, we have set the capex allowance for Essential Energy to meet the N-1 standards. Such expenditure was funded by consumers and included in the Regulatory Asset Base. We consider that the consumers should not pay twice for reliability improvement—once through the Standard Control Service charges and again through the reward received from improvement to supply reliability under the STPIS resulting from such expenditure.

Table 111-5 shows Essential Energy's advice on the estimated effect of its N-1 projects' impact on supply reliability. We consider that all N-1 related projects will have an impact on reliability, and that, in aggregate, this impact will be material given the magnitude of the expenditure.

Table 111-5 Estimated benefits on supply reliability improvement of Schedule 1 (N-1) expenditure by Essential Energy

Expenditure type	Network category	Estimated SAIDI improvement (normalised, minutes)	Estimated SAIFI improvement (normalised, number of supply interruptions)
Sub-transmission N-1 projects	Network overall	1.8	0.0155
Distribution N-1 projects	Urban	(1.18)	(0.0130)
	Short rural	3.28	0.0652
	Long rural	(0.55)	(0.0114)
Combined network wide improvement		3.35	0.0710

Source: Essential Energy[36]

Network security is closely linked to network reliability. Degradation in system security is likely to increase risk of prolonged interruptions to consumers or even equipment damage following a contingency event. The AEMC and some service providers also support this view.[37] While individually, a single N-1 investment project may only address one high risk low probability event, collectively however, the volume of works undertaken for the reported $609 million reliability improvement related and N-1 projects is expected to have identifiable and material impacts in supply reliability for each regulatory year subsequent to their completion.

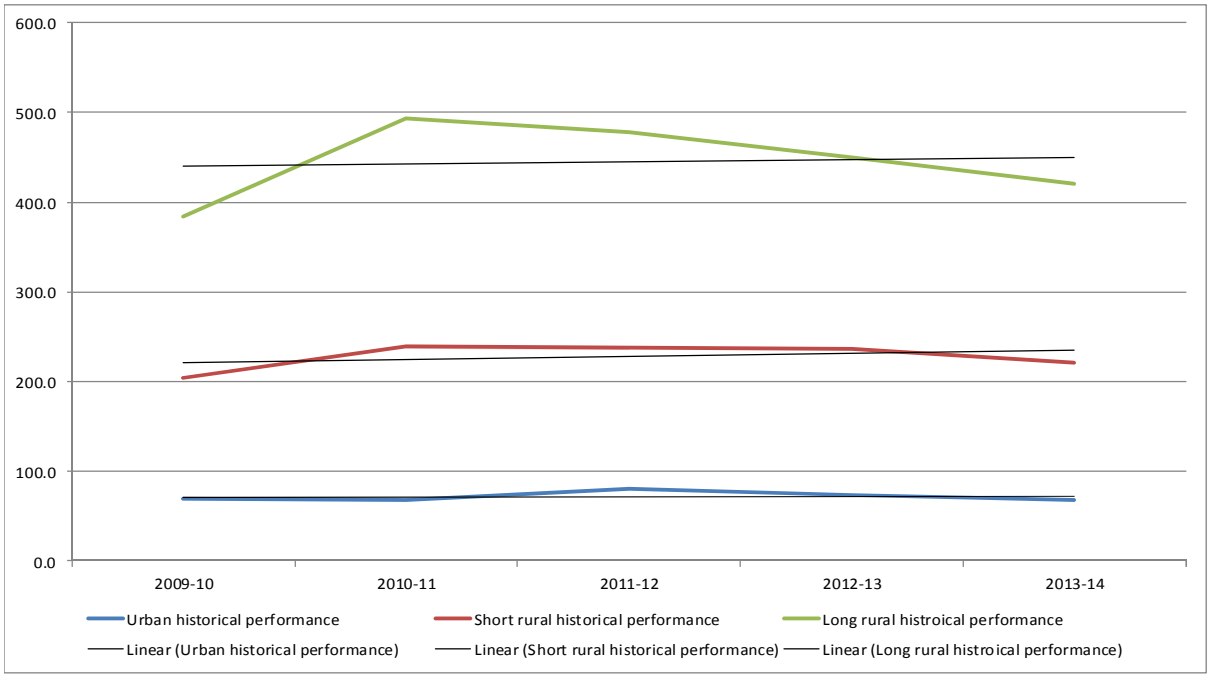
Theoretically, Essential Energy should only invest in reliability and security improvement projects when it considers it is economically efficient to do so. That is the benefits to consumers from the investment should outweigh the cost of such investment. However, this was not the case when Essential Energy undertook those $609 million investment. We estimated the investment of this magnitude should deliver a system SAIDI improvement of around 60 minutes based on the VCR set out in the STPIS.[38] We recognise that Essential Energy was obliged to invest to meet the N-1

