Jemena Electricity Networks (Vic) Ltd

2016-20 Electricity Distribution Price Review Regulatory Proposal

Attachment 2-1

JEN service performance

Public

30 April 2015

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ABBREVIATIONS

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
BFMP	Bushfire Mitigation Plan
capex	Capital Expenditure
CESS	Capital Efficiency Sharing Scheme
DNSP	Distribution Network Service Providers
EBSS	Efficiency Benefits Sharing Scheme
ELCMP	Electric Line Clearance Management Plan
EMT	Emergency Management Team
ESMS	Electricity Safety Management Scheme
ESV	Energy Safe Victoria
GSL	Guaranteed Service Level
HBRA	Hazardous Bushfire Risk Area
JEN	Jemena Electricity Networks
LTISR	Lost Time Injury Severity Rate
MED	Major Event Days
MTFP	Multilateral Total Factor Productivity
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
opex	Operating Expenditure
PFP	Partial Factor Productivity
PTFP	Partial Total Factor Productivity
RI	Recordable Injuries
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
Totex	Total expenditure
TRIFR	Total Recordable Injury Frequency Rate
WCFR	Workers Compensation Frequency Rate

OVERVIEW

1. Jemena Electricity Networks (Vic) Ltd (**JEN**) has developed a service model that outlines key drivers of the business and these include safety, service and price levels (see Figure OV–1). Within this model we need to decide what service levels we provide to meet our obligations, what costs we incur in providing our services and how we price our services to recover these costs—however we never compromise on safety.

Figure OV–1: Price and service model

2. This service model has parallels to the elements outlined in the National Electricity Objective (**NEO**); therefore, when coupled with the appropriate indicators, it acts as a tool to measure our overall performance in responding to and facilitating the long-term interests of our customers. JEN captures data and reports it to measure and monitor its performance against each of the elements in the service model over time.

3. Despite the countervailing pressures of balancing the delivery of these key performance indicators, JEN has performed well against all three of them (as shown in this attachment)—this successful outcome is attributed to the strong management, controls and systems employed by JEN.

4. The feedback we received from our engagement with customers, stakeholders and the broader community (detailed in Attachment 4–1) also indicates that our customers believe we have achieved an appropriate balance between these performance metrics that promotes customers' long-term interests.

5. This demonstrates that we act prudently and efficiently in the operation of our network.

1. SAFETY LEVELS

6. JEN takes safety very seriously, making it a key component of the corporate values and culture. To this end JEN has established a core capability to deliver:

- Establishment of safety goals and policies
- Planning and identification of hazards and the assessment and control of risks
- Emergency preparedness and response
- Monitoring, measurement and records management
- Internal audits of procedures and management reviews of the system.

7. By having this capability in place JEN is able to deliver against the safety limb of the National Electricity Objective (**NEO**)[1] and requirements of the Electricity Safety Management Scheme (**ESMS**) to the satisfaction of Energy Safe Victoria (**ESV**).

8. To substantiate JEN's ability to deliver efficient and safe operations and investment, it has implemented a monitoring system that reports key metrics to assess the safety of its operations and physical network to employees, contractors and general public. These indicators are reported internally to check that the systems and controls—necessary to deliver a safe environment—are effective. In addition to the monitoring system, JEN proactively implements safety plans which ensure that it can respond with the appropriate level of action to both minor and major incidents.

9. Collectively our corporate values, systems, controls and plans contribute to the overall safety performance of the business.

1.1 INTERNAL PERFORMANCE MEASURES

10. To ensure safety is at the forefront of management's mind, a series of lag and lead indicators are maintained on a monthly basis and reported against targets. This helps to identify issues in our safety control systems as well as assess management's safety performance. Active monitoring of excursions from expected or historical performance acts as a first alert system to identify and then address root cause safety problems that can be corrected quickly.

Table 1–1: Lag safety indicators, December 2014

Indicator	Definition	Performance (3 year rolling average)(1)
Total Recordable Injury Frequency Rate (**TRIFR**)[2]	The number of Recordable Injuries (**RI**) per million hours worked.	[c-i-c

1 National Electricity Law (**NEL**), cl 7. National Electricity (South Australia) Act 1996

2 This measure is reported in accordance with the AS 1885.1-1990 standard *Measurement of occupational health and safety performance - Describing and reporting occupational injuries and disease (known as the National Standard for workplace injury and disease recording)*, June 1990

Indicator	Definition	Performance (3 year rolling average)(1)
Lost Time Injury Severity Rate (**LTISR**)	The number of days lost (in relation to lost time injuries) per million hours worked	c-i-c
Workers Compensation Frequency Rate (**WCFR**)	Number of serious injury (>5 days lost) workers compensation claims per million hours worked. It is a generally accepted industry measure.	c-i-c
Major environmental incidents	Includes an environmental incident resulting in major consequence for the environment and rectification difficult, including environmental off site release[3]	c-i-c]

Source: [c-i-c]

(1) Actual performance (blue line) is reported against targets (red line)

Table 1–2: Lead safety indicators, December 2014

Indicator	Definition	Performance (CY2014)(1)
Significant investigations closed <3 months	Reports the number of significant incidences not managed with the level of urgency consummate with the impact and consequence of the event	[c-i-c
Significant incident[4] actions closed on time	Reports the number of significant incidences not managed with the level of urgency consummate with the impact and consequence of the event	c-i-c
Audit and inspection actions closed on time (12 month rolling)	Reports the number of actions closed on time	c-i-c
Recycle %	The calculation reports the total recycle volume ÷ all waste volume (2014 was the first year of reporting)	c-i-c]

Source: [c-i-c]

(1) Actual performance (blue line) is reported against targets (red line)

11. Not only is JEN able to demonstrate the implementation of effective controls and systems, it has performed well achieving or closing in on each target.

