

Final decision

Australian Gas Networks (Victoria & Albury)
Gas distribution access arrangement
1 July 2023 to 30 June 2028

Attachment 12 – Demand

June 2023

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12 Demand

This attachment sets out our assessment of AGN’s demand forecast for the 2023–28 access arrangement period (2023–28 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) and capital expenditure (capex), which are linked to network growth via new connections.

12.1 Final decision

Our final decision is to not accept AGN’s proposed demand forecast for the 2023–28 period, and substitute with a demand forecast based on the Australian Energy Market Operator’s (AEMO) 2023 Gas Statement of Opportunities (GSOO). We are satisfied this approach is consistent with rule 74 of the National Gas Rules (NGR).

Tables 12.1 and 12.2 set out our final decision for AGN’s forecast demand.

Table 12.1 AER’s final decision for Tariff V for the 2023–28 access arrangement period

	2023–24	2024–25	2025–26	2026–27	2027–28
Total residential connections	733,555	741,997	748,169	745,312	735,121
Residential consumption per connection (GJ)	40.9	39.8	38.4	36.8	34.7
Residential demand (TJ)	29,997	29,566	28,765	27,395	25,535
Commercial connections	23,770	23,377	23,511	23,646	23,782
Commercial consumption per connection (GJ)	349.2	350.0	338.6	320.6	297.1
Commercial demand (TJ)	8,302	8,182	7,961	7,581	7,067

Source: AER analysis

Table 12.2 AER’s final decision for Tariff D (Industrial) for the 2023–28 access arrangement period

	2023–24	2024–25	2025–26	2026–27	2027–28
Connections	285	289	292	296	300
Maximum Hourly Quantity (GJ)	5009	4958	4896	4888	4849

Source: AGN Final Plan_Attachment 13.1_Demand Forecasting Report_PUBLIC.

12.2 AGN's revised proposal

AGN provided an updated forecast of residential and commercial demand (Tariff V) in its revised proposal. AGN did not alter its forecast for industrial demand (Tariff D).

AGN engaged CORE Energy & Resources (CORE) to prepare the demand forecast for its Victorian network for the 2023–28 period. A summary of the key aspects of AGN's demand forecast is set out in Table 12.3 (Tariff V – residential and commercial) and Table 12.4 (Tariff D – industrial).¹

In summary, CORE forecasts:

- combined residential and commercial demand to fall by an average of 3% a year, driven by falling usage per connection and lower than expected connections growth
- industrial demand to remain relatively steady, based on the difficulty in electrifying this load, and the uncertainty of the impact of the Roadmap on usage in this sector.

Table 12.3 AGN's demand forecast for Tariff V for the 2023–28 access arrangement period

	2023–24	2024–25	2025–26	2026–27	2027–28
Total residential connections	729,114	730,125	725,903	714,968	699,009
Residential consumption per connection (GJ)	32.6	32.0	32.4	33.1	34.0
Residential demand (TJ)	29,381	28,342	27,078	25,507	23,887
Commercial connections	23,770	23,377	23,511	23,646	23,782
Commercial consumption per connection (GJ)	354.1	353.7	353.3	352.0	350.7
Commercial demand (TJ)	8,418	8,268	8,307	8,322	8,340

Source: AGN – revised proposal post tax revenue model.

Table 12.4 AGN's demand forecast for Tariff D (Industrial) for the 2023–28 access arrangement period

	2023–24	2024–25	2025–26	2026–27	2027–28
Connections	285	289	292	296	300
Maximum Hourly Quantity (GJ)	5009	4958	4896	4888	4849

Source: AGN Final Plan_Attachment 13.1_Demand Forecasting Report_PUBLIC.

¹ Tariff D is a gas customer who consumes more than 10 terajoules per annum.

12.3 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;²
- 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.³

The NGR also require that forecasts and estimates:⁴

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

There are two important considerations in assessing whether these requirements are met:

- 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 considered in developing demand forecasts.

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

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

In making our final decision, we had regard to:

- information provided by AGN as part of its proposed access arrangement and revised proposal
- AEMO's 2023 Victorian Gas Planning Report (VGPR) and Gas Statement of Opportunities (GSOO)
- additional information provided by AGN in response to the VGPR and GSOO
- stakeholder submissions.

12.3.1 Interrelationships

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

² NGR, r. 72(1)(a)(iii)

³ NGR, r. 72(1)(d)

⁴ NGR, r. 74.

Several interrelationships exist. This includes the effect of forecast demand on the efficient amount of capex, opex and tariffs in the 2023–28 period. In particular, demand forecasts impact:

- residential and commercial connections capex and abolishment opex – the number of new connections drives the volume of connections capex, while the number of customers exiting the network drives abolishment opex
- opex output growth – the forecast total connections volume and total consumption (output growth) are used to determine additional opex required to service a larger network
- reference tariffs – prices are based on forecast consumption (demand) per connection and total customer numbers. Tariffs are determined by dividing a portion of the service provider’s efficient cost (revenue) by number of customers (fixed component) and the remainder by the quantity of service delivered (variable component). This means that an increase in customer numbers or demand per connection will reduce the tariff price (provided revenue stays the same).

12.4 Reasons for final 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.

12.4.1 AGN’s forecast methodology and assumptions

We consider AGN’s initial demand forecast methodology and assumptions⁵ are a reasonable starting point to forecast future demand. In particular, they:

- are based on the analysis of historic trends in gas volumes and key drivers of demand
- utilise a weather normalisation method that is well established and that has previously been accepted by the AER.

