Jemena Electricity Networks (Vic) Ltd

2021-26 Electricity Distribution Price Review Regulatory Proposal

Attachment 07-02

Rate of return

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Glossary

Current regulatory period	The regulatory control period covering 1 January 2016 to 31 December 2020
Intervening period	The six months between the end of the current regulatory period and beginning of the next regulatory period covering 1 Jan 2021 to 30 Jun 2021
Next regulatory period	The regulatory control period covering 1 July 2021 to 30 June 2026
RoR Instrument	AER's 2018 Rate of Return Instrument

Abbreviations

AER	Australian Energy Regulator
CAPM	Capital Asset Pricing Model
CEG	Competition Economists Group
EDPR	Electricity Distribution Price Review
ENA	Energy Networks Australia
ERA	Economic Regulation Authority
FY	Financial Year
HY2021	Half year Jan to June 2021
JEN	Jemena Electricity Networks (Vic) Ltd
JGN	Jemena Gas Networks
MRP	Market Risk Premium
NEO	National Electricity Objective
PTRM	Post Tax Revenue Model
QTC	Queensland Treasury Corporation
RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia
RoR	Rate of Return
SAPN	South Australia Power Networks
WPI	Wage Price Index

1. Overview

The return on capital for each regulatory year of the regulatory control period must be determined by applying the allowed rate of return to the value of the regulatory asset base (**RAB**) at the start of that year.[1] The allowed rate of return is the benchmark rate of return that we can expect to earn on our RAB and is intended to compensate investors for the risks and costs they bear when investing funds.

The allowed rate of return must be calculated in accordance with the Australian Energy Regulator's (**AER**) Rate of Return Instrument published in December 2018 (**RoR Instrument**).[2] The RoR Instrument is binding on JEN and the AER in making a distribution determination.

An accurate estimate of the allowed rate of return, which is not too high or too low, promotes the long-term interests of our customers by ensuring that prices are no higher than necessary to promote efficient investment in our network to provide distribution services.

Our proposal involves a significant reduction in the allowed rate of return to 4.80% from 6.37% which applies in the 1 January 2016 to 31 December 2020 Regulatory Control Period (**current regulatory period**). Further, our proposed rate of return is lower than that allowed in any of our previous regulatory control periods. The reduction in the allowed rate or return will contribute to making our distribution services more affordable for our customers.

However, as set out in this attachment, we have some concerns with the outcomes of applying the RoR Instrument for the next regulatory period along with AER's forecast inflation approach. The AER should consider the current unprecedented low interest rate environment which has resulted in a significantly drop in the proposed revenues of network businesses like JEN. Despite the lower revenues it is important businesses have sufficient, predictable and stable cash flows to ensure they meet their expenditure and financing requirements.

This attachment sets out JEN's proposed allowed rate of return for the Regulatory Control Proposal period covering 1 July 2021 to 30 June 2026 (**next regulatory period**) and is structured as follows:

- section 2 summarises our estimate of the rate of return
- section 3 explains how we have estimated the return on equity
- section 4 explains how we have estimated return on debt
- section 5 explains issues relating to forecast inflation.

1 NER cl 6.5.2.

2 NER chapter 10, definition of "allowed rate of return".

2. Our estimate of the rate of return

2.1 Our approach to estimating the rate of return

The RoR Instrument sets out the methodologies and parameters to be used in estimating return on equity and debt, having regard to a wide range of information. The RoR Instrument currently in force was made by the AER in December 2018.

In making the current RoR Instrument, the AER decided to vary its estimates of certain parameters from those that it had adopted for the current regulatory period. Specifically, in the RoR Instrument the AER had determined to:

- lower the estimated market risk premium from 6.5% to 6.1%
- lower the assumed equity beta from 0.7 to 0.6
- increase the estimated value of imputation credits ("gamma") from 0.40 to 0.585.

All of these changes have the efffect of reducing the revenue allowance for our cost of financing and corporate tax. In addition, Government bond yields since 2016 have lowered to unprecendented level resulting in the estimated cost of equity under the AER's return on equity model (i.e. the Sharpe-Lintner capital asset pricing model (**CAPM**)) being lower than the estimated cost of debt.

