

Draft decision

AGN (SA) access arrangement 2026 to 2031
(1 July 2026 to 30 June 2031)

Attachment 4 – Demand

November 2025

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Version	Date	Pages
1	28 November 2025	15

List of attachments

This attachment forms part of our draft decision on the access arrangement that will apply for period of 1 July 2026 to 30 June 2031 (2026–31 period) for AGN (SA). It should be read with all parts of our draft decision.

The draft decision includes the following documents:

- Overview
- Attachment 1 – Capital base, Regulatory depreciation and Corporate income tax
- Attachment 2 – Capital expenditure
- Attachment 3 – Operating expenditure
- Attachment 4 – Demand
- Attachment 5 – Reference services, tariffs and non-tariff components
 - Includes: Services covered by the access arrangement, reference tariff settings, reference tariff variation mechanism, and non-tariff components
- Attachment 6 – Capital expenditure sharing scheme
- Attachment 7 – Efficiency carryover mechanism

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4 Demand

In this attachment, we outline our assessment of AGN's demand forecast for the 2026–31 access arrangement period (2026–31 period).

Demand is an important input into the derivation of AGN's reference tariffs. This is because tariffs are set by dividing total revenue by forecast demand. It also affects operating expenditure (opex), capital expenditure (capex) and opex for output growth.

4.1 Draft decision

Our draft decision is to not accept AGN's demand forecast for the 2026–31 period, though we have used its forecast as a placeholder. While at a high level we consider AGN's forecast is reasonable, we expect AGN to incorporate the effect of the Australian Energy Market Commission's (AEMC) Connection rule change into its revised proposal.¹ The AEMC expects to release its final rule in December 2025, ahead of AGN's revised 2026–31 access arrangement proposal being submitted to us in January 2026.

The most significant impact of the rule change on AGN's revised proposal will likely relate to its proposed connections capex. However, we note AGN may also update its forecast for the number of connections to be performed in the 2026–31 period and as a result also its forecast demand.

Also, our consultant Frontier Economics identified a number of issues with the demand forecasting methodology used by AGN's consultant Core Energy. We require AGN to respond to those methodological issues with its revised proposal, including potentially by adjusting its 2026–31 demand forecast.

4.2 AGN's proposal

AGN engaged Core Energy & Resources (Core Energy) to prepare demand forecasts for its network for the 2026–31 period. A summary of key aspects of AGN's demand forecast is set out in Table 4.1.

Table 4.1 AGN's demand forecast for residential, commercial and industrial customers

Forecast element	2026-27	2027-28	2028-29	2029-30	2030-31	Change over period
Residential connections ²	477,264	476,823	479,878	482,411	484,172	+1.5%
Residential demand (GJ)	5,885,280	5,632,531	5,309,084	4,992,987	4,689,273	-20.3%

¹ AEMC, *Draft rule determination – National Gas Amendment (Updating the regulatory framework for gas connections) Rule*, September 2025.

² End of year.

Forecast element	2026-27	2027-28	2028-29	2029-30	2030-31	Change over period
Residential demand per customer (GJ) ³	12	12	11	10	10	-16.7%
Commercial connections ⁴	11,528	11,532	11,528	11,508	11,485	-0.4%
Commercial demand (GJ)	3,132,053	3,104,469	3,073,424	3,031,820	2,980,819	-4.8%
Commercial demand per customer (GJ) ⁵	272	269	267	263	260	-4.4%
Industrial connections ⁶	111	110	109	108	107	-3.6%
Industrial ACQ demand (GJ)	9,663,417	9,592,974	9,497,026	9,350,407	9,158,376	-5.2%
Industrial MDQ demand (GJ)	50,106	49,706	49,155	48,303	47,182	-5.8%
Industrial demand per customer (GJ) ⁷	87,058	87,209	87,129	86,578	85,592	-1.7%

Sourced from: AGN, *Attachment 13.1 – Core Energy Forecasting Report*, July 2025; AGN, *Workbook 1 – Forecast data 20250701 (Consolidated)* – tab S1.2 Cust. No.-by tariff.

Core Energy considered the -5.3% per annum reduction in total residential demand is due to a low rate of growth in connection numbers and ongoing reductions in per customer demand, which Core Energy noted is a trend observable from 2021.⁸

Core Energy forecast residential connections to increase by 0.3% per annum, which Core Energy considered is influenced by a lower level of building completions than historical trend, lower uptake of gas connections by those completions and dwelling growth outside AGN's service area (e.g. Mt Barker).