1.2 SAFETY PLANS

12. JEN has responded to the safety requirements placed on Victorian distribution businesses, with plans to spend further on safety related matters:

[3] [c-i-c]

[4] [c-i-c]

- Electricity safety management scheme – Demonstrates that JEN has built safety procedures into all aspects of its processes that are used and enforced within the business and that these produce measurable results. JEN has made a commitment to delivering its safety program in the 2011 regulatory period and as noted by the ESV, *"[b]ased on the information provided to date, ESV expects JEN to achieve all of the targets agreed."*[5]

- Bushfire Mitigation Plan (**BFMP**) – Articulates the procedures to address the causes and reactions to bushfire situations, including shutting down parts of the network deemed too dangerous to operate in extreme conditions. As noted by ESV, "[t]he audit found that the network assets in HBRA[6] were in good condition"[7] and that "Jemena reported a BMI[8] *of 0.0 in December 2013, indicating that Jemena was well prepared for the 2013-2014 fire danger period*"[9], both confirming JEN's focus on safety.

- Electric Line Clearance Management Plan (**ELCMP**) – Outlines the plans necessary to ensure vegetation does not come into contact with the electricity network, a key contributor in fire starts and other safety related matters.

13. The most recent audit was conducted between 27 September and 1 October 2014, which included a detailed assessment of the electric line clearance in the field. The audit was conducted on JEN in accordance with the agreement with ESV[10]. The audit covered 15 feeders within JEN's licensed boundary in accordance with the areas specified by ESV, which required a total of 1240 kilometres to be driven to achieve the aims of the audit.

> *"In the Auditor's opinion Jemena's vegetation preparedness for the forthcoming fire season is in line with their Electric Line Clearance Management Plans……If the areas audited are representative of all Jemena's operational area then they are in a very good position with their vegetation clearances for the commencement of the fire danger period."*[11]

1.2.1 SUMMER PREPARATION

14. In response to the summer fire season a number of checks are undertaken:

- Operational contingency plan development and demand forecasting - includes development of customer supply contingency plans and load forecasting to identify and manage highly loaded distribution feeders

- Bushfire mitigation summer audits - involves the visual asset inspection of the high bushfire risk area leading into summer and continued audits throughout the summer

- Vegetation control - involves additional patrols of the highest loaded feeders to check clearances

- Protection setting reviews - involve additional review of protection settings of the highest loaded feeders

- Spare equipment reviews - involve the management of distribution transformer and fuse stock levels

- Field resource availability - involves resource rosters, Emergency Management Team (**EMT**), emergency manual updates and training

- Public communication readiness, including customer call centre preparation.

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5 ESV, *Safety Performance Report on Victorian Electricity Networks 2013*, June 2014, p. 11

6 Hazardous Bushfire Risk Area (**HBRA**)

7 ESV, *Safety Performance Report on Victorian Electricity Networks 2013*, June 2014, p. 27

8 Bushfire Mitigation Index

9 ESV, *Safety Performance Report on Victorian Electricity Networks 2013*, June 2014, p. 27

10 ESV, *Bushfire Mitigation Audits July 2014 Scope of Works* and *Briefing Notes for Electric line Clearance Auditing*

11 ESV, *Bushfire Mitigation Line Clearance Audit Jemena Electricity Networks*, December 2014, p.9

1.2.2 COMMUNITY SAFETY

15. Access to electricity infrastructure by unauthorised persons may result in serious injury or death and affect the continuity of electricity supply. JEN goes to considerable lengths to prevent unauthorised access and ensure that assets are secure.

16. The WorkSafe No Go Zone clearance space establishes the minimum approach distance around live electrical assets where a person can work with safety. It includes an allowance for what a person may be holding and the machinery the person may be operating. Due to the potential for such incidents to result in serious injury or death, JEN continues to offer advice and issue permits for work near electric lines and provide information via the Dial Before you Dig service.

2. SERVICE DELIVERY PERFORMANCE

2.1 NETWORK PERFORMANCE

17. A number of key indicators are used by the electricity industry, regulators and government[12] to monitor the reliability performance of electricity networks. These include:

