FINAL DECISION
Jemena Gas Networks (NSW) Ltd
Access Arrangement

2020 to 2025

Attachment 12
Demand

June 2020

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: AERInquiry@aer.gov.au

AER reference: 63819

Note

This attachment forms part of the AER's final decision on the access arrangement that will apply to Jemena Gas Networks (NSW) Ltd ('JGN') for the 2020–25 access arrangement period. It should be read with all other parts of our final decision.

As a number of issues were settled at the draft decision stage or required only minor updates, we have not prepared all attachments. The final decision attachments have been numbered consistently with the equivalent attachments to our draft decision. In these circumstances, our draft decision reasons form part of this final decision.

Our final decision includes the following attachments:

Overview

Attachment 1 – Services covered by the access arrangement

Attachment 2 – Capital base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 7 – Corporate income tax

Attachment 11 – Non-tariff components

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Attachment 13 – Capital expenditure sharing scheme

Contents

Shortened forms

Shortened form	Extended form
ABS	Australian Bureau of Statistics
ACQ	Annual Contract Quantity
AER	Australian Energy Regulator
Capex	Capital expenditure
CORE	CORE Energy & Resources Pty. Limited
GJ	Gigajoule
HIA	Housing Industry Association of Australia
JGN	Jemena Gas Networks (NSW) Ltd
MDQ	Maximum Daily Quantity
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NSW	New South Wales
Opex	Operating expenditure
RIN	Regulatory Information Notice
RSA	Reference Service Agreement

12 Demand

This Attachment sets out our assessment of the demand forecasts for JGN for the 2020–25 access arrangement period. Demand is an important input into the derivation of JGN's reference tariffs. It also affects operating expenditure (opex) and capital expenditure (capex), which are linked to network growth via new connections.[1]

12.1 Final decision

Our final decision is to accept JGN's proposed demand forecast for the 2020–25 period. We are satisfied that JGN's proposed demand forecasts, as applied by its consultant CORE Energy & Resources (CORE), comply with rule 74(2) of the National Gas Rules (NGR).

12.2 JGN's revised proposal

In our draft decision, we accepted JGN's forecast demand for Tariff D Maximum Daily Quantity (MDQ) and Annual Contract Quantity (ACQ). For Tariff V, we requested JGN's revised proposal:[2]

- incorporate updated demand and customer forecast based on 2018–19 actual data, and the latest Housing Industry Association of Australia (HIA) data
- clarify how billing data was derived
- clarify whether using data with a one year lag will impact the accuracy of forecasts[3], including the likely error margins to the penetration rates
- describe the concept of zero consuming meters, its application to the demand and customer forecast, how it differs from disconnections, its relationship with other areas in JGN's proposal, and the reasons it complies with the National Gas Objective (NGO)
- confirm the impact to the demand and customer forecast with and without JGN's volume boundary meter strategy.[4]

JGN provided the additional information requested and incorporated the revisions in its revised proposal.[5] JGN's forecasts are set out in Table 12.1 and 12.2.

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1 Our final decisions on JGN's capex and opex are set out in Attachment 5 and the Overview, respectively.

2 AER, *Draft decision Jemena Gas Network access arrangement – Attachment 12 – Demand*, November 2019, p. 6.

3 There is a one-year lag between the HIA data and JGN connection data used in the original demand forecast.

4 JGN's volume boundary meter strategy was to withdraw individual hot water meters for buildings with centralised hot water systems.

5 JGN, *Attachment 13.2 Demand forecast update report*, January 2020.

Table 12.1 JGN demand forecasts for Tariff V for the 2020–25 access arrangement period

	2020–21	2021–22	2022–23	2023–24	2024–25
Residential Connections	28,869	27,647	27,578	27,699	28,573
Residential Disconnections [a]	8,191	8,339	8,480	8,619	8,760
Residential Connections [a]	20,678	19,307	19,098	19,080	19,813
Residential Demand (TJ)	27,249	27,459	27,604	27,745	27,877
Commercial Connections	828	828	828	828	828
Commercial Disconnections	302	306	311	315	319
Net Commercial Connections	526	521	517	513	509
Commercial Demand (TJ)	13,432	13,506	13,554	13,566	13,590

Source: JGN Access Arrangement Information.[6]

Notes: (a) These disconnections include the impact of zero consuming meters.