Core Energy considered the -5.5% per annum reduction in per residential customer demand is influenced by a base level of decline, a growing trend toward electric reverse-cycle air conditioning, growing use of heat pumps, improved dwelling construction standards favouring

³ AER analysis.

⁴ End of year.

⁵ AER analysis.

⁶ End of year.

⁷ AER analysis.

⁸ AGN, *Attachment 13.1 – Core Energy Forecasting Report – Public*, July 2025, p.6.

alternative energy sources, more high density dwellings with low rates of gas connection, and increasing use of rooftop solar and battery storage.

Core Energy forecast commercial demand to fall by 1.1% per annum over the forecast period due to falling connection numbers and falling demand per connection. Core Energy considered these are influenced by a lower level of new gas-intensive commercial development activity, rooftop solar and heat pumps, increased awareness of renewable electricity, government subsidies for fuel switching, higher gas disconnection levels, changes in construction standards and advances in energy efficiency.

Core Energy forecast industrial demand to fall by 1.2% per annum for ACQ customers and by 1.4% per annum for MDQ customers. Core Energy attributed these reductions to industrial customers enhancing profitability and meeting sustainability standards, noting also that reductions in industrial gas use is a long term trend going back to 2012.⁹

Core Energy undertook a validation of its forecasts by comparing its AGN residential and commercial demand forecast with the Australian Energy Market Operator’s (AEMO) Progressive and Step Change scenario forecasts in the 2025 Gas Statement of Opportunities (GSOO). Core Energy commented:¹⁰

...the AGN forecast is broadly consistent with the AEMO Step change scenario to 2027 and from 2028 trends closer to the Progressive scenario, finishing approximately at the midpoint between the two AEMO scenarios by end 2031.

Core Energy noted there is a difference between its base demand and the two AEMO scenarios, but that based on AGN’s actual data to end April 2025 it considers its AGN forecast is reasonable.

4.3 Assessment approach

Under the NGR, AGN must submit, as part of its access arrangement information:

- 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
- 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.

The NGR also require that forecasts and estimates:

- be supported by a statement of the basis of the forecast or estimate
- are arrived at on a reasonable basis
- represent the best forecast or estimate possible in the circumstances.

⁹ While Core Energy did not explain what it meant by “enhancing profitability”, we expect it likely relates to improved efficiency in use of gas for industrial processes.

¹⁰ AGN, *Attachment 13.1 – Core Energy Forecasting Report – Public*, July 2025, p.12.

There are two important considerations in assessing whether these are achieved:

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

To determine whether AGN's proposed demand forecasts were arrived at on a reasonable basis and are the best possible forecasts in the circumstances, we reviewed:

- the information provided by AGN
- the data inputs used to implement the forecasting methodology.

In making our draft decision, we had regard to:

- information provided by AGN as part of its proposed access arrangement
- the analysis of our consultant Frontier Economics
- stakeholder submissions.

4.4 Submissions on the proposal

The Consumer Challenge Panel (CCP33) submitted that across Australia's East Coast Gas Market AEMO forecasts residential and commercial gas consumption to fall.¹¹ For South Australia, CCP33 noted the Australian PV Institute estimates around 52% of homes had rooftop solar installed as at March 2025. However, CCP33 also noted there are no indications of a rapid decline in demand during the 2026–31 period and that forecasting demand, particularly for households and small businesses, is fraught.

The South Australian Reference Group Review Panel (SARG) submitted that, while hydrogen and biomethane may provide high heat fuel for business customers into the future, a long-term hydrogen future for AGN's gas network as a whole is unlikely.¹² SARG referenced the current cost and available volumes of both hydrogen and biomethane, their likely future volumes and costs, and noted that a range of hydrogen projects have been postponed or cancelled.

Energy Consumers Australia (ECA) submitted that, in the context of the connections rule change, the AER should carefully review AGN's connections forecast with a view to revising it downward.¹³ For the long term, ECA commented that use of hydrogen by households and small businesses is economically inefficient and technically difficult, while there is insufficient supply of biomethane to substitute for natural gas. On biomethane's future prospects, ECA referenced the Bio-Energy Roadmap in noting that Australia's potential biomethane supply is only 25% of Australia's existing gas use.

