Jemena Gas Networks (NSW) Ltd

2020-25 Access Arrangement Proposal

Attachment 7.7

Rate of return

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Abbreviations

AA	Access Arrangement
AER	Australian Energy Regulator
CAPM	Capital Asset Pricing Model
CEG	Competition Economists Group
MRP	Market Risk Premium
PTRM	Post Tax Revenue Model
RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia
RY	Regulatory Year

Overview

Chapter 7 of our 2020 Plan sets out the revenue that we require to deliver pipeline services over the 2020-25 period. We are required to forecast our total revenue requirement using the building block approach.[1]

The return on capital for each regulatory year (**RY**) must be determined by applying the allowed rate of return to the value of the regulatory asset base (**RAB**)—otherwise known as the capital base—at the start of that year. 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.

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 gas network to provide our pipeline services.

This attachment sets out JGN's proposed allowed rate of return for the 2020-25 Access Arrangement (**AA**) period. This attachment is structured as follows:

- section 1 provides an overview of how customers have informed our plans
- 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 how we have forecast inflation, equity raising costs and debt raising costs.

[1] Rule 72(1)(m) and Rule 76 of the NGR.

1. How customers have informed our plans

We have heard through our engagement program that customers are concerned about the affordability of their gas supply. They generally do not distinguish between our contribution to their retail bill–about 40%–when considering the overall affordability of their gas supply.

Our customers want us to contribute to price reductions in order to reduce the cost of living and increase business competitiveness. Knowing that future gas prices will reduce helps our customers to plan and manage their household and business budgets generally and their energy bills specifically.

At the same time, our customers have told us that they want us to maintain the safety, security and reliability of our pipeline services, and the customer service that they receive. Improved affordability therefore cannot come at the cost of service performance.

The rate of return must therefore balance achieving the competing goals of affordable prices and also attracting the necessary investment funds to maintain a safe, secure and reliable network.

The Australian Energy Regulator (**AER**) undertook extensive stakeholder engagement on its new Rate of Return Instrument, which it published in December 2018. We made several submissions to this process, as did many other stakeholders, including customers and their representatives. The final Rate of Return Instrument has therefore been informed by extensive customer input. We recognise customers' general support for the Instrument.

Our proposal involves a significant reduction in the allowed rate of return. Indeed, our proposed rate of return is lower than that allowed in any of our previous periods and lower than our shareholder's expectation. The reduction in the allowed rate or return will contribute to making our pipeline services more affordable for our customers, and to meeting customers' expectations.

2. Our estimate of the rate of return

2.1 Our approach to estimating the rate of return

The AER published its new Rate of Return Instrument in December 2018. This Instrument is binding on JGN and the AER in a Distribution Determination.

Our proposal is based on applying the Rate of Return Instrument in full.

The Instrument sets the the cost of equity and debt having regard to a wide range of information. The AER's 2018 review has led the AER to:

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

All of these changes reduced the revenue required to compensate us for our cost of financing and corporate tax.

In addition, Government bond yields since 2016 have lowered the estimated cost of equity under the AER's foundation model (i.e. the Sharpe-Lintner capital asset pricing model (**CAPM**)).

Overall, we have applied the AER's Rate of Return Instrument for our 2020-25 period, although we believe, for the reasons discussed in section 2.3, that gas distribution businesses such as ours are more risk-exposed than electricity networks. As such, we think that applying the new Instrument results in a low rate of return allowance.

2.2 Our placeholder rate of return

We have applied the new Rate of Return Instrument to calculate a proxy for rate of return of 4.96% for 2020-21. Our calculation is based on the parameters in Table 2–1.

Table 2–1: Placeholder rate of return

Parameter	Value
Return on equity	5.62%
Return on debt	4.52%
Leverage / gearing ratio	60%
Gamma	0.585
Corporate tax rate	30%
Nominal Vanilla WACC	**4.96%**

Note: The return on equity values are estimated using placeholder averaging periods (4-29 March 2019). These values will be updated for the actual averaging periods proposed in confidential Attachment 7.8.

We will update this value using the averaging periods set out in confidential Attachment 7.8 and then annually during 2021-22 to 2024-25 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 2020 Plan, which was 5.19%. This is due to significant reduction in the return on equity driven by lower government bond yields. This rate of return of 4.96% is also significantly lower compared to the 5.40% that applied from the start of the 2015-20 period. [2]

[2] AER, *Final decision JGN – PTRM – February 2019.xls*

2.3 Gas distribution network businesses are more risk-exposed

The AER's Rate of Return Instrument includes a single set of risk-related parameters (i.e. credit rating and equity beta) that are applied to all energy networks that it regulates, including us. In our view, this likely understates – and therefore undercompensates for – the risks applying to gas distribution businesses like ours.

We maintain the position in the Australian Pipelines and Gas Association's September 2018 submission on the AER's Draft Decision on the Rate of Return Instrument[3] that, while they have similar overarching commercial principles, regulated electricity and gas distribution businesses have different systematic risk, investment drivers, financial leverage and market positions. These differences arise from gas being a fuel of choice and having greater risks associated with, amongst other things, demand, wholesale price, emission reduction targets and supply shortfall.