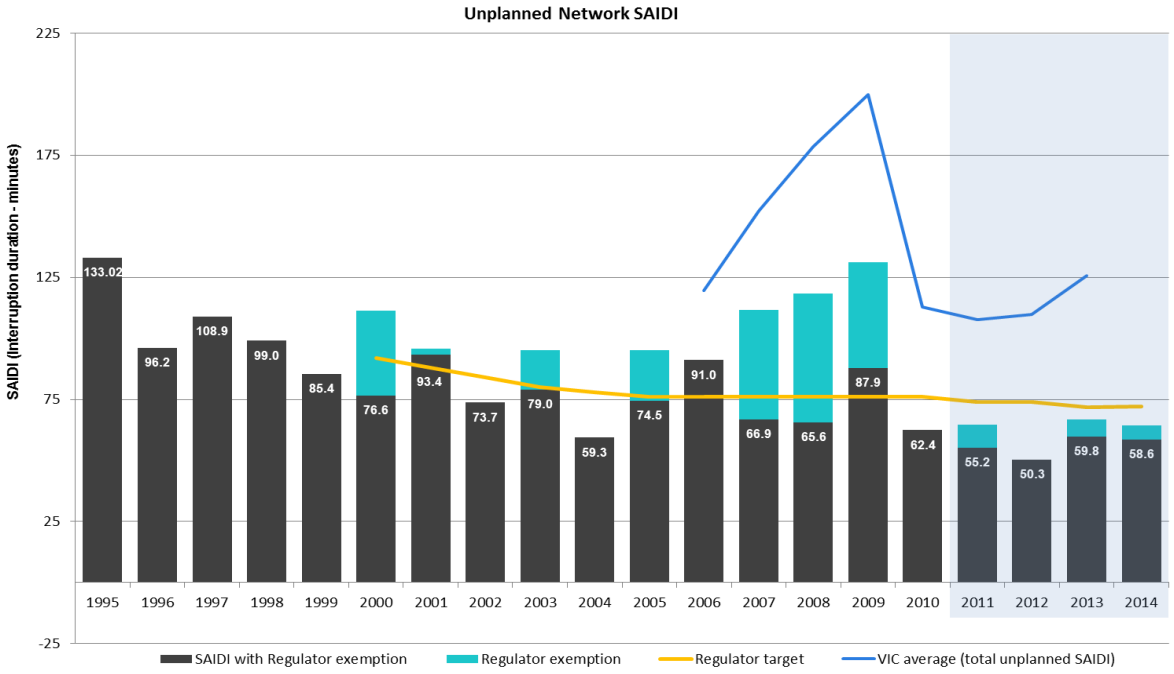
- Outage duration – unplanned System Average Interruption Duration Index (**SAIDI**) measures the total amount of time that customers are not receiving supply outside of planned maintenance periods.
- Outage frequency – unplanned System Average Interruption Frequency Index (**SAIFI**) measures the number of times that customers are not receiving supply outside of planned maintenance periods.

18. These indicators are considered an effective gauge of performance for operating an electricity network because they are the key issues that matter the most to customers service experience.

19. The 2011 regulatory period has yielded a number of challenging climate conditions, including more severe storms, long dry hot spells – conducive to pole top fire ignition – and some of the worst bushfires experienced in Victoria's history. Despite these conditions, we have achieved a strong operational service standard performance outcome relative to history and the targets set for the 2011 regulatory period.

20. As can be observed in Figure 2–1 and Figure 2–2, JEN has delivered consistent improvement in service levels over the long term since the Victorian electricity sector was privatised in 1995. More recently – over the 2011 regulatory period – JEN has maintained its strong performance

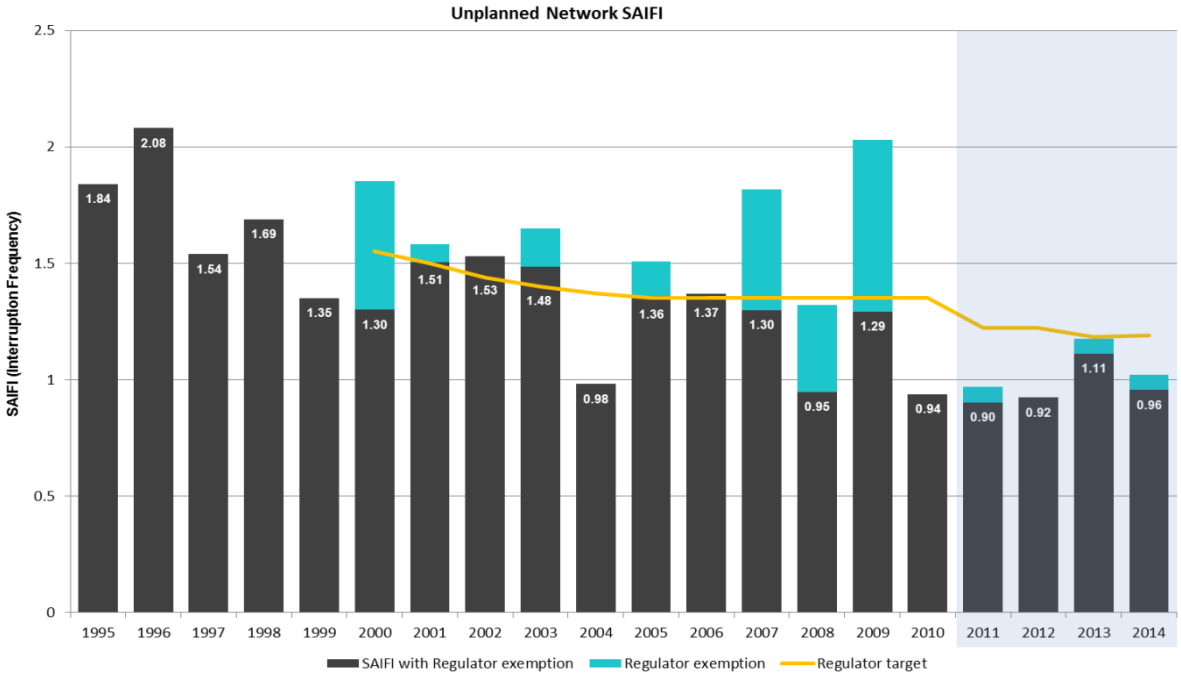
Figure 2–1: JEN unplanned network SAIDI 1995 – 2014



(1) Regulator exemption refers to Major Event Days (**MED**) and other Excluded Events that are excluded from the performance target

12 IEEE Standards Association, *1366-2012 - IEEE Guide for Electric Power Distribution Reliability Indices*, 15 November, 2012

Figure 2–2: JEN unplanned network SAIFI 1995 – 2014



(1) Regulator exemption refers to MED and other Excluded Events that are excluded from the performance target

2.2 CUSTOMER RESPONSE PERFORMANCE

21. Responsiveness to customers is measured through timely performance of restoring supply after outages, delivering customer works, as well as our responsiveness to customer communications.