¹¹ CCP33, *Advice to AER Australian Gas Networks South Australia Access Arrangement Proposal 2026–31 (Final Plan July 2025)*, August 2025, p.6.

¹² SARG, *AGN Final Plan for South Australian Gas Network July 2026–June 2031 – Submission from the South Australian Reference Group Review Panel*, August 2025, p.11-19.

¹³ ECA, *Evoenergy and Australian Gas Networks access arrangements 2026–2031 – Submission to the Australian Energy Regulator*, August, 2025, pp.4-5.

4.5 Reasons for the draft decision

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. Our draft decision does not accept AGN's demand forecast, though we have used it as a placeholder for our draft decision. At a high level we consider it is reasonable for AGN's current circumstances but, subject to the AEMC's Connections rule change final determination reflecting its draft determination, regulatory settings are about to be altered.

The AEMC has indicated it will mandate cost reflective connection charges for all new customers connecting to, amongst others, AGN's South Australian gas network.¹⁴ We anticipate that AGN may wish to incorporate in its revised proposal a lower 2026–31 forecast of customer connections with commensurate impact on its demand forecast.¹⁵

Also, our consultant Frontier Economics identified a number of issues with the demand forecasting methodology used by AGN's consultant Core Energy. We require AGN to respond to those methodological issues with its revised proposal, including potentially by adjusting its 2026–31 demand forecast.

4.5.1 AGN's demand forecast

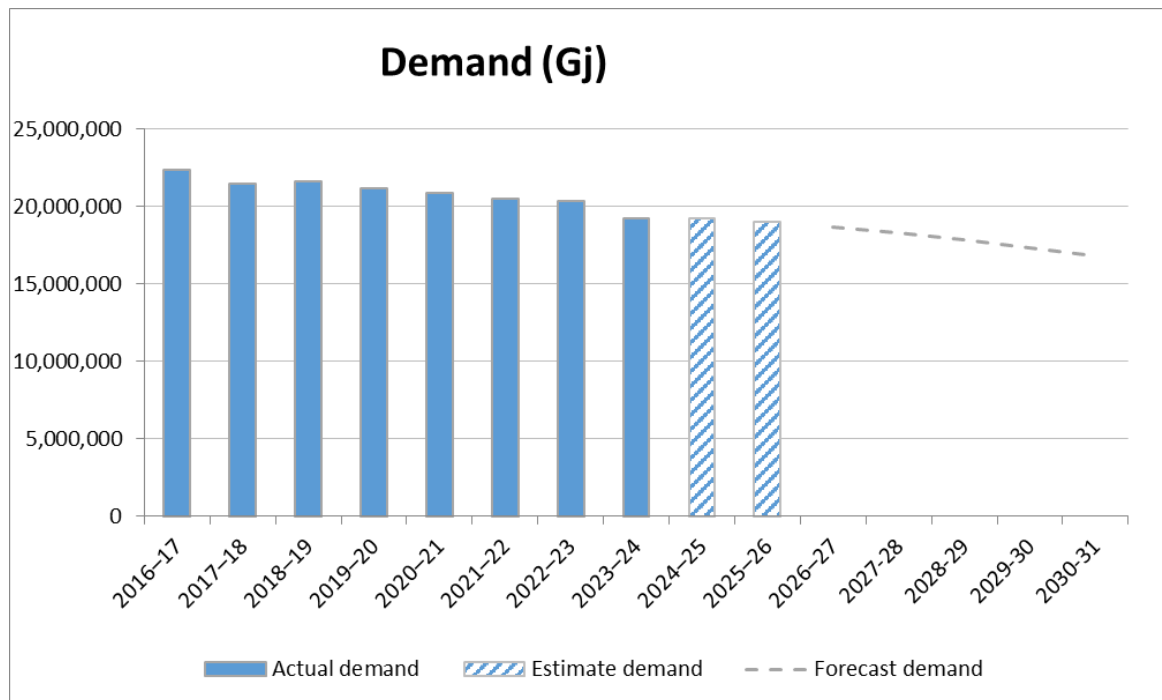
From a top-down perspective, AGN's connections and demand forecasts appear largely in line with AEMO's gas forecast. AGN is forecasting a 2.4% per year decline in demand, which falls between AEMO's current Progressive and Step Change scenarios for South Australia. Figure 4.1 illustrates AGN's 2026–31 forecast demand.