[36] Essential Energy, *Response, AER reference No. AER Essential 005,* 28 July 2014, p. 6.
[37] AEMC, Rule determination national electricity amendment (network service provider expenditure objectives) rule 2013, 19 September 2013, p. 17.
[38] We have converted $609 million to the annual cost to customers based on a WACC of 10.02 per cent as determined in the 2009–2014 NSW distribution determination and an assumed asset life of 50 years. This amount is then divided by the customers' value of each lost minute calculated using the VCR set out in the STPIS escalated by the CPI.

requirements in a deterministic manner. While we do not expect the historical investment will actually deliver 60 minutes of improvement, we do expect that material improvement will be delivered in the near future.

The application of our STPIS will ensure that past capital expenditure that resulted in reliability improvements are retained because customers are paying for such historical investment on an ongoing manner. In the absence of reliable expenditure data associated with reliability improvement and a robust method that can precisely quantify the impacts of such investment, we consider it is reasonable to examine Essential Energy's observed historical reliability performance. The EMRF supported the use of historical SAIDI and SAIFI as they represent the unreliability that consumers actually incur.[39]

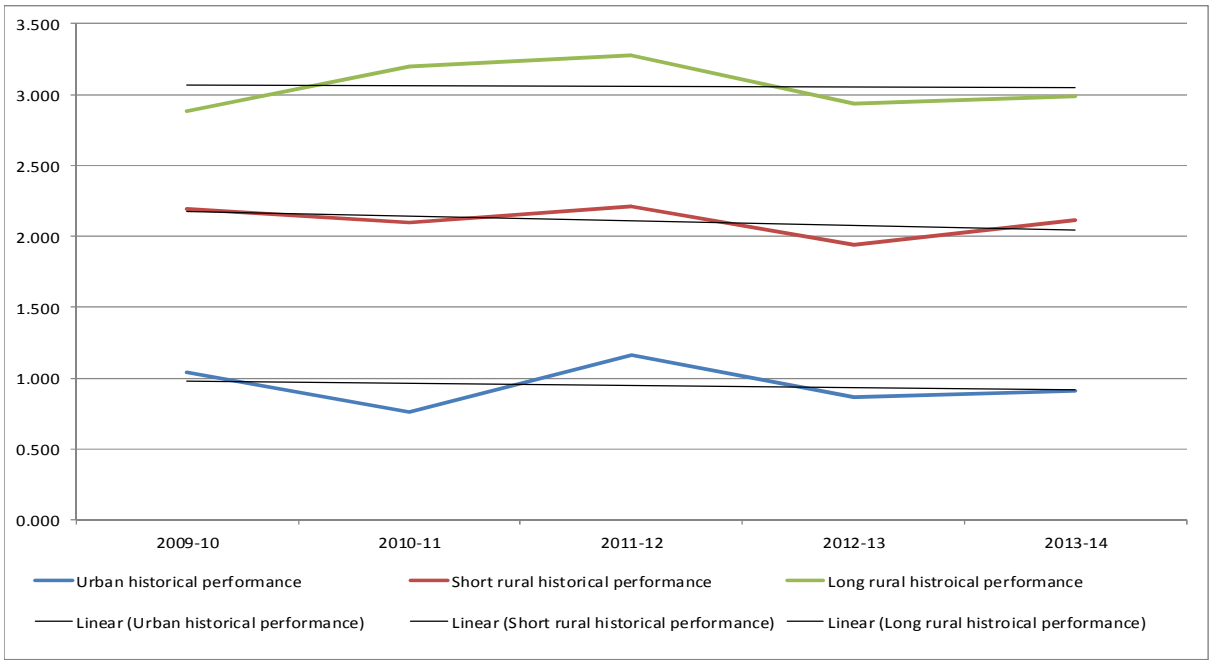
Figure 111-3 Essential Energy's unplanned SAIDI historical performance and trends for all feeder types (minutes)



