DRAFT DECISION
Australian Gas Networks (SA)
Access Arrangement

2021 to 2026

Attachment 12
Demand

November 2020

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the access arrangement that will apply to Australian Gas Networks (SA) ('AGN') for the 2021–2026 access arrangement period. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

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 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency carryover mechanism

Attachment 9 – Reference tariff setting

Attachment 10 – Reference tariff variation mechanism

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12 Demand

This Attachment sets out our assessment of the demand forecasts for AGN for the 2021–26 access arrangement period. Demand is an important input into the derivation of AGN's reference tariffs. It also affects operating expenditure (opex) and capital expenditure (capex), which are linked to network growth via new connections.

12.1 Draft decision

Our draft decision is to accept AGN's proposed approach to demand forecast for the 2021–26 period. We are satisfied that AGN's proposed demand forecasts, as applied by its consultant CORE Energy & Resources (CORE), comply with rule 74(2) of the National Gas Rules (NGR). We have accepted AGN's inputs as a placeholder, and expect that these will be updated with the latest data in its revised proposal.

With respect to Tariff D, we are satisfied that forecast demand for Maximum Daily Quantity (MDQ) and Annual Contract Quantity (ACQ) for this tariff class is consistent with rule 74(2) of the NGR.

12.2 AGN's proposal

AGN engaged CORE to prepare demand forecasts for its SA network for the 2021–26 access arrangement period. A summary of the key aspects of AGN's demand forecasts are set out in Table 12.1 (Tariff R – residential, Tariff C - commercial) and Table 12.2 (Tariff D – industrial).[1]

In summary, CORE forecasts:

- residential demand to fall by 1.5 per cent per year, with connections growth of 1 per cent being offset by a 2.6 per cent decline in average consumption. CORE attributes the decline in average consumption to a range of factors, such as higher wholesale gas prices, increasing penetration of solar energy, improved appliance and dwelling efficiency and lower new dwellings growth
- commercial demand to grow by 0.3% per year, with connections growth of 0.6% offset slightly by a 0.3 per cent decline in average consumption. The growth in commercial connections is driven by expected higher levels of economic activity in South Australia
- industrial connections to fall by 2.9 per cent each year in response to higher wholesale gas prices, which CORE forecasts will drive capacity lower by 3.1 per cent per year.

[1] Tariff D is gas consumers who consume more than 10,000 gigajoule (GJ) per annum.

Table 12.1 AGN's demand forecasts for Tariff R and Tariff C for the 2021–26 access arrangement period

	2021–22	2022–23	2023–24	2024–25	2025–26
Residential Connections	455 474	460 456	466 316	472 716	478 985
Residential consumption per connection (GJ)	15.5	15.1	14.8	14.3	13.9
Residential demand (GJ)	7 063 355	6 965 198	6 922 095	6 753 763	6 661 181
Commercial Connections	11 236	11 350	11 472	11 590	11 707
Commercial consumption per connection (GJ)	299.2	298.8	297.5	294.3	292.4
Commercial demand	3 361 719	3 391 168	3 412 492	3 411 364	3 423 292

Source: AGN, *Final Plan: Five year plan for our South Australian network, 2021–2026,* July 2020, p. 135.

Table 12.2 AGN demand forecasts for Tariff D for the 2021–26 access arrangement period

	2021–22	2022–23	2023–24	2024–25	2025–26
Number of connections	106	103	101	100	98
MDQ (TJ)	29 157	28 322	27 542	26 818	26 048
ACQ (TJ)	10 272 243	9 982 566	9 698 534	9 420 162	9 147 402

Source: AGN, *Final Plan: Five year plan for our South Australian network, 2021–2026,* July 2020, p. 135.

AGN notes that the residential forecasts are driven by expected new dwellings growth in South Australia. This HIA forecast takes into account the impact of COVID-19 in the short-term. Our industrial forecasts are based on the historical trend and the results of the survey of our top 25 industrial customers.

Forecast methodology

CORE prepared its demand forecasts for Residential and Commercial customers by:[2]

[2] AGN, *Final Plan: Five year plan for our South Australian network, 2021–2026,* July 2020, p. 127.