Expectations of declining demand continue a long-term trend, with AGN's per customer demand continuing to decline across all customer types – residential, commercial and industrial. As set out in Table 4.1, Core Energy expects residential per customer demand to decline by almost 17% over the 2026–31 period.

Core Energy's total demand forecast for each customer group also reflect declines for residential, commercial and industrial customers. Core Energy expects AGN's residential demand alone to decline by around one fifth over the 2026–31 period.

¹⁴ AEMC, *Draft rule determination – National Gas Amendment (Updating the regulatory framework for gas connections) Rule*, September 2025.

¹⁵ AEMC, *Draft rule determination – National Gas Amendment (Updating the regulatory framework for gas connections) Rule*, September 2025.

Figure 4.1 AGN’s forecast demand

Source: AER analysis.

Core Energy’s forecasting methodology incorporated:

- weather normalisation of historical demand and weather data by deriving an “effective degree day” index to remove the effect of abnormal weather conditions
- deriving annual residential consumption forecasts
- deriving annual commercial consumption forecasts.

4.5.2 Frontier Economics’ assessment of Core Energy’s methodology

We engaged Frontier Economics to assess Core Energy’s demand forecasts. Frontier Economics identified the following issues in Core Energy’s methodology:¹⁶

- limited justification for its effective degree day methodology with alternative specifications providing better results
- problems with the determination of “average” weather and use of incorrect weather sensitivity to normalise demand
- errors in recent monthly consumption data
- assumptions for connections, disconnections and demand per connection are unsupported by analysis.

¹⁶ Frontier Economics, *Review of gas demand forecasts for Australian Gas Network (SA) – Prepared for the Australian Energy Regulator*, November 2025.

We have published Frontier Economics’ report to us, so that AGN, Core Energy and stakeholders may see the detailed analysis informing our assessment and draft decision.

Weather normalisation / effective degree day methodology

Core Energy used historical weather observations (Adelaide airport monitoring station) to specify an effective degree day index. It then compared a linearised index to a daily index to understand the extent of variance from average exhibited for a specific day. Core Energy then regressed a monthly demand per connection on a monthly effective degree day to produce a coefficient. It multiplied this coefficient by the difference between linearised and monthly effective degree days to determine the impact of abnormal weather on demand per connection.

Frontier Economics identified that Core Energy’s approach is inconsistent with AEMO’s approach to forecasting South Australian demand. Frontier Economics replicated Core Energy’s regression analysis and compared it to AEMO’s methodology, for both residential and commercial customers. Table 4.2 sets out the results, with AEMO’s methodology providing higher R-squared outcomes. Note that AEMO undertakes two variants of its forecasting approach, one using effective degree days (EDD) and one using air temperature (HDD) – both are set out in Table 1. Both AEMO variants appeared to provide better outcomes than Core Energy’s approach.

Table 4.2 Frontier Economics’ comparison of model fit for different regressions

Dependent variable	Independent variable	Adjusted R squared
Residential demand per connection	Core’s EDD	0.182
Residential demand per connection	AEMO’s HDD	0.833
Residential demand per connection	AEMO’s EDD	0.813
Commercial demand per connection	Core’s EDD	0.782
Commercial demand per connection	AEMO’s HDD	0.820
Commercial demand per connection	AEMO’s EDD	0.788