Overall, the AER's RoR Instrument for the next regulatory period delivers a significantly lower rate of return allowance of 4.80% than compared to 6.37% in the current regulatory period.

2.2 Our placeholder rate of return

We have applied the new RoR Instrument to calculate a placeholder rate of return of 4.80% for Financial Year (**FY**)22. Our calculation is based on the parameters in Table 2–1.

Table 2–1: Placeholder rate of return

Parameter	Value
Return on equity	4.70%
Return on debt	4.87%
Leverage / gearing ratio	60.00%
Gamma	58.50%
Corporate tax rate	30.00%
Nominal Vanilla WACC	**4.80%**

Note: The return on equity values are estimated using placeholder averaging periods (20 business days to 30 Sep 2019). The placeholder annual debt observations for the next regulatory period are based on the most recent actual debt observation (CY20).These values will be updated for the actual averaging periods as proposed in confidential Attachment 07-03 *Averaging periods*.

This is a placeholder rate of return at this stage, because it is based on a 'placeholder' averaging period for risk free rate and placeholder forecasts for the return on debt. We will update the rate of return for each regulatory year of the next regulatory period using the averaging periods as proposed in confidential Attachment 07-03 *Averaging periods* and then annually as a result of the annual update of the return on debt.

This rate of return is lower than the rate of return in our draft plan,[3] which was 5.67%. This is due to a significant reduction in the return on equity driven by lower government bond yields. This rate of return of 4.80% is also significantly lower compared to the 6.37% that applied from the start of the current regulatory period. [4]

While we have applied the RoR Instrument in full to derive the rate of return above, we are concerned when the compensation for taking long term investment risk yields a return on equity which is below the return on debt allowance, with potential for even lower risk free rates by the time the AER's final decision is made. This outcome along with AER's inflation forecast approach results in a rate of return which is unlikely to attract capital on a long-term sustainable basis, inconsistent with the National Electricity Objective (**NEO**) and the Revenue and Pricing Principles set out in the National Electricity Law (**NEL**). We discuss this under Section 5 on forecast inflation.

Therefore, we recommend that the AER should consider the current unprecedented low interest rate environment which has resulted in a significantly drop in the proposed revenues of network businesses like JEN. Despite the lower revenues it is important businesses have sufficient, predictable and stable cash flows to ensure they meet their expenditure and financing requirements.

3 Jemena Electricity Networks (Vic) Ltd (**JEN**), *Jemena Electricity Networks, Draft 2021-25 plan*, 31 Jan, 2019, Table 7.1.

4 AER, *Final decision Jemena – Post Tax Revenue Model (incl depreciation tracking) – May 2016.xls*.

3. Our estimate of the return on equity

We estimate a placeholder return on equity of 4.70%. This has been determined by applying the RoR Instrument. In particular we adopt:

- The return on equity formula in clause 4 of the RoR Instrument: risk free rate + equity beta x market risk premium
- Risk-free rate based on an average of the yield on 10 year Commonwealth Government Securities over an averaging period of between 20 and 60 business days. JEN is free to select an averaging period subject to the requirements of the RoR Instrument. The AER will replace the below placeholder risk-free rate with the risk-free rate in the nominated averaging period using the method outlined in clause 4 of the RoR Instrument and the nominated averaging period we have proposed in confidential Attachment 07-03 *Averaging periods*
- Point estimates for equity beta and the market risk premium (**MRP**) as set out in the RoR Instrument.

The values of these parameters are detailed in Table 3–1.

Table 3–1: Return on equity parameters

Parameter	Assumption
Risk free rate averaging period	20 business days to 30 September 2019 [Placeholder]
Risk free rate (%)	1.04 [Placeholder]
Equity beta	0.6
MRP (%)	6.10
Return on equity (%)	4.70

Note: The risk-free rate is estimated using a placeholder averaging period. The estimate will be updated for the averaging period proposed in confidential Attachment 07-03 *Averaging periods*.

4. Our estimate of the return on debt

The RoR Instrument requires the return on debt to be calculated using a trailing average portfolio approach following a transition from the on-the-day approach. This means that the return on debt, and therefore the rate of return, is updated every regulatory year of the next regulatory period.