Source: Essential Energy, *revised RIN table 6.2.1*; AER analysis.

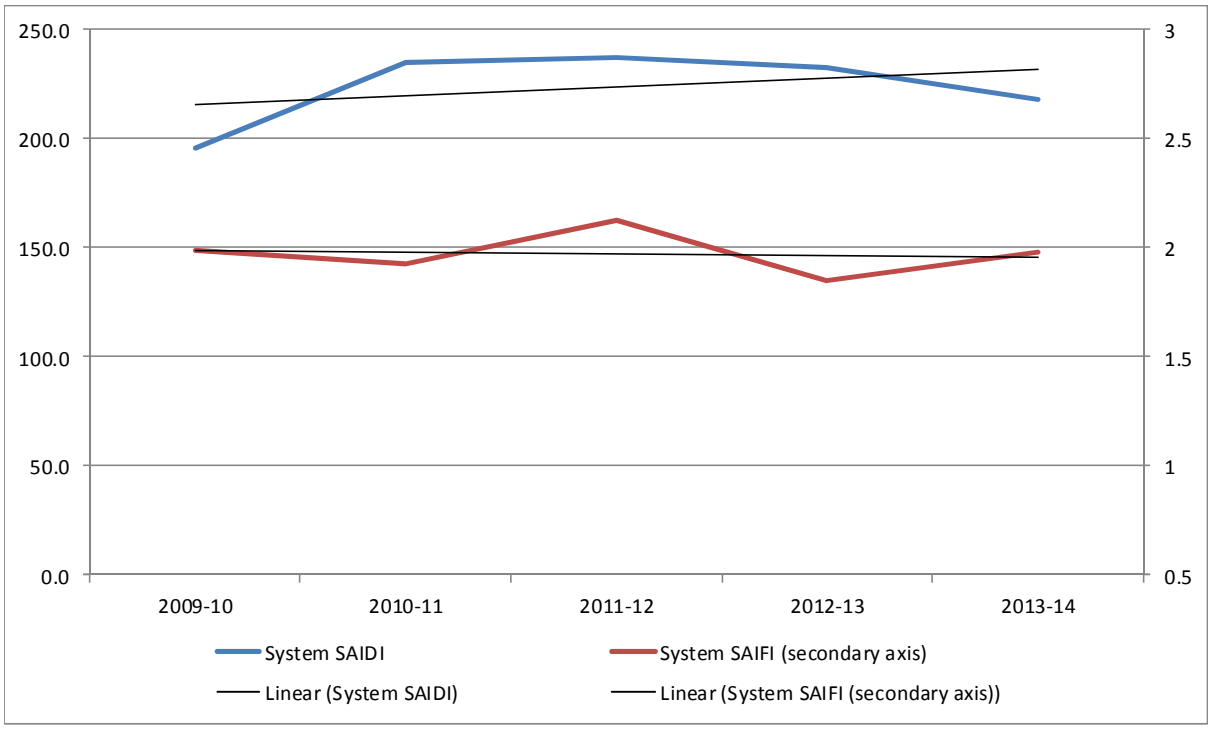
[39] EMRF, *Submission on NSW electricity distribution revenue reset*, July 2014, p. 86.