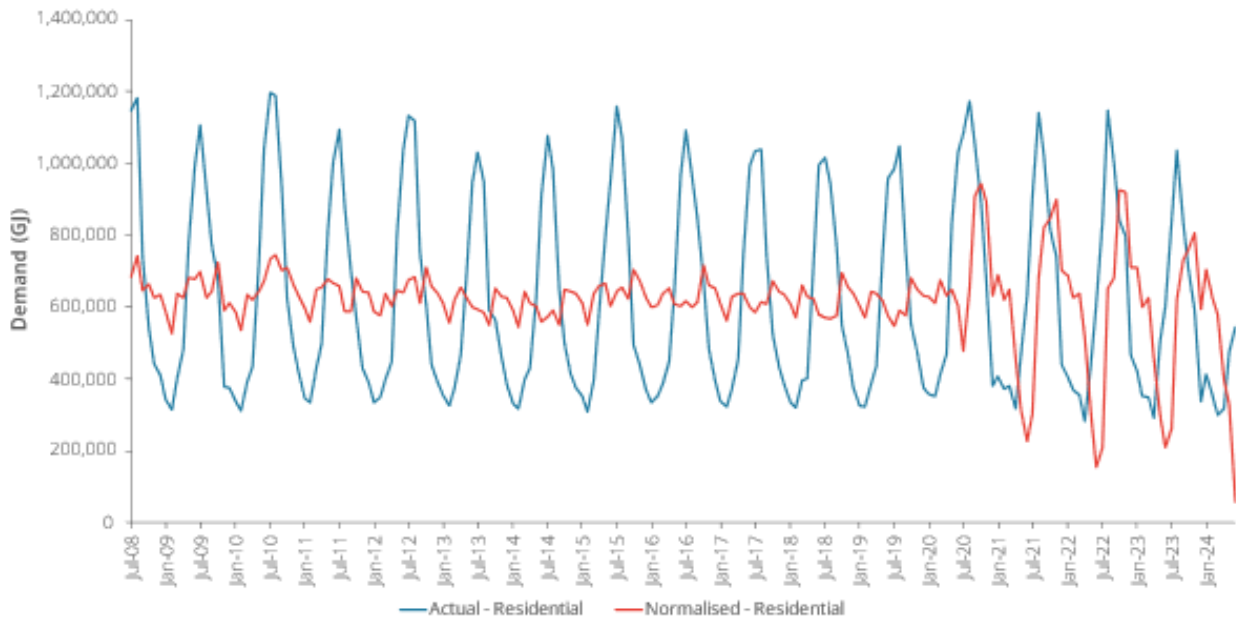
Source: Frontier Economics

Determining ‘average’ weather

Frontier Economics identified that Core Energy determined ‘average’ weather by applying a trend to historical observations, but the historical data set it used ends at 2020. By applying historical observations for 2020 to 2024, a different trend line is created. It’s unclear why Core Energy did not use a complete data set to infer a long term trend but the issue appears to impact its assessment of normalised residential demand compared to actual demand.

Figure 4.2 illustrates Core Energy’s normalised residential demand compared to actual residential demand with the time series break between the pre-2020 period and post-2020 period clearly visible. The red curve in Figure 4.2 is Core Energy’s normalised demand which shows seasonal characteristics from 2020 onwards, whereas prior to 2020 there is no seasonality.

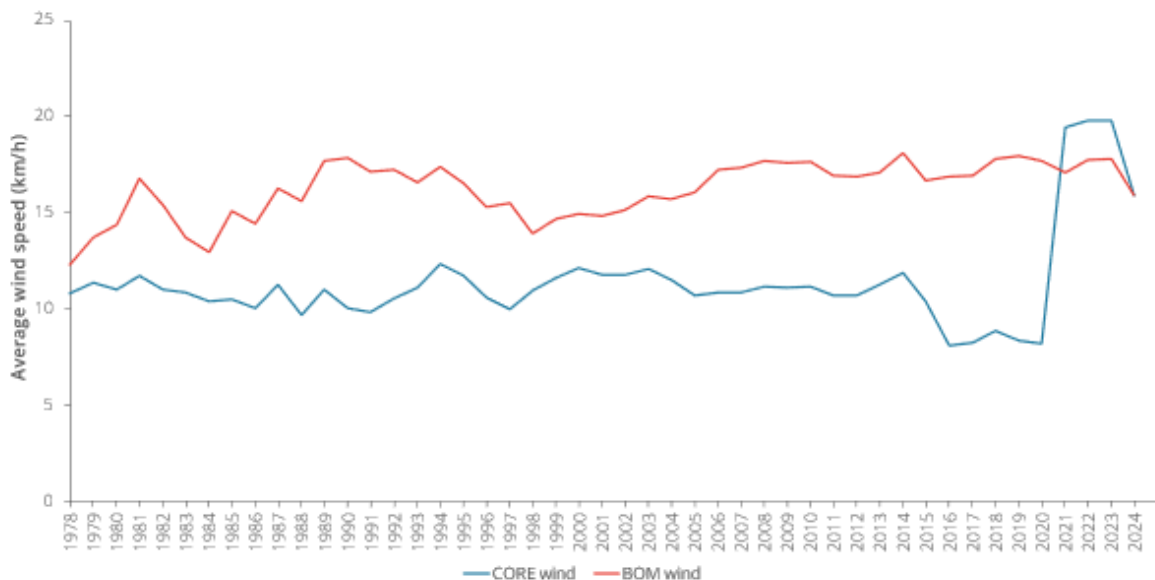
Figure 4.2 Core Energy’s normalised residential demand & actual demand