We began our transition to the full trailing average approach in calendar year (**CY**)16 and will complete the transition at the end of the next regulatory period. From FY27, we will calculate the return on debt as the simple average of the debt yields during our averaging periods over the previous 10 years.

The AER has updated the return on debt for the first five years of the transition period, CY16 to CY20. We have forecast the placeholder return on debt based on the latest updated return on debt for CY20 and implemented the AER guidance on how to apply the RoR Instrument with the transition from calendar year to financial year. The key amendments include: [5]

- The AER will move the return on debt trailing average to financial years by using a 6 month intervening period from 1 Jan 2021 to 30 June 2021
- This intervening period will be followed by 5 regulatory years, each 12 months long, with the first of these regulatory years commencing on 1 July 2021
- All historic years since CY16 (including HY2021) feed into the return on debt calculation. The algebra for this is set out in the modified clause 9, which replaces clause 9 of the RoR Instrument for the five Victorian electricity distribution networks.
- Future weightings applied to historically set annual return on debt numbers (as set out in modified clause 9) have been adjusted so there is no change in aggregate future weightings relative to the status quo and there are 11 periods in the trailing average return on debt.

Table 4–1 details our actual return on debt as determined by the AER to date and our proposed placeholder return on debt estimates to FY26.[6]

Table 4–1: Return on debt (%)

Regulatory year	Annual bond yields during averaging period	Trailing average return on debt	Basis
CY16	5.62%	5.62%	Actuals as determined by AER
CY17	4.60%	5.52%	Actuals as determined by AER
CY18	4.74%	5.43%	Actuals as determined by AER
CY19	4.69%	5.34%	Actuals as determined by AER
CY20	3.74%	5.15%	Actuals as determined by AER
HY2021 (Jan 21-Jun 21)	3.74%	4.96%	Placeholder
FY22	3.74%	4.87%	Placeholder
FY23	3.74%	4.68%	Placeholder
FY24	3.74%	4.49%	Placeholder
FY25	3.74%	4.30%	Placeholder

[5] AER, *DORIS - D19-155548 Application of the 2018 RoR Instrument to Vic DNSPs from 1 Jan 2021 - 4 October 2019,* received via email dated 4 Oct 2019.

[6] The formulae for estimating the return on debt for the intervening period and the next regulatory period is provided in Attachment 07-16 *Rate of return model*.

Regulatory year	Annual bond yields during averaging period	Trailing average return on debt	Basis
FY26	3.74%	4.11%	Placeholder

As noted above, the return on debt estimates for the HY2021 and the five subsequent regulatory years are placeholders at this stage, based on placeholder estimates for future debt observations. In accordance with the RoR Instrument, the return on debt will be updated annually.

Our proposed return on debt applies the RoR Instrument's methodology by:

- Adopting the term of debt (10 years)
- Adopting the BBB+ credit rating
- Estimating the 10 year BBB+ return on debt for averaging periods that relate to the next regulatory period by:
  - giving equal weight to 10 year estimates from the data providers: Reserve Bank of Australia (**RBA**), Bloomberg and Thompson Reuters
  - giving a 1/3rd and 2/3rd weight to the respective data providers' A and BBB curves for each data provider
  - where necessary, adopting the RoR Instrument approach to extrapolating estimates to 10 years maturity.
- Accepting the conditions for nominating averaging periods. Our confidential nominated averaging periods for the next regulatory period are detailed in Attachment 07-03 *Averaging periods*.

5. Forecast Inflation

5.1 Expected inflation

The post-tax revenue model (**PTRM**) is required to include a method that the AER determines is likely to result in a best estimate of inflation.[7] The PTRM uses forecast inflation to calculate the indexation of RAB and to convert values from real to nominal dollars. The nominal rate of return also implicitly includes an allowance for forecast inflation.