22. We place customers central to our decision-making and planning, and monitor a range of customer service indicators to ensure we track and improve service performance, and meet the guaranteed service levels as specified in the Electricity Distribution Code[13] and the Public Lighting Code.[14] Our focus for customer service includes:

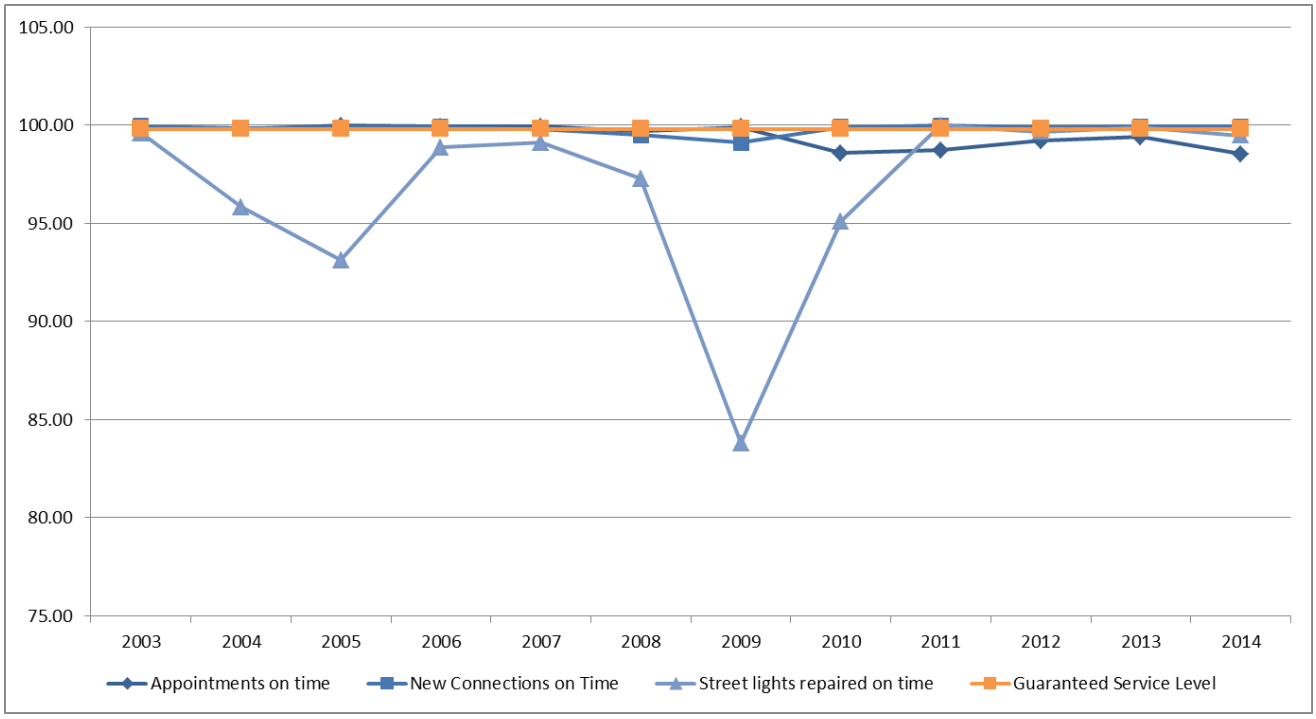
- Meeting customers' appointments on time
- Making supply connections within agreed periods
- Repairing public lights within agreed time periods
- Reducing the number of distribution complaints
- Ensuring timeliness in responding to calls
- Meeting supply interruption and frequency service levels
- Meeting quality of supply targets

13 ESC, *Electricity Distribution Code,* May 2012

14 ESC, *Public Lighting Code,* April 2005

23. Figure 2–3 shows our customer response performance in terms of appointments, new connections and repairs as compared to our Guaranteed Service Level (**GSL**) for the period 2003 to 2014.

Figure 2–3: Customer guaranteed service level performance



Source: JEN, *20 Year Strategic Asset Management Plan - Electricity*, April 2015

24. Customers' experience of responsiveness is a function of asset condition, capacity loading, and JEN's retention of a sufficiently resourced emergency response labour force. Our 20 year strategy reflects us continuing to maintain the levels of responsiveness that our customers have told us they value (see Attachment 4-2).

2.3 CUSTOMER FEEDBACK ON SERVICE LEVELS

25. JEN has undertaken extensive engagement with its customers, stakeholders and broader community in developing its 2016 regulatory proposal. This engagement—including who we engaged with, the feedback we received and how that feedback is reflected in JEN's 2016 regulatory proposal—is detailed in Attachment 4–1.

26. As part of our engagement, we held a focus group and deliberative forum with residential and small to medium business customers to test their preferences in relation to a range of issues affecting our proposal, including the trade-offs we need to make between our costs (and therefore prices) and our service levels.

27. As part of explaining the trade-offs we need to make between costs and service levels, we defined our service levels around four attributes—reliability, responsiveness, visual amenity and customer empowerment. In particular, we focussed on testing the value our customers place on the reliability (representing SAIFI) and responsiveness (representing SAIDI) of our network services.