Source: Frontier Economics

Frontier Economics identified another time series break, this time in Core Energy’s wind speed time series. Figure 4.3 illustrates the annualised average daily wind speed used to inform Core Energy’s methodology. The time series break at 2020 in Core Energy’s curve compared to the Bureau of Meteorology’s curve is clearly visible.

Figure 4.3 Core energy’s average daily wind speed



Source: Frontier Economics

Frontier Economics also observed that Core Energy’s analysis does not account for non-weather drivers of demand, including changes in gas prices. Frontier Economics disputes Core Energy’s assertion that gas prices need not be modelled as an influence on consumption. Frontier Economics also commented that the impact of Covid on gas demand

has not been accounted for, meaning that the historical trends used by Core Energy may be distorted by Covid impacts on gas demand.

Errors in recent monthly consumption data

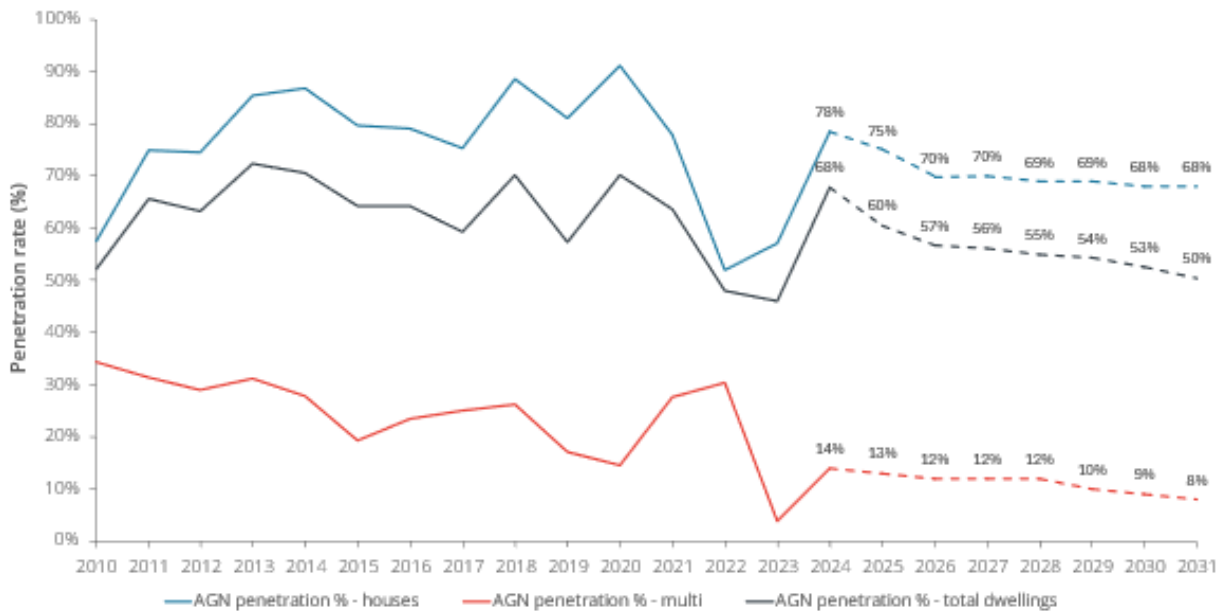
Frontier Economics identified a post 2020 winter gas consumption peak, in Core Energy’s work, that is two months later than the pre-2020 winter consumption peak. The difference may be attributable to use of two data sets to generate the time series, but this hasn’t been described by Core Energy. Frontier Economics noted the difference could also be attributed to changing weather patterns, but such a significant break in the time series suggests something happening in the data rather than such a large difference in actual observations from one year to the next.