The AER has described its preferred approach to forecasting inflation as follows:

> *The approach we currently use is relatively simple and transparent and has been employed in all of our decisions since 2008. We use forecasts of inflation published by the Reserve Bank of Australia (RBA) for the next two years, which is the limit of this forecast series. We combine these two values with the mid-point of the RBA's target band for inflation (currently 2.5 per cent) to extend the series out to ten years. The estimate of expected annual inflation is then the average of these ten yearly figures.*[8]

In this way, the AER takes a 10-year geometric annualised average of the RBA's forecast headline rate for two years and the mid-point of the RBA target inflation band for eight years.

Our placeholder expected inflation is 2.37% which will be updated by the AER using the latest, RBA Statement of Monetary Policy at the time of the AER's final decision.

Although we have applied the AER's preferred method as a placeholder in our PTRM we recommend the AER re-consider its approach and apply a more market based approach that is not undercompensating the businesses. We explain this below.

5.2 Inflation risk for equity investors

In the current market conditions we do not believe that the AER's approach produces a reasonable estimate of inflation, or provides JEN a reasonable opportunity to recover an efficient cost of capital. This has been demonstrated by analysis presented by the Energy Networks Australia (**ENA**), Jemena Gas Networks (**JGN**)[9], SA Power Networks (**SAPN**) and Queensland Treasury Corporation (**QTC**).[10]

The NEO seeks to promote efficient investment in, and efficient operation and use of electricity services for the long term interests of customers. In support of these objectives, Revenue and Pricing Principles set out in the NEL allows investors a reasonable opportunity to recover efficient costs of investment. The regulatory models give effect to this by a nominal return on capital allowance and indexation of the RAB to compensate for funding investment. To avoid double compensation for inflation the regulatory models also remove indexation of the RAB through the regulatory depreciation building block. However, the regulatory models assume nominal cash interest payments to debt holders which means that the indexation of RAB compensation goes to the equity holders and therefore the entire reduction for indexation through the regulatory depreciation is from the return on equity.

The equity holders will only receive cash dividends if the nominal return on equity allowance is higher than the indexation of RAB deducted through the regulatory depreciation building block. In the current market conditions the RoR Instrument is delivering a very low return on equity of 4.70%. If the AER was to reduce the return on equity using its inflation forecast approach (which delivers 2.37%) then the return on equity will need to be reduced by 5.93% (2.37%/0.4 where 0.4 is the benchmark equity portion of investment). This leaves no cash to be paid

7 NER cl 6.4.2(b).

8 AER, *Regulatory treatment of inflation - Final position*, December 2017, p 11.

9 JGN, *Attachment 7.2 - Response to draft decision - Inflation*, January 2020.

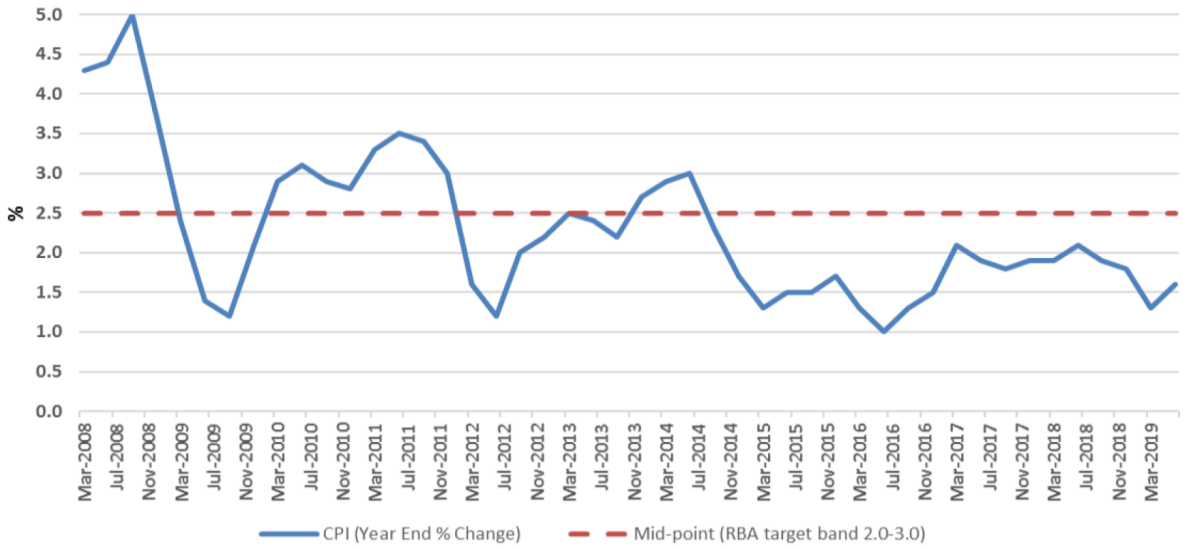
10 Estimation of Expected Inflation, 7 November 2019; Issues raised by QTC at the Inflation Working Group meeting, 9 Nov 2019; SAPN – 2020-25 Revised Proposal Attachment 3 Rate of Return.