Table 12.2 JGN demand forecasts for Tariff D for the 2020–25 access arrangement period

	2020–21	2021–22	2022–23	2023–24	2024–25
MDQ (GJ)	232	227	222	217	212
ACQ (GJ)	45,845	45,898	43,955	43,018	42,086

Source: JGN Access Arrangement Information.[7]

6 JGN, *Attachment 13.2 Demand forecast update report*, January 2020, Figures 3.5, 3.6, 3.8 and 3.9.

7 JGN, *Attachment 8.2 Demand Forecasting report*, June 2019, Tables 6.1 and 6.2.

12.3 Assessment approach

Our assessment approach is the same as for the draft decision.[8]

12.3.1 Interrelationships

We have considered the relevant interrelationships between the different components of JGN's access arrangement as part of our analysis.

Several interrelationships exist. This includes the effect of forecast demand on the efficient amount of capex, opex and tariffs in the 2020–25 period. In particular, the demand forecasts impact:

- Tariff V connections capex – the number of new connections drives the amount of connections capex
- opex – the forecast total connections volume and total consumption (output growth) are used to determine additional opex required to service a larger network
- tariff prices – prices are based on forecast consumption (demand) per connection. Tariff prices are determined by dividing cost (revenue) by quantity (demand per connection). This means that an increase in demand per connection will reduce the tariff price (provided revenue stays the same).

12.3.2 Minimum, maximum and average demand

JGN's access arrangement must include minimum, maximum and average demand for the earlier access arrangement period.[9] JGN's access arrangement information and its response to our Regulatory Information Notice (RIN) satisfy these requirements.[10]

12.3.3 Forecast pipeline capacity and utilisation

JGN's access arrangement information should, to the extent practicable, include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period.[11]

JGN did not provide this information in its access arrangement information. However, JGN's distribution network is a meshed network made up of interconnected pipes, and there are a number of practical considerations that mean that calculating forecast capacity and utilisation is not practicable.

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8 AER, *Draft decision Jemena Gas Network access arrangement – Attachment 12 – Demand*, November 2019, p. 13-20.

9 NGR, r. 72(1)(a)(iii)(A).

10 JGN, *Attachment 8.1 Overview of JGN's Demand Forecast,* June 2019, p.20; JGN, *Attachment 6 Workbook-2*, June 2019.

11 NGR, r. 72(1)(d).

12.4 Reasons for final decision

We accept JGN's forecast Tariff V for residential and commercial customers, as well as JGN's forecast Tariff D MDQ and ACQ. We are satisfied that these demand forecasts are consistent with rule 74(2) of the NGR.

JGN's revised proposal incorporated the revisions to its demand forecasts required by our draft decision.[12]

In addition, as recommended in our draft decision, JGN sought independent assurance on updates to the demand and customer forecasts. JGN also validated the key inputs used in the demand and customer forecast.

Overall, we are satisfied that the demand forecasts in JGN's revised proposal were arrived at on a reasonable basis and represent the best estimate possible in the circumstances.[13] This conclusion must be read in conjunction with our draft decision, which details our analysis of JGN's demand forecasts.[14]

12.4.1 Demand forecast for Tariff V

We are satisfied with JGN's forecast Tariff V for residential and commercial numbers and associated demand.

2018–19 actual demand and customer data

CORE confirmed that:[15]

- JGN provided CORE with actual data on Tariff V for the 2018–19 year
- the 2018–19 actual data is consistent in nature with the data used to develop JGN's initial proposal, and has been applied consistently for JGN's revised proposal.

JGN has updated its Tariff V inputs using 2018–19 actual data as requested in our draft decision. We are satisfied that JGN has used the best possible inputs to derive its forecast.