Although the AER chose not to reflect these differences in its Rate of Return Instrument, it has indicated that it will deal with disruptive technology risks through other cash flows.[4] We propose this be done by reducing our standard lives of assets. In particular, given the potential risks associated with our future investments given NSW Government targets for net-zero carbon emissions by 2050 (as discussed in Chapter 3 of our 2020 Plan), we think it is preferable to speed up cost recovery for the new investments that we will make on our network from 1 July 2020 by reducing the standard asset lives we apply to these assets.

We note that our engagement program revealed that most customers support this change to the asset lives. Customers told us that they want us to take a proactive approach to managing future uncertainty and to minimise any negative customer consequences. They saw this as a way for current customers to do something now to protect future generations from much more significant price implications. This is discussed in more detail in Attachment 7.10.

[3] APGA, "Submission to the AER – 2018 Rate of Return Guideline – Draft decision", 25 September 2018, available at https://www.aer.gov.au/system/files/APGA%20Submission%20on%20AER%202018%20Draft%20ROR%20Guideline_Redacted.pdf

[4] See, for instance, AER, *Draft rate of return guidelines*, *Explanatory statement*, July 2018 pp. 92–94; and AER, *Rate of return instrument*, *Explanatory statement*, December 2018, pp. 44–46.

3. Our estimate of the return on equity

We estimate a placeholder return on equity of 5.62%. This has been determined by applying the Rate of Return Instrument. In particular:

- The return on equity formula in clause 4 of the Instrument: risk free rate + equity beta x market risk premium
- The CAPM, as the foundation model
- A placeholder averaging period of 20 business days from 4 to 29 March 2019 for the 10 year risk free rate as set out in the Instrument. The AER will replace the below placeholder risk free rate with our actual risk-free rate using the method outlined in clause 4 of the Instrument and the nominated averaging period we have proposed in Attachment 7.8.
- Point estimates for equity beta and the market risk premium (**MRP**).

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	Confidential [Placeholder period - 4-29 March 2019]
Risk free rate	1.96 [Placeholder]
Equity beta	0.6
MRP	6.10
Return on equity	5.62

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 7.8.

4. Our estimate of the return on debt

The AER's Rate of Return Instrument requires the return on debt to be calculated using a trailing average portfolio approach following a 10 year transition from the on-the-day approach. This means that the return on debt, and therefore the rate of return, will be updated every regulatory year of the 2020-25 period. This formula is set out in clause 5 of the 2020-25 AA.

We began our transition to the full trailing average approach in 2015-16 so we will complete the 10 year transition at the end of the 2020-25 period. From 2025-26, 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, 2015-16 to 2019-20. We have forecast the return on debt based on the latest updated return on debt for 2019-20.

Table 4–1 details our actual return on debt estimates as determined by the AER to date and our proposed forecast return on debt estimates to 2025.

Table 4–1: Return on debt (%)

Regulatory year	Prevailing interest rates during averaging period	Trailing return on debt	Basis
2015-16	4.27%	4.27%	Actuals as determined by AER
2016-17	5.42%	4.39%	Actuals as determined by AER
2017-18	5.07%	4.47%	Actuals as determined by AER
2018-19	4.57%	4.52%	Actuals as determined by AER
2019-20	4.52%	4.52%	Actuals as determined by AER
2020-21	4.52%	4.52%	Forecast
2021-22	4.52%	4.52%	Forecast
2022-23	4.52%	4.52%	Forecast
2023-24	4.52%	4.52%	Forecast
2024-25	4.52%	4.52%	Forecast

In accordance with the Rate of Return Instrument, the return on debt will be updated annually between 2021-22 and 2024-25. Our proposed cost of debt applies the Rate of Return Instrument's prescribed 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 2020-25 AA 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; and
  - where necessary, adopting the Instrument approach to extrapolating estimates to 10 years maturity.
- Accepting the conditions for nominating averaging periods. Our confidential nominated averaging periods for the 2020-25 AA period are detailed in Attachment 7.8.

5. Other matters

5.1 Expected inflation

The AER's Post Tax Revenue Model (**PTRM**) uses forecast inflation to calculate the regulatory depreciation building block 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.*[5]

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.

Although we have adopted the AER's preferred RBA method for our 2020-25 AA period we recommend the AER re-consider its approach where its inflation forecasts are significantly above the actual inflation to avoid the risk of undercompensating the businesses for their financing costs. In particular the risk free rate is already below the AER's forecast inflation and it is unlikely that the inflation expectations embedded in forecast rate of return are as high as estimates obtained from adopting AER's approach. We recommend the AER to consider a glide-path approach proposed by Jemena[6] to the AER or a more market based approach to lower the risk from forecasting inflation out of sync with rate of return expectations.

Our placeholder expected inflation is 2.42% which will be updated by the AER using the latest, RBA Statement of Monetary Policy at the time of our decision.

5.2 Equity raising costs

Equity raising costs are transaction costs that we incur when we raise equity.

The AER has applied a benchmark approach in its recent regulatory decisions for determining equity raising costs for raising equity through dividend reinvestment plans and seasoned equity offerings. These costs have been forecasted using the AER's approach applied in the PTRM.

5.3 Debt raising costs

We have adopted the AER's approach to estimating debt raising costs which include only transaction related costs. We have not included costs relating to 3 month ahead financing costs and commitment fee. These are discussed in Attachment 6.1 and estimated by Competition Economists Group (**CEG**) in its report provided in Attachment 6.6.

5 AER, "Regulatory treatment of inflation - Final position", December 2017, page 11

6 Jemena Submission on AER's Discussion Paper on Regulatory Treatment of Inflation, 11 November 2017