- taking historical data and applying weather normalisation. The weather normalised data is then used to calculate historical average growth per connection. Adjust for the effect of energy price growth
- forecasting demand per connection - further adjusting the normalised average to account for factors not reflected in historical data, such as future price movements
- forecasting number of connections - use data on new dwelling growth for residential customers (as provided by the Housing Industry Association) and commercial growth based on forecast economic activity
- forecasting demand - determine the demand for residential and commercial customers by multiplying connections by consumption per user.

12.3 Assessment approach

The NGR requires access arrangement information for a full access arrangement proposal for a distribution pipeline to include:

- usage of the pipeline over the earlier access arrangement period showing minimum, maximum and average demand; and customer numbers in total and by tariff class[3]
- to the extent that it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.[4]

The NGR also require that forecasts and estimates:[5]

- are arrived at on a reasonable basis
- represent the best forecast or estimate possible in the circumstances.

We consider that there are two important considerations in assessing whether demand forecasts are arrived at on a reasonable basis and whether they represent the best forecasts possible in the circumstances.[6] These are:

- the appropriateness of the forecast methodology – this involves consideration of how the demand forecast has been developed; and
- whether or not relevant factors have been taken into account in developing the demand forecasts.

To determine whether AGN's proposed demand forecasts are arrived at on a reasonable basis and are the best possible forecasts in the circumstances, we reviewed the data inputs used to implement the forecasting methodology.

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3 NGR, r. 72(1)(a)(iii).
4 NGR, r. 72(1)(d).
5 NGR, r. 74(2).
6 NGR, r. 74(2).

In making our draft decision, we relied on:

- information provided by AGN as part of its proposed access arrangement
- information provided in response to the regulatory information notice (RIN)
- responses to information requests, and
- stakeholder submissions.

Interrelationships

We have considered the relevant interrelationships between the different components of AGN'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 2021–26 period. In particular, the demand forecasts impact:

- Tariff R and C 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).

12.4 AER assessment

Rule 74(2) of the NGR requires forecasts in access arrangement proposals to be arrived at on a reasonable basis, and to represent the best forecast possible in the circumstances.

The reasons for our decision are discussed further below.

12.4.1 Forecast methodology and assumptions

Forecast methodology and assumptions

We consider that the demand forecast methodology and assumptions adopted by CORE were arrived at on a reasonable basis in accordance with the NGR for the following reasons:[7]

- the expected average demand for is based on an analysis of historic trends in gas volumes and key drivers of demand

[7] NGR rr. 74(1), 74(2)(a).

- the process of normalising data for use in the demand forecasts followed established forecasting methods that have previously been accepted by the AER
- we sought, and were provided with assurances from AGN that CORE had followed substantially the same forecasting methodology as had been approved in the recent JGN NSW access arrangement decision.

12.4.2 Minimum, maximum and average demand

Under the NGR, AGN's access arrangement must include minimum, maximum and average demand for the earlier access arrangement period.[8] AGN's access arrangement information and its response to our RIN satisfy these requirements.

Forecast pipeline capacity and utilisation

AGN's access arrangement information should, to the extent practicable, include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period.[9]

AGN did not provide this information in its access arrangement information. However, AGN'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.

12.5 Reasons for draft decision

We accept AGN's forecast methodology for Tariff R and C for residential and commercial customers, as well as AGN's forecast Tariff D MDQ and ACQ. We are satisfied that these demand forecasts are consistent with rule 74(2) of the NGR. We accept AGN's forecast demand as a placeholder in the draft decision. We expect updated data will be available for use in preparing AGN's revised proposal, and that AGN will use this to update its demand forecasts.

[8] NGR, r. 72(1)(a)(iii)(A).

[9] NGR, r. 72(1)(d).

12.5.1 Demand forecast for Tariff R and C

We are satisfied that AGN's forecasts for Tariff R and C demand are consistent with rule 74(2) of the NGR. We accept CORE's overall methodology to forecast demand. In particular, we accept that the methodology is consistent with recent AER decisions, and AEMO's forecasting approach. However, as we anticipate AGN will have access to new data before its revised proposal, we expect AGN will update its forecast in the revised proposal. Due to this, we have accepted AGN's proposed forecast as a placeholder for the draft decision.