as dividends to equity holders as the 5.93% deduction is greater than the nominal return on equity allowance of 4.70% (4.70% - 5.93% = - 1.23%).

Such an outcome is inconsistent with the Revenue and Pricing Principles as it leaves the business in a loss making position and does not provide a reasonable opportunity to recover costs. It is difficult to comprehend why the AER would adopt an approach that does not allow for any cash dividends to be made to the equity holders for investing in such long life assets, which face significant asset stranding risks.

Figure 5–1 shows that actual inflation has been consistently below the mid-point of RBA's target band of 2% to 3%, since 2015.

Figure 5–1: Actual inflation and RBA target band mid-point



In light of the evidence above, JEN advocates for the AER to reconsider its inflation approach which is currently penalising network businesses for a known upward bias in the forecast approach compared with current market expectations.

The Economic Regulation Authority (**ERA**) in Western Australia, in its 2018 RoR Instrument explanatory statement, rejected the AER's approach to forecast inflation in the current economic conditions. This was on the basis that the RBA fixed target mid-point of 2.5% does not reflect changing inflation expectations and may result in overestimate of expected inflation. The ERA also noted that use of RBA's forecast can result in a negative real risk free rate which would deter investors from funding investments.[11]

The Independent Panel also endorsed ERA's approach of using a treasury bond implied inflation approach noting that ERA's approach is likely to be the best means of forecasting inflation, given its use of appropriate market information.[12]

Table 5–1 demonstrates that if the AER was to consider the forecasting accuracy of the inflation forecast—an approach that the AER has applied to compare the Deloitte Access Economics and BIS Oxford Economics Wage Price Index (**WPI**) expectation approaches in JGN's[13] and SAPN's[14] draft decision—then it will see that the market

11 ERA, *2018 Rate of Return Guidelines Explanatory Statement*, para 1580-1583.

12 ERA, *2018 Rate of Return Guidelines Explanatory Statement*, para 1585.

13 AER, *Draft decision, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 6 - Operating expenditure*, November 2019, s. 6.4.3.1.

14 AER, *Draft decision, SA Power Networks, Distribution Determination, 2020 to 2025, Attachment 6 - Operating expenditure*, October 2019., s 6.4.2.

based methods such as break even and inflation swaps are more accurate in forecasting inflation expectations compared to the AER's geometric mean approach.

Table 5–1: Accuracy of 3 and 5-year inflation forecasts compared to 3 and 5-year subsequent actual inflation

Source	3 year average mean absolute error	5 year average mean absolute error
AER inflation	0.56%	0.59%
Breakeven inflation	**0.37%**	0.44%
Inflation swaps	0.48%	0.61%
Average: AER and breakeven	0.39%	**0.41%**
Average: AER and swaps	0.50%	0.52%
Average: Breakeven and swaps	0.39%	0.43%
Average: All three	0.42%	0.45%
Lowest absolute error	Breakeven inflation	Average: AER and breakeven

Source: ABS, AER, Bloomberg, RBA, CEG analysis.

We recommend that the AER could consider either adopting a more market based approach in light of this, or even take a conservative view of taking an average of its approach and market based approach, both of which improve the forecasting accuracy. However, it must conduct a cross check that its approach results in positive cash dividends for equity holders.

Alternatively, even if the AER was to continue with its current approach it should consider updating the PTRM with actual inflation when updating return on debt annual observation to minimise inflation risk from forecasting inaccuracies.