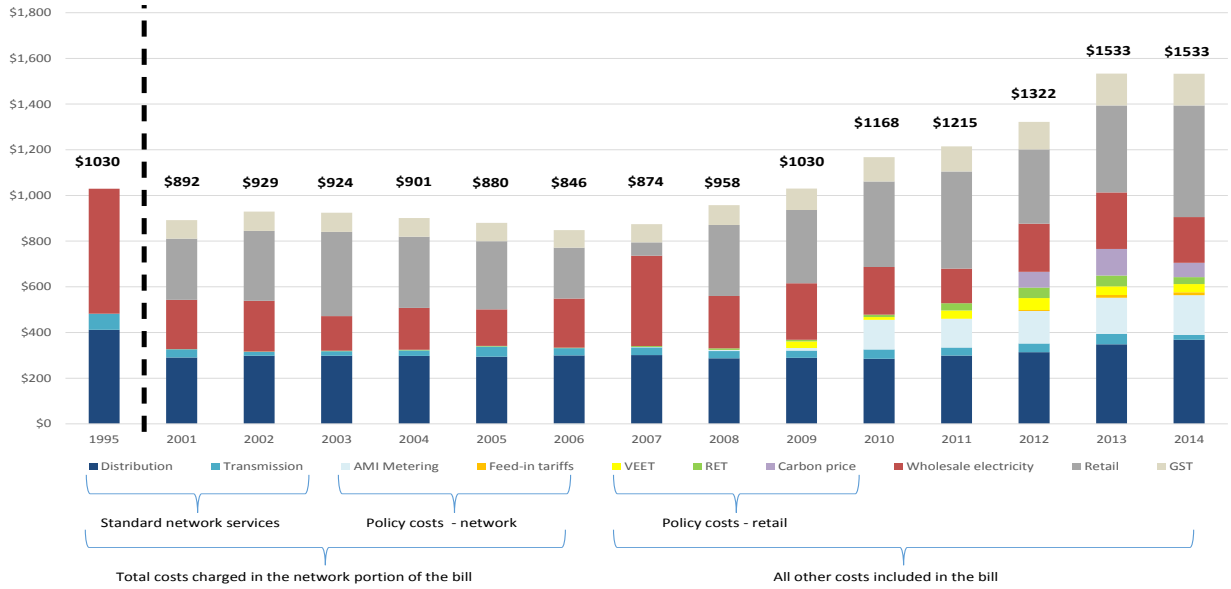
28. Overall, our customers told us that they value the levels of service that JEN currently provides. Customers considered that our services are highly reliable and responsive, with almost 90% of participants rating JEN's performance as either quite good or very good for each attribute. We also explored customers' preferences in relation to changes in these service levels over the long-term, by presenting the incremental customer bill

impact of each change. Customers had a strong preference for us maintaining our current levels of reliability (supported by 85% of participants) and responsiveness (supported by 86% of participants) over the long-term. The full findings of this research are detailed in Attachment 4–2.

3. PRICING PERFORMANCE

29. Over the long-term JEN has delivered lower real prices to its residential customers. Figure 3–1 shows that JEN's distribution prices for residential customers remain below those charged at privatisation in Victoria. This is in contrast to the observed outcomes in other jurisdictions where increases in electricity bills are primarily being driven by the distribution network charges[15].

Figure 3–1: Long term residential price trends[16]



(1) Composition of the annual residential electricity bill in JEN's area (4,000 kWh; w/o electric off-peak hot water), 1995 & 2001 to 2014 ($2014)

(2) The Australian Energy Market Commission (**AEMC**) reports[17] the components of regulated network distribution costs makes up 35% of the market offer price, consistent with the analysis in Figure 3–1.

30. In the Oakley Greenwood report, metering services are isolated as a policy cost due to the mandatory nature of the rollout in the Victorian jurisdiction. However even if these customers were included in the comparative analysis of JEN's controllable costs, the combined distribution charges and smart metering would make up 37% of the total bill, which is still within range from 1995.

31. As outlined in our regulatory proposal, further real price reductions are anticipated for electricity distribution and metering services sustaining the trend of real price improvements for JEN customers.

15 AEMC, *FINAL REPORT, 2014 Residential Electricity Price Trends, To COAG Energy Council*, 5 December 2014

16 Oakley Greenwood , *Causes of residential electricity bill changes in the Jemena service area, 1995 to 2014, prepared for: Jemena*, December, 2014

17 AEMC, *FINAL REPORT, 2014 Residential Electricity Price Trends, To COAG Energy Council*, 5 December 2014

4. COST PERFORMANCE

32. JEN has performed well on costs as demonstrated by the Australia Energy Regulator's (**AERs**) key performance productivity indicators of Multilateral Total Factor Productivity (**MTFP**) and Partial Total Factor Productivity (**PTFP**). This is a demonstration of JEN's effective management and control system making prudent and efficient decisions which ultimately translates to lower prices to customers.

33. Consistent with the findings in the AER annual benchmarking report, JEN notes that the presence of operating environment factors—for example a high proportion of rock in Jemena's distribution area (see Attachment 7-10)—should be considered when examining the results on cost performance[18].