Figure 111-4 Essential Energy's unplanned SAIFI historical performance and trends for all feeder types (number of interruptions)



Source: Essential Energy, *revised RIN table 6.2.2*; AER analysis.

Figure 111-5 Essential Energy's historical system unplanned SAIDI and SAIFI and trends



Source: Essential Energy, *revised RIN tables 6.2.1 and 6.2.2*; AER analysis.[40]

[40] Note instead of using the total SAIDI and SAIFI number reported by Essential Energy in RIN tables 6.2.1 and 6.2.2, we calculated the system SAIDI and SAIFI based on the reported SAIDI and SAIFI for each individual feeder type and the customer numbers for each feeder type reported in RIN table 6.2.5.

Essential Energy's reliability trends are relatively stable over the current period. We consider that there are two possible explanations for this:

(1) the impact of weather and other external events has negated the N-1 expenditure improvements,

(2) deteriorating reliability performance of the network has negated the N-1 expenditure improvements.

If the stochastic nature of the weather is the reason for the lack of improvement in reliability, this will be apparent in improving future performance and Essential Energy will receive a STPIS reward that will balance the current performance penalties.

Should the reliability performance be a result of an underlying degradation of network performance, then the STPIS scheme is designed to penalise Essential Energy for this outcome and return this penalty amount to the consumer.

Neither of these two scenarios provides justification for us to not apply a reasonable adjustment to the reliability targets to reflect the N-1 expenditures.

We do not observe any obvious overall reliability improvement trend from Essential Energy's performance over the last five regulatory years as illustrated in Figure 111-3 to Figure 111-5, therefore we cannot use a trend analysis for Essential Energy as we have applied to Ausgrid to adjust the performance targets of Essential Energy.[41] However, we still consider some improvement is likely to be evident over the 2015–19 regulatory control period. We have therefore made some small adjustment to capture this likely movement in reliability.

As noted above, in the 2009–14 regulatory control period, Essential Energy has spent:

- $465 million to improve its system security to meet the N-1 planning standard
- $144 million of capex relates to reliability improvements.

Such expenditure represents around 9 per cent of Essential Energy's regulatory asset base. We consider this significant expenditure should deliver a material improvement in reliability performance. However, we do not have a robust method that can precisely quantify the impacts of such investment and the data available to date to show any discernible reliability improvement as a result of such investment. Due to these limitations, we propose to use Ausgrid's performance improvement as a proxy to quantify the potential reliability improvement from Essential Energy's past expenditure.

Ausgrid's unplanned system SAIDI and SAIFI trends are showing sustained improving reliability performance in the past five years. We propose to apply Ausgrid's trend as the benchmark for estimating the potential reliability improvement to account for Essential Energy's $609 million of security and reliability investment in the 2009–14 regulatory control period. We expect a similar level of SAIDI and SAIFI improvement by Essential Energy, after taking into account their relative past investments and sizes.

[41] AER, *Draft decision for Ausgrid distribution determination 2015–19*, November 2014, Attachment 11.

We have apportioned the calculated system SAIDI and SAIFI adjustment percentages for Ausgrid to Essential Energy based on their reported relative N-1 and reliability improvement expenditure in the 2009–14 regulatory control period (E) and their relative total customer numbers (N).[42] That is:

$$A_{Essential} = A_{Ausgrid} \times \frac{N_{Ausgrid}}{E_{Ausgrid}} \times \frac{E_{Essential}}{N_{Essential}}$$

The apportioned SAIDI adjustment for Essential Energy is 3.41 per cent and the apportioned SAIFI adjustment is 7.69 per cent.[43] We have applied these apportioned SAIDI and SAIFI adjustment percentages for Essential Energy to adjust its respective 5 year average performance targets for each feeder type. Table 111-6 sets out our proposed unplanned SAIDI and SAIFI targets for Essential Energy.