Latest HIA dataset

CORE confirmed that it has: [16]

- accessed and applied the latest HIA data to derive its revised forecasts for Tariff V

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12 JGN, *Attachment 13.2 Demand forecast update report*, January 2020.

13 NGR, r. 74(2)

14 AER,
Draft decision Jemena Gas Network access arrangement - Attachment 12 - Demand, November 2019.

15 JGN, *Attachment 13.2 Demand forecast update report*, January 2020, p.9.

16 JGN, *Attachment 13.2 Demand forecast update report*, January 2020, p.9.

- applied the latest HIA data consistently with the approach used in JGN's initial proposal for JGN's revised proposal

JGN has updated its Tariff V inputs with the latest HIA data as requested in our draft decision. We are satisfied that JGN has used the best possible inputs.

Volume boundary meter strategy

In our draft decision, we did not accept JGN's volume boundary meter strategy.[17] We adjusted its demand and customer forecasts to reflect this.[18]

In its revised proposal, JGN stated that high rise dwellings fall into the following categories: [19]

- centralised hot water: sites with individual metering for each dwelling
- instantaneous hot water: sites with individual gas meters for each dwelling
- volume boundary: sites with a single volume boundary meter
- hybrid: sites with both volume boundary meter and individual hot water meter.

JGN accepted our draft decision and will to continue to offer its individual hot water product on sites with centralised hot water in the 2020–25 period. CORE has adjusted its demand and customer forecasts based on the following observed historical trends and the latest market developments: [20]

- the proportion of instantaneous hot water dwellings will continue to fall, from 9 per cent to 5 per cent in 2020–21, after which time the percentage is expected to remain relatively constant
- the proportion of centralised hot water dwellings will fall to 5 per cent in 2020–21 as only a minority of developers will opt to install individual hot water metering
- the number of hybrid sites will fall to 1 per cent in 2020–21, reflecting the historic ratio of hybrid to centralised hot water sites
- thus, 89 per cent of residual high rise sites will be supplied by volume boundary metering

We are satisfied that CORE's adjustments to customer and demand forecasts, which reflect the changes to JGN's strategy, are derived on a reasonable basis.

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17 JGN's volume boundary meter strategy was to withdraw individual hot water meters for buildings with centralised hot water systems from 2020-21

18 AER, *Draft decision Jemena Gas Network access arrangement - Attachment 12 - Demand*, November 2019, pp.15-16.

19 JGN, *Attachment 13.1 Response to AER's draft decision – demand*, January 2020, pp.11-12.

20 JGN, *Attachment 13.2 Demand forecast update report*, January 2020, p.15.

Forecast of consumption per connection

We accepted JGN's forecast consumption per connection in our draft decision. We remain satisfied that CORE's residential and commercial consumption per connection forecasts were derived on a reasonable basis.

Forecast of new connections numbers

In our draft decision, we accepted CORE's use of population growth data from NSW Treasury and NSW dwelling completions from HIA as the basis for residential connections forecast.

We also accepted that the historical penetration rate is a function of JGN's historical connections against actual dwelling completions and that the historical trend has a close relationship to the likely future penetration rate.[21]

We also sought further information and clarification on some of the key inputs and assumptions supplied by JGN to CORE that underpin the connection numbers forecast.

Based on the additional information and clarification provided in JGN's revised proposal, we are satisfied that the customer numbers forecast have been derived on a reasonable basis.

Billing data and penetration rate calculation

In our draft decision, we noted concerns around CORE's penetration rate calculation. The calculation was based on JGN's billing data, and we were concerned about its compatibility with HIA data, given the introduction of volume boundary meters in 2015–16. [22]

CORE has confirmed that the following data validation has been undertaken:[23]

- interviews with JGN team members responsible for the relevant data including a 'walk through' of the process
- a review of the approach to developing the assumed penetration rate based on billing data – CORE noted that dwelling numbers and connection numbers are consistent.

On this basis, we are satisfied that CORE has undertaken a reasonable assurance process to ensure that JGN's billing data is fit for purpose relative to the HIA data.

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21 AER, *Draft decision Jemena Gas Network access arrangement - Attachment 12 - Demand*, November 2019, p.17.