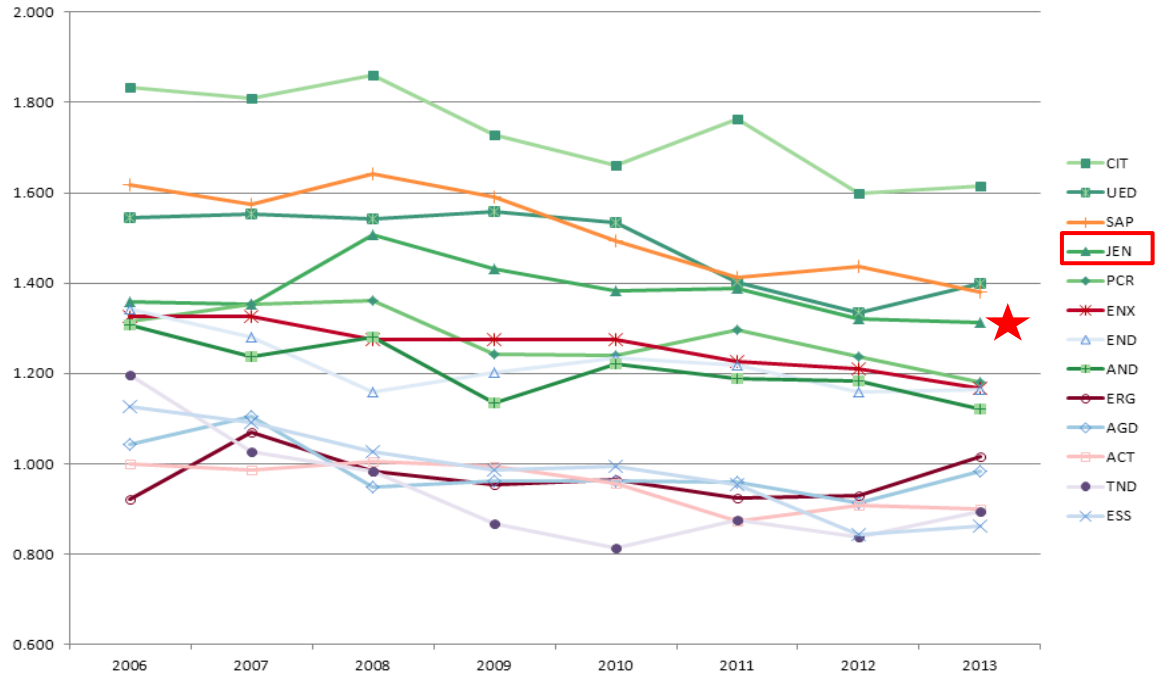
34. Even with our strong performance, JEN cautions on the over reliance on the AER's productivity indicators for efficiency assessment (see Attachment 8–4).

4.1 MULTILATERAL TOTAL FACTOR PRODUCTIVITY

35. Using MTFP techniques the AER can report on the relative efficiencies of each of the distribution businesses operating in the National Electricity Market (**NEM**) for overall costs. Outputs of this technique reveal that JEN has been identified as an efficient operator amongst its peers on a Total Expenditure (**Totex**) basis, (Figure 4–1: MTFP relative performance of each electricity distribution business in the NEM

[18] AER, *Electricity distribution network service providers, Annual benchmarking report*, November 2014, p. 38

Figure 4–1: MTFP relative performance of each electricity distribution business in the NEM[19]



36. It shows that JEN benchmarked as the fourth most efficient business in the NEM in the measurement period. This is unsurprising, as for 20 years we have been responding to incentives as a private company, operating under and Efficiency Benefit Sharing Scheme (**EBSS**) (for 20 years to 2015), and a Capital Efficiency Sharing Scheme (**CESS**) (for 10 years to 2005).

37. Our scale puts us at a disadvantage; JEN benchmarked as the fourth most efficient business in the NEM and are therefore within the top quartile of efficient businesses, relative to our peers.

38. We believe that the AER's benchmarking data is useful to inform some comparisons of relative efficiency between distribution businesses. We note however that the current benchmarking dataset contains mostly estimated historical data and therefore is best applied as a 'first pass' check on the reasonableness of expenditure and to indicate where a deep dive may be required.

39. When making an electricity distribution determination, the AER decides on a distribution businesses' overall revenues. As a consequence, the AER should have regard to the overall efficiency of a distributions business as the primary basis for making a determination, more so than the cost components of operating expenditure (**opex**) and capital expenditure (**capex**) that the AER consider as part of its decision making process.

40. Not only does this go to the outcome objectives of making a revenue determination—rather than an allowance determination for individual expenditure components—but so too does it go to the customer requirements:

- Customer charging – customers receive a single bill for service, not separate charges for each of the allowances

[19] AER, *Electricity distribution network service providers, Annual benchmarking report*, Nov 2014, p. 41

- Long-term interests of customers – under the incentive regime, regulators approve a revenue requirement[20]; it is within these allowances that distributions businesses respond to various commercial drivers to maximise customer benefits. Only by continuously working to optimise the various capex and opex levers on the latest available information can the total benefits be delivered through efficiency sharing schemes such as EBSS and the CESS. Only in total can these schemes be maximised to deliver against the long-term interest of customers.

41. In other words, these schemes can be counted on to improve a customers' long-term interest only if a distribution business's efficiency is assessed in its entirety.

4.2 PARTIAL FACTOR PRODUCTIVITY

42. Partial Factor Productivity (**PFP**) measures attempt to measure the efficiency of capex and opex separately; however the results are broadly consistent with the MTFP results.