Assumptions for connections, disconnections and demand per connection

Frontier Economics also identified problems with Core Energy’s assumed rate of residential dwelling connection to AGN (SA)’s gas network, presented as declining to 55% over the forecast period compared to 59% in the 2020 to 2024 period.

Figure 4 illustrates Core Energy’s gas connection forecast, described by Core Energy as a trend line of best fit through historical data. However, Frontier Economics noted that the trend line is actually a best fit through the forecast years in addition to historical years. This is problematic because the forecasts rest on assumptions without a clear basis. By excluding forecasts, a line of best fit differs from Core Energy’s trend line.

Figure 4.4 Core Energy’s gas connection rates

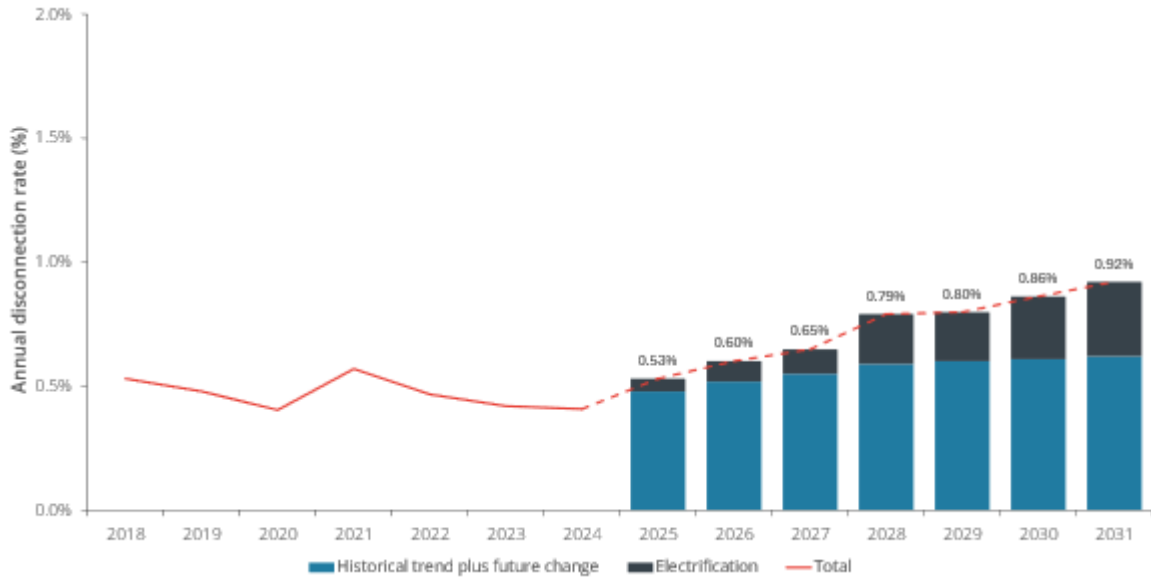


Source: Frontier Economics

Frontier Economics also noted that Core Energy’s model hard codes disconnection rates and that Core Energy does not explain what drives its disconnection forecasts. Figure 4.5 illustrates Core Energy’s disconnection rates, with a change in recent historical trend clear though not explained. Frontier Economics also noted that Core Energy does not explain what

is meant by “future change” and how this is distinguished from electrification, raising concerns about potential double counting.

Figure 4.5 Core Energy’s historical and forecast disconnection rates



Source: Frontier Economics

As noted above, while we consider AGN's 2026–31 forecast demand is reasonable in the current circumstances, it does not account for the expected impact of the upcoming Connections rule change. We anticipate AGN may wish to update both its connections forecast and demand forecasts with its revised proposal. In addition, we require AGN to respond to Frontier Economics’ assessment of Core Energy’s 2026–31 demand forecasts, including potentially by adjusting its demand forecasts in its revised proposal.

4.6 Revisions

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

Table 4.3 Demand revisions

Revision	Amendments
Revision 4.1	Make all necessary amendments to reflect our draft decision on the proposed connections and demand forecasts for the 2026–31 access arrangement period, as set out in section 4.5.

Glossary

Term	Definition
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation capital expenditure
capex	capital expenditure
CCP33	Consumer Challenge Panel, sub-panel 33
CESS	capital expenditure sharing scheme
NGO	National Gas Objective
NGL	National Gas Law
NGR	National Gas Rules
opex	operating expenditure
RAB	regulated asset base
repex	replacement expenditure