22 Ibid. pp.17-18.

23 JGN, *Attachment 13.2 Demand forecast update report*, January 2020, pp.11-12.

In our draft decision, we sought assurance that the one year lag between HIA data and JGN connections remained appropriate. In particular, we sort assurance regarding whether these:

- were appropriate in determining penetration rates during periods of significant upward or downward trends in construction activities
- presented no overlaps with the way JGN derived the billing data. [24]

In its demand forecast update report, CORE has demonstrated that there is a statistically significant relationship between JGN connection data and HIA data with a one-year lag. CORE has also confirmed that it is not aware of a suitable alternative that might provide a better forecast.[25]

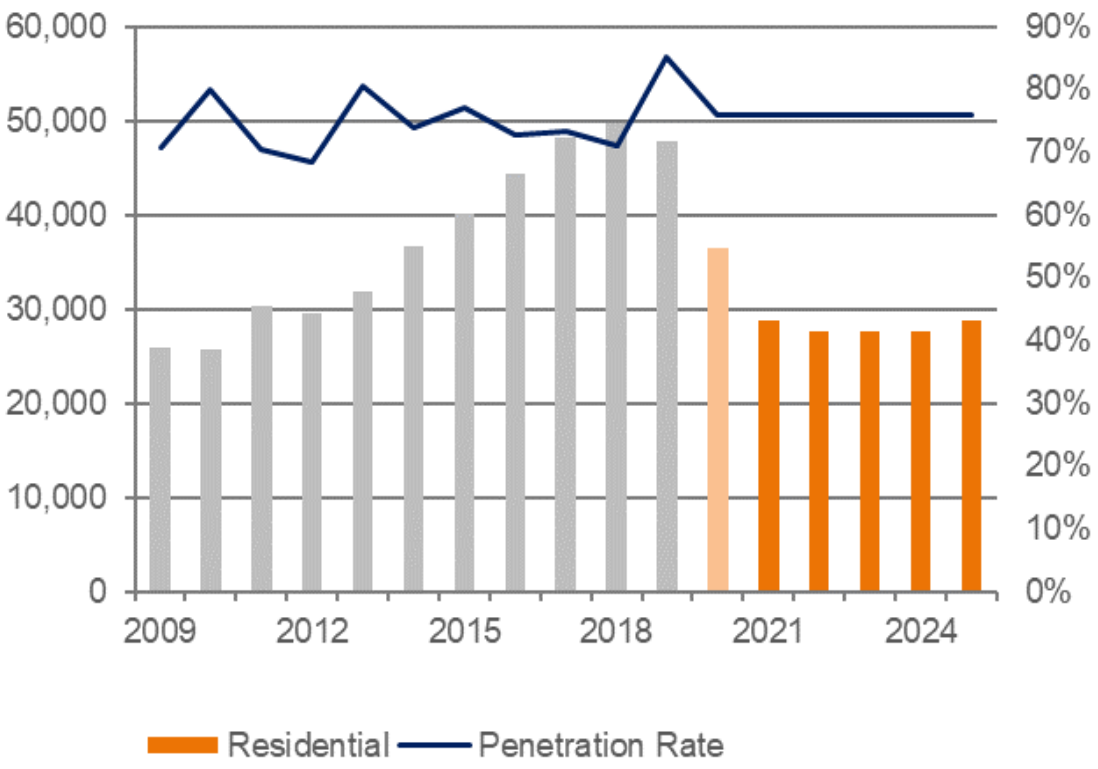
We are satisfied that CORE has undertaken taken reasonable steps to ensure that the penetration rate calculation is the best estimate possible under the circumstances.

As a result of CORE's revised forecast for Tariff V, we observed an overall increase in residential connections in the 2020–25 period compared to JGN's initial proposal. In particular, there is a 3.9 per cent increase in new estate connections for the 2020–25 period. This is primarily caused by an increase in average residential penetration rate, compared to the 2018–19 actual data.

[24] AER, *Draft decision Jemena Gas Network access arrangement - Attachment 12 - Demand*, November 2019, pp.17-18.