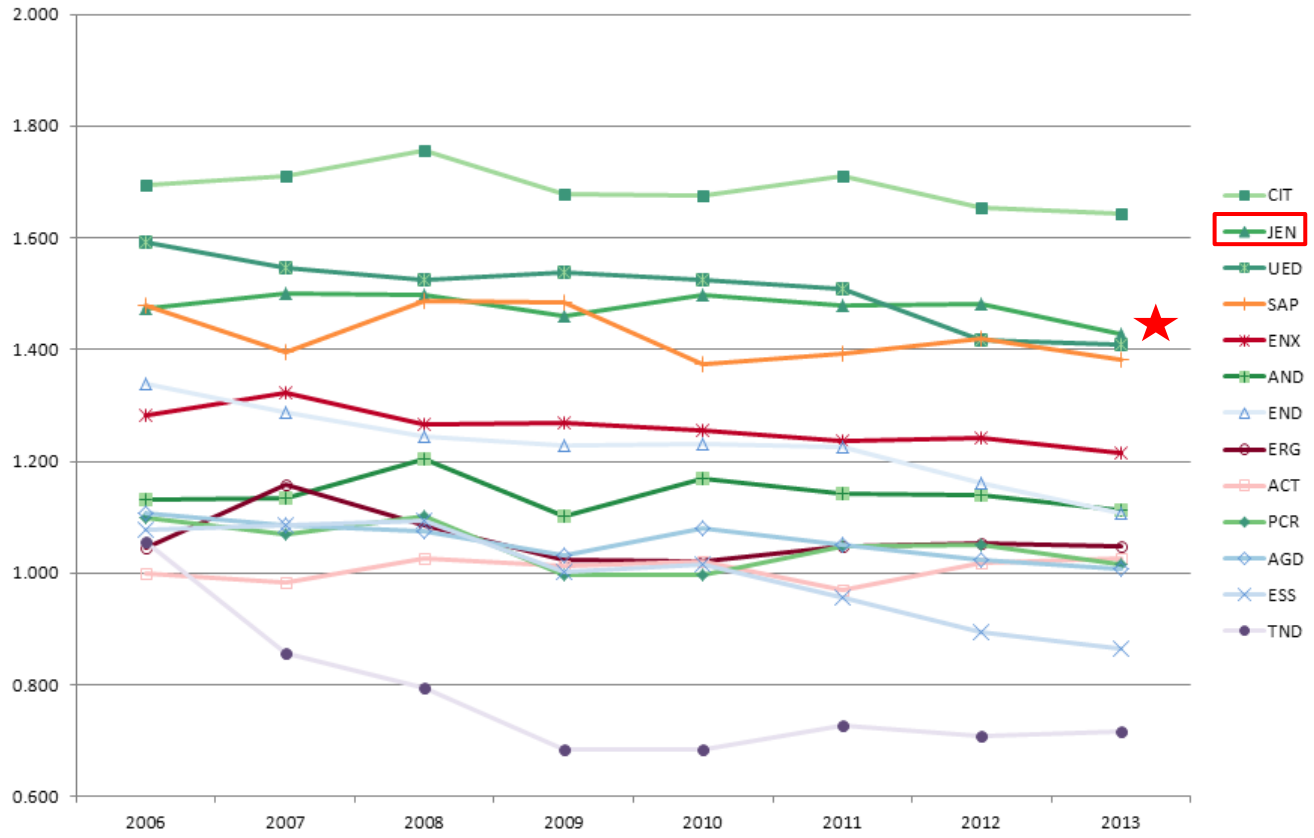
4.2.1 CAPITAL COST EFFICIENCY

43. From a partial performance productivity factor of capital expenditure (transformers, overhead and underground lines) perspective JEN ranks second within the NEM. Figure 4–2 shows JEN's capex PFP index over the period 2006 to 2013, and compares it to the average capex PFP across the NEM and to the average capex PFP of each state. JEN's capex PFP has been greater than the Victorian and NEM averages for the entire measurement period. This shows that we have been efficient when incurring capex.

44. The rankings of the distributors under these results are somewhat different relative to the MTFP results, reflecting the differing input combinations of the networks.

[20] NER Cl. 6.12.1(2)(i)

Figure 4–2: NEM electricity distribution business capex PFP performance over time[21]



(1) Capital items included in the analysis are transformers, overhead and underground lines.

45. Figure 4–2 also shows that returns to scale have been diminishing across the NEM over the measurement period, indicating that there is likely to be a reduced scope for capex productivity growth into the future.

4.2.2 OPERATING COST EFFICIENCY

46. JEN's opex PFP does not rank as well amongst its NEM peers. This can be explained by the fact that:

- The top quartile performance of MTFP is made up of high performance capex which is offset by lower performing opex efficiency
- JEN has made decisions to trade-off opex for capital savings to achieve better outcomes for operating the network in the long-term and as required by the National Electricity Rules (**NER**)[22] (see section 4.3).

47. Our 2014 opex MPFP and TFP performance highlights our sustainable response opex PFP decline in 2012, without neglecting our capex efficiency (i.e. consistent TFP).