Table 111-6 AER proposed indicative performance targets for Essential Energy's reliability of supply component[44]

	Performance target based on five year average	Our proposed performance target	Difference (%)
Unplanned SAIDI			
Urban	71.60	69.15	3.41
Short rural	227.86	220.09	3.41
Long rural	445.32	430.13	3.41
Unplanned SAIFI			
Urban	0.948	0.875	7.69
Short rural	2.111	1.949	7.69
Long rural	3.056	2.821	7.69

Source: AER analysis.

We acknowledge the above adjustment may be imprecise. However, we consider these adjustments reasonably balance the risks of:

[42] We have considered the use of relative RAB to apportion the adjustment instead of customer number, however we noted a few issues with it. RAB can vary based on different previous capex, depreciation and asset ages while the total customer numbers is not subject to such variations. Therefore we consider the total customer numbers are better used for this purpose. We have applied 5.50 per cent reduction to Ausgrid's average unplanned SAIDI targets and 12.38 per cent reduction to Ausgrid's average unplanned SAIFI targets.

[43] We have calculated these adjustments by taking the mid-point of Ausgrid's estimated N-1 and reliability investment of $1.9 billion and the average customer numbers reported by Ausgrid and Essential Energy in RIN table 6.2.5 for the 2009–10 to 2013–14 period.

[44] We have taken Essential Energy's estimated 2013–14 data to set the indicative performance targets for this draft decision. We will set the performance targets for reliability of supply parameters based on the actual 2013–14 data for the final decision once we have verified the data.

- Consumers paying twice for the previously funded reliability improvements if we did not take Essential Energy's historical reliability and security investment into account when setting the performance targets; and
- Essential Energy receiving unreasonable penalties under the adjusted performance targets.

Incentive rates

Clause 6.6.2(b)(3) of the NER stipulates that we must take into account the willingness of the customer to pay for improved service performance when developing and implementing a STPIS. The incentive rates in the STPIS are based on measures of customers willingness to pay for performance, specifically, the value that customers place on supply reliability, referred to as the VCR.

In the Stage 2 F&A, we proposed to apply the method and VCR values in the STPIS to calculate the incentive rates.[45] Essential Energy proposed to apply the VCR as set out in clause 3.2.2(b) of the STPIS and calculate the incentive rates in accordance with appendix B of the STPIS. It has investigated the possibility of selecting an alternative VCR and found there was no substantial reason to do so. However, it noted this view may change once the national VCR review is completed by AEMO and the ENA.[46]

The CCP did not support NSW DNSP's finding that consumers wish to maintain current levels of reliability as consumers were not asked the right questions. The CCP believed that consumers highly value lower prices and may prefer lower prices even if that meant a greater risk of slightly reduced reliability.[47] Similarly, AGL doubted NSW DNSP's ability to link changes in customers' value of reliability to relevant changes in costs using customers' responses.[48]

Clause 3.2.2(a) of the STPIS allows us to apply alternative incentive rates that are not based on the VCR set out in clause 3.2.2(b) of the scheme. When we developed the STPIS, we considered the VCR figures should be based on the most recent documented and robust work on reliability incentive rates.[49] The VCR set out in the current STPIS was based on the 2008 Victorian study conducted by Charles River Associates (CRA) for VENCorp.[50] We propose to apply the 2014 AEMO NSW VCR to calculate the incentive rates for Essential Energy as it better meets the STPIS objective.[51]

We note the AEMO has carried out a review of the VCR and published the final results in September 2014. It surveyed approximately 3000 residential, business and direct-connect customers across all NEM states. It adopted a survey-based choice modelling and contingent valuation approach to derive the VCR values. Its assessment found that residential VCR values have not substantially changed since the 2007–08 values, however, VCR values for the commercial and agricultural sectors are notably lower than the 2007–08 values. It considered that this was the result of increased electricity costs and the implementation of energy efficiency savings by businesses in these sectors.[52]