[25] AER, *Draft decision Jemena Gas Network access arrangement - Attachment 12 - Demand*, November 2019, p.12 and Attachment 2.

Figure 12.1 JGN residential dwelling connection rate vs connection penetration rate



Source: JGN Access Arrangement Information.[26]

Zero consuming meters

In our draft decision, we sought further clarification about JGN's new network policy to remove 'zero-consuming meters' in the 2020–25 access arrangement period. [27]

For the purpose of its demand forecast, JGN has now defined the following: [28]

- A 'suspended connection' is where JGN either wad[29] or lock the meter to **temporarily** stop gas flowing
- A 'disconnection' is where JGN remove the meter and/or isolate the service at the main to **permanently** remove the connection

To clarify, references to 'zero consuming meters' for the purpose of JGN's 2020–25 access arrangement fall under the 'suspended connection' definition.

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[26] JGN, *Attachment 13.2 Demand forecast update report*, January 2020, p.10.

[27] AER, *Draft decision Jemena Gas Network access arrangement – Attachment 12 – Demand*, November 2019, p. 18.

[28] JGN, *Response to information request IR049*, February 2020.

[29] Wadding means inserting a disc or "wad" in the pipework to stop the flow of gas.

Table 12.3 JGN definitions of suspended connection and disconnection

	Language used in the context of JGN demand forecast	JGN internal systems and Reference Service Agreement	National Energy Retail Law
Sites that have been **temporarily** disconnected	Suspended connection	Disconnected	Disconnected
Sites which have been **permanently** disconnected	Disconnected	Abolished	Disconnected

Source: JGN Access Arrangement Information.[30]

Historically, JGN levied network charges for temporarily suspended connections and only ceased network charges once a connection was permanently disconnected. Retailers raised concerns that they were continuing to pay network charges for sites that no longer used the network. As part of its proposed Reference Service Agreement (RSA), JGN has agreed with retailers to stop network charges for sites that are suspended.

This change will impact demand forecasts because suspended customers no longer attract network charges, meaning network cost (revenue) is spread over fewer customers.

In our draft decision, we raised a number of concerns with JGN's approach, including:

- JGN did not make the impact of the RSA clear. In particular, an increase in Tariff V charge may result from an overall reduction in the customer base.
- JGN commenced the agreement with retailers in October 2019, ahead of our final decision and before the proposed RSA takes effect.
- The suspended connection forecast used to adjust demand is based on two years of customer data, as JGN's billing system did not track suspensions prior to 2016–17. We typically expect a reasonable forecast to be based on three or more years of historical data. We note that a third year, 2018–19, was available at the time of the revised proposal.
- The agreement effectively reduces the retailer's 'bad debt' risk through higher network charges. We were concerned about retailers' ability to pass savings back to consumers, and to do so in a timely manner.

[30] JGN, *Response to information request IR049*, February 2020.

In response, JGN provided:

- further clarifications and information, including its expectations on retailers passing savings to customers [31]
- an alternative forecast based on historical data, and had the forecast reviewed by CORE, which addressed our issues.

On balance, we are satisfied that JGN has acted reasonably and has complied with the NGO on suspended connections for the purpose of its demand forecast. However, we encourage JGN to improve its data and provide a reconciliation between forecast and actuals on suspended connection ahead of its next access arrangement review.

12.4.2 Demand forecast for Tariff D

JGN has not revised Tariff D forecasts in its revised proposal. However, it has included two new augmentation projects, that may increase the number of large customers on its network, which may impact Tariff D.[32] JGN did not address whether new connections were likely to impact the Tariff D forecasts.

We reviewed the two new projects to determine whether they would materially change the Tariff D demand forecasts. Based on our analysis, we do not consider the projects will materially change demand, and we are satisfied that JGN's Tariff D forecasts are reasonable.

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[31] JGN, *Response to AER information request IR049*, February 2020.

[32] JGN, *Attachment 4.2 Response to the AER draft decision – Capital expenditure*, January 2020, pp. 48, 61.