48. JEN ranks seventh in opex PFP over 2006-13 across the NEM and is approaching the frontier firm over recent years.

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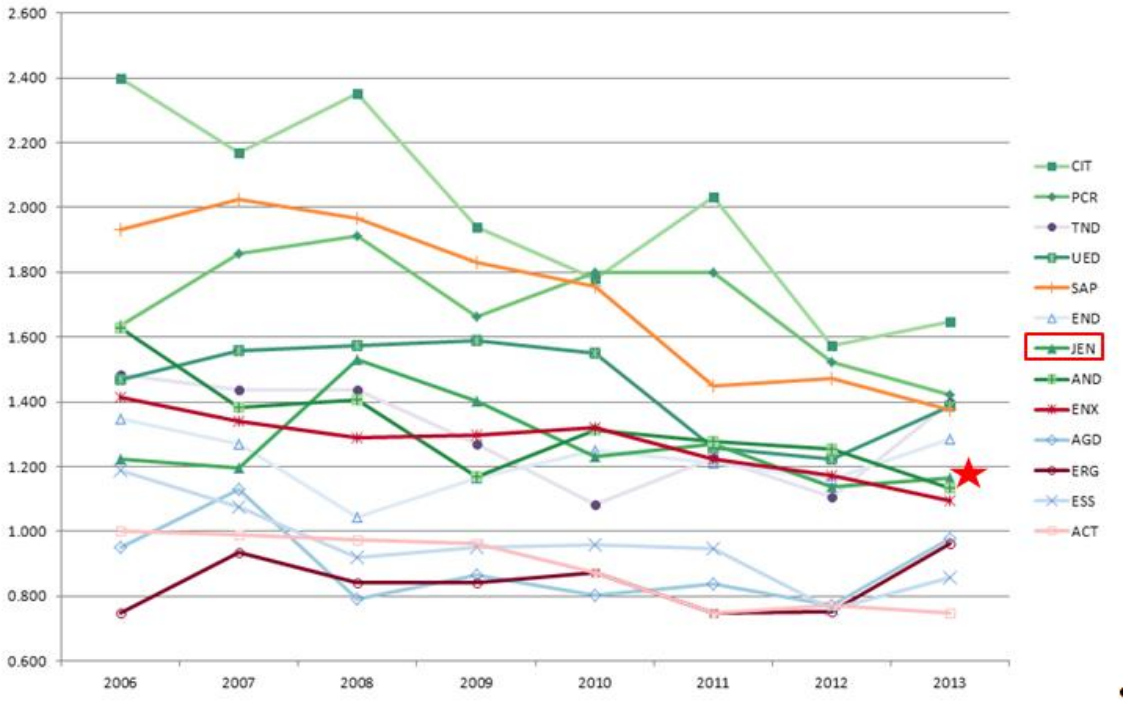
21 AER, *Electricity distribution network service providers, Annual benchmarking report*, November 2014, p. 45.

22 NER cl. 6.5.6(e)(7)

Figure 4–3: Relative capex/opex trade off in the NEM



4.3 CAPEX/OPEX TRADE-OFF

49. When making an electricity distribution determination the AER must take into account a range of factors including the requirement to meet the opex objectives[23] and capex objectives.[24] Both opex and capex are important factors to determining allowances, regard must be given to the requirement to consider the trade-offs between the two.[25]

50. JEN takes its obligations in making expenditure decisions seriously and looks to optimise these on a continual basis. This may result in spending opex instead of planned capex—or vice-versa—depending on the circumstances at the time. JEN is particularly capable of delivering against this trade-off objective being one of the highest ranked electricity distribution businesses for managing the trade-off requirement.[26]

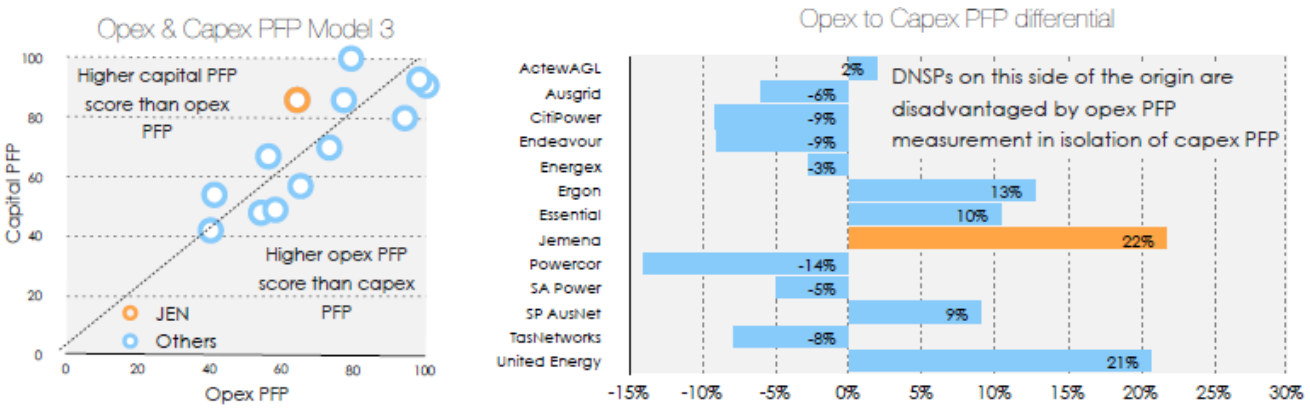
23 NER, Cl. 6.5.6

24 NER Cl. 6.5.7

25 NER 6.5.6(e)(7)

26 Huegin, *Jemena Electricity Networks (Vic) Ltd Productivity Study Efficiency and growth for the 2015-20 regulatory period*, Mar 2015

Figure 4–4: Relative capex/opex trade off in the NEM[27]



51. When considering JEN's cost efficiency, relative performance must be taken into account and therefore the AER should consider the MTFP performance as the primary indicator of efficiency.

[27] Heugin, *Jemena Electricity Networks (Vic) Ltd Productivity Study Efficiency and growth for the 2015-20 regulatory period*, March 2015, p37