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45 AER, *Stage 2 framework and approach 2014–2019 Ausgrid, Endeavour Energy and Essential Energy*, January 2014, p. 14.
46 Essential Energy, *Attachment 3.2 – proposed application of STPIS*, May 2014, p. 7.
47 CCP, *CCP1 submission to AER re NSW DNSPs' regulatory proposals 2014–19*, 15 August 2014, pp. 11-2
48 AGL, *Submission on NSW electricity distribution networks regulatory proposals: 2014-19*, 8 August 2014, pp. 12-13.
49 AER, *Electricity distribution network service providers Service target performance incentive scheme*, Final decision, June 2008, p. 17.
50 AER, *Explanatory statement proposed amendment service target performance incentive scheme*, February 2009, p. 16.
51 Note the AEMO NSW VCR represents customers' willingness to pay in both the NSW and the ACT.
52 AEMO, *Value of customer reliability review final report*, September 2014, pp. 1-3.

We propose to apply the 2014 AEMO NSW VCR to calculate the incentive rates for Essential Energy as it better meets the STPIS objective.[53] We consider the AEMO's revised VCR values are robust as it has taken meticulous steps to verify the accuracy of those values. In particular, we note in delivering the final results, the AEMO:[54]

- published an Issues Paper in March 2013, seeking stakeholders' submission on how best to determine the VCR and how would the VCR should be applied
- published a Directions Paper in May 2013, setting out its proposal on how best to measure the VCR
- published a Statement of Approach in November 2013, building on the stakeholder feedback and issues raised over the review process, including consultation with the ABS. The Statement of Approach was complemented by a methodology paper provided by Professor Riccardo Scarpa, setting out the underlying survey design and methodology for calculating VCR values based on a choice modelling technique.
- commissioned a market research firm to undertake pilot surveys in November and December 2013
- held a stakeholder workshop in January 2014 to discuss issues arising from the pilot surveys. The AEMO also updated Statement of Approach detailing the changes made to the survey approach in light of the outcomes from the pilot study
- conducted main surveys from March to July 2014 in line with the approach set out in the updated Statement of Approach
- modelled and analysed results in August and September 2014 and sought Dr Bill Kaye-Blake of PwC in NZ to review the final results.

The 2014 AEMO study is the first time that a VCR study has been carried out to deliver such values on a NEM wide basis. We consider that AEMO's NSW VCR value better reflects the willingness of customers to pay for the reliable supply in the NSW compared to the prescribed VCR that was based on the Victorian study. The AEMO surveys were undertaken in the middle of this year, which would more accurately reveal customers' current value of supply reliably. The sample size of the AEMO surveys is significantly larger than the 2008 CRA study and in presenting its final results, the AEMO has also engaged and consulted with stakeholders extensively. As a result, we consider the 2014 AEMO VCR values provide more reliable and robust results than that set out in the STPIS. The revised AEMO VCR values are lower than the previous values, which is in line with the CCP view that consumers now places less value for reliability.

We propose to apply the revised AEMO NSW VCR of $38,350/MWh to calculate Essential Energy's incentive rates for its urban, short rural and long rural feeder types.[55] We consider this value better meets the STPIS objectives as it takes into account the most recent customers' willingness to pay for improved performance in the delivery of services. Table 111-2 sets out our indicative incentive rates to apply to Essential Energy's SAIDI and SAIFI targets calculated based on this revised VCR value.

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53 Note the AEMO NSW VCR includes survey results of consumers of the ACT.
54 AEMO, *Value of customer reliability review final report*, September 2014, pp. 6-8.
55 $38,350/MWh is the reported 2014 AEMO NSW VCR excluding direct connect customers.