We are satisfied with AGN's forecast Tariff R and C for residential and commercial numbers and associated demand.

Residential connections and per customer usage

CORE forecast the number of residential connections using expected dwelling growth based on HIA data. In particular:[10]

- dwelling completions show a sharp decrease in 2020, which holds for all of 2021 before a sharp drop in 2022 due to the COVID pandemic impact
- recovery momentum in longer-term growth is expected to fade when growth turns moderately negative in 2025 and 2026.

This leads to an overall slower increase in connections than in the 2016–21 access arrangement period.

CORE separately considered the connections rate for the Mt Barker extension. In CORE's opinion, the Mt Barker network extension represents a discrete and separate event relative to forecasting using historical information. This extension creates a step-change in connections and demand, not typically observed in an average year. We accept this inclusion, though we would expect CORE and AGN to update its forecast if circumstances change regarding the MT Barker extension.

CORE has projected residential per user by 2.6 per cent over the five year period.[11] This is driven by improved appliance and dwelling efficiency, the substitution of gas appliances for their electric equivalent and expected increase in wholesale gas prices over the period. We consider the AGN's forecast has been arrived at on a reasonable basis.

12.5.2 Commercial connections and per customer usage

CORE forecast the number of commercial connections using expected commercial growth based on HIA data. In particular:

- commercial connections are projected to grow at a rate lower than historic trends due

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[10] AGN, *Attachment 12.1, CoRE Demand Forecasting Report*, 1 July 2020, p. 38.

[11] AGN, *Final Plan: Five year plan for our South Australian network, 2021–2026,* July 2020, p. 130.

- commercial consumption is expected to decline due to higher wholesale gas prices, although this is likely to be less than residential customers due to slower historical trend decline rates
- the combination of these factors will result in a small increase in commercial demand over the 2021-26 access arrangement period.

We accept AGN's forecast of demand for Tariff C. We are satisfied that CORE's commercial consumption per connection and connection forecasts were derived on a reasonable basis.

12.5.3 Demand forecast for industrial customers (Tariff D)

We are satisfied that AGN's forecasts for Tariff D demand is consistent with rule 74(2) of the NGR. We accept CORE's overall methodology to forecast demand. In particular, we accept that the methodology is consistent with recent AER decisions, and AEMO's forecasting approach. However, as we anticipate AGN will have access to new data before its revised proposal, we expect AGN will update its forecast in the revised proposal. Due to this, we have accepted AGN's proposed forecast as a placeholder for the draft decision.

Demand for industrial customers is forecast on:

- the maximum amount of capacity that industrial customers are expected to required on a day (MDQ); and
- the total amount of gas industrial customers are expected to consume in a year (ACQ).[12]

To support the forecast methodology, AGN also conducted a survey of its 25 largest industrial customers to better understand their future requirements.

Overall, AGN is forecasting a decline in the MDQ of 3.1% over the 2021-26 access arrangement period, as well as a decline in the number of industrial connections.

We are satisfied with AGN's forecast Tariff D for industrial numbers and associated demand.

[12] AGN, *Final Plan: Five year plan for our South Australian network, 2021–2026,* July 2020, p. 133.

12.6 Revisions

We require the following revisions to make the access arrangement proposal acceptable:

Table 12.3 AGN's Demand Revisions

Revision	Amendment
Revision 12.1	Make all necessary revisions arising from using latest available data in revised proposal.

Shortened forms

Shortened form	Extended form
ABS	Australian Bureau of Statistics
ACQ	Annual Contract Quantity
AER	Australian Energy Regulator
capex	Capital expenditure
CD	Chargeable Demand
CORE	CORE Energy & Resources Pty. Limited
ENA	Energy Networks Australia
GFC	Global Financial Crisis
GJ	Gigajoule
GVA	Gross Value Add
HIA	Housing Industry Association of Australia
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