11.4.4 Customer service component

The telephone answering parameter measures the proportion of calls forwarded to an operator that are answered in 30 seconds. In the Stage 2 F&A, we proposed to apply the telephone answering parameter to the NSW DNSPs and to set the performance target on average performance over the past five regulatory years.[56]

Essential Energy proposed to set the telephone answering target at 60 per cent instead of using the average performance for the last five years. It considered its historical data for telephone answering is not robust as its reporting tool is not able to obtain the data beyond a rolling 12 months. It suggested its new telephony reporting system implemented on 11 January 2014 will improve the reporting of telephone answering data and therefore set the telephone answering target at 60 per cent based on less than 3 months' worth of new telephony data.[57]

In reviewing Essential Energy's data for the customer service component, we noticed the information provided under telephone answering did not reconcile with the actual customer service data reported under reliability and customer service table and the two reported data vary significantly. Essential Energy did not correct for those inconsistencies for the 2008–2012 period as the data is not able to be reproduced beyond a rolling 12 months.[58]

Clause 5.3.1(d) of the STPIS specifies that where five regulatory years of data is not available, we may approve a target based upon an alternative methodology or benchmark where this meets the objectives of the scheme. We do not accept Essential Energy's proposed target as it does not meet the objectives of the scheme. Less than three months of data is insufficient to robustly estimate the performance targets for the 2015–19 regulatory control period, Essential Energy also agrees with this view.[59]

As the opex allowance that we have provided in this draft decision is based on the efficient benchmark findings, we should also assess Essential Energy's proposed telephone answering performance target with consideration of an equivalent efficient business. The Victorian DNSPs' performance target provides a reasonable benchmark because they are generally more efficient in network operations.

We consider a reasonable benchmark is the average telephone answering performance of all the Victorian DNSPs as no individual Victorian DNSP represents similar network composition to that of Essential Energy. Table 111-7 indicates the average telephone answering performance target of the Victorian DNSPs is 68.53 per cent. As Essential Energy's proposed performance target is worse than the comparable benchmark, we do not accept Essential Energy's proposed telephone answering target of 60 per cent. We set its performance target based on this benchmark level at 68.53 per cent. We consider this target is conservative as it is lower than the telephone answering targets that we have set for the other NSW DNSPs.[60]

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56 AER, *Stage 2 framework and approach paper*, January 2014, p. 14.
57 Essential Energy, *Regulatory proposal, Attachment 3.2 – proposed application of STPIS*, May 2014, pp. 9-10.
58 Essential Energy, *Response to AER Essential 022*, 17 September 2014; Essential Energy, *Attachment 3.2 – proposed application of STPIS*, May 2014, p.9.
59 Essential Energy, *Attachment 3.2 – proposed application of STPIS*, May 2014, p. 9.
60 AER, *Draft distribution decision Ausgrid 2015–19*, November 2014, attachment 11; AER, *Draft distribution decision Endeavour Energy 2015–19*, November 2014, attachment 11.

Table 111-7 Current telephone answering performance targets for the Victorian DNSPs

	Telephone answering target (%)
CitiPower	71.52
Powercor	64.84
Jemena	61.16
SP AusNet	82.31
United Energy	62.83
Average	**68.53**

Source: AER, *Final decision Victorian electricity distribution network service providers distribution determination 2011–2015*, October 2010, p. 730.

There is some risk that the telephone answering performance for the Victorian DNSPs may not reflect Essential Energy's expected performance. The risk of inaccurate target would be mitigated by reducing the penalty or reward cap on the parameter. As discussed in section 11.4.2, we have accounted for this risk by accepting a lower revenue at risk for the telephone answering parameter capped at ±0.25 per cent.

Consistent with Essential Energy's proposal and clause 5.3.2(a)(1) of the STPIS, an incentive rate of –0.04 per cent per unit will apply to Essential Energy's telephone answering parameter.