Prior to the draft decision, AGN amended this approach to accommodate the 2022 Victorian Gas Substitution Roadmap (the Roadmap). In doing so, AGN reduced its earlier forecast of demand using post-model adjustments to reflect falling levels of consumption predicted by the Roadmap. In our draft decision, we accepted this approach was reasonable.⁶ However, we noted that AGN’s revised proposal should be updated to accommodate the latest data, including the outcome of the 2023 GSOO.

AGN updated its forecast demand in the revised proposal. AEMO had not published the 2023 GSOO at the time AGN’s revised proposal was submitted. AGN did not submit a revised forecast in response to the GSOO. Instead, it made a submission, noting why it did not consider this necessary.

⁵ That is, AGN’s approach to demand forecasting before the release of the Victorian Gas Substitution Roadmap and the 2023 Gas Statement of Opportunities.

⁶ Our full consideration of AGN’s response to the Roadmap is provided in Attachment 12 of the draft decision.

12.4.1.1 AEMO’s 2023 Gas Statement of Opportunities and Victorian Gas Planning Report

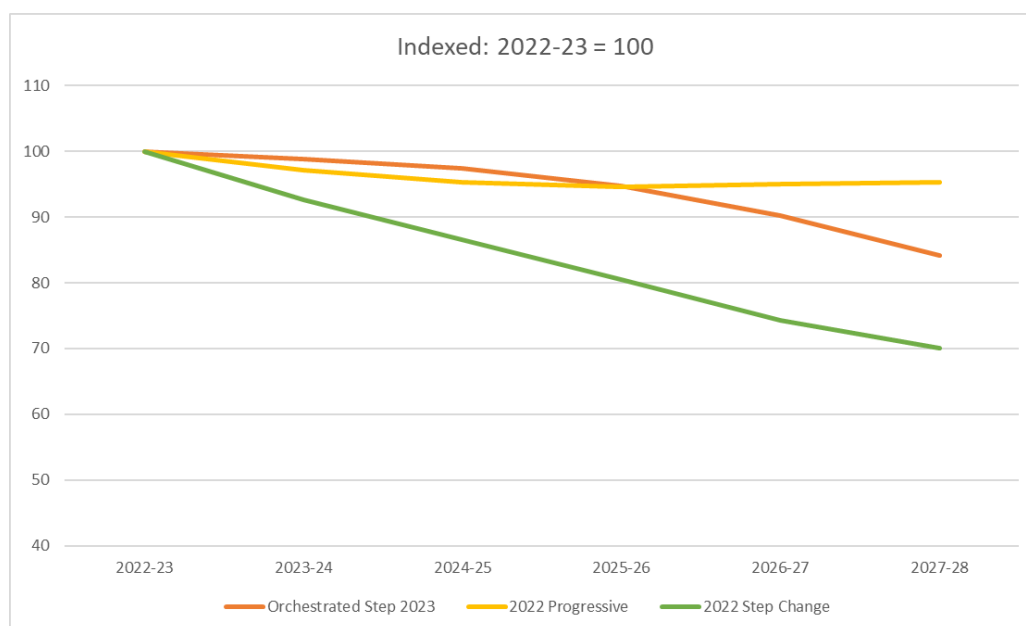
On 16 March 2023, AEMO released its Gas Statement of Opportunities (GSOO) and the related Victorian Gas Planning Report (VGPR). Among other things, the GSOO provides a forecast of gas consumption over the next 20 years, while the VGPR provides a more detailed consideration of Victoria’s gas supply and demand situation over the next five years.

AEMO typically considers several different demand scenarios in its GSOO and VGPR, including a central or most probable scenario. In 2022, amid growing uncertainty in future gas demand and policy, AEMO included two very different central scenarios, called progressive change⁷ and step change⁸. These both predicted falls in gas consumption in the lead-up to 2050, with step change predicting stronger policy intervention to curb demand, while progressive change predicted a slower drop based on improving energy efficiency and changes in customer preference over time.

In the 2023 GSOO and VGPR, AEMO has reverted to a single central scenario that sits somewhere between the two 2022 scenarios. It has called this an orchestrated step change. The orchestrated step change builds on the 2022 step change scenario, but considers a slower uptake of electrification. That is, it assumes that policy intervention will ramp up, but customers will be slower to convert from gas appliances to electric equivalents. Figure 12.1 illustrates the difference between AEMO’s new central scenario, and the two central scenarios from 2023.

⁷ The Progressive Change scenario represents a future that delivers action towards net zero emissions through technology advancements and based on current state and federal government environmental and energy policies. Key drivers include energy efficiency savings schemes and a continuing increase in the number of new connections during the outlook period.

⁸ The Step Change scenario represents a future with rapid consumer-led transformation of the energy sector, and a coordinated economy-wide approach that efficiently and effectively tackles the challenge of rapidly lowering emissions (including electrification of gas heating load), driven by consumer-led change with a focus on energy efficiency, digitalisation and step increases in global emissions policy above what is already committed.

Figure 12.1 – GSOO central scenarios for residential and commercial gas users in Victoria

Source: AEMO 2023 Gas Statement of opportunities.

12.4.1.2 AGN's response to the 2023 GSOO

AGN did not submit an update to its demand forecast in response to the 2023 GSOO. Instead, it submitted a document stating why its forecast was preferable to one based on the 2023 GSOO orchestrated step change. AGN's key argument is that AEMO and its forecasts are materially consistent, as the difference between the two is less than 2%.⁹

12.4.1.3 Our assessment

As noted above, we remain of the view that AGN's base forecasting approach is sound. That is, the process AGN applied to modelling was reasonable, based on historical trends, the accepted process of weather normalisation, and growth in new connections.

The focus of our draft decision was on AGN's post-model adjustments to account for the impact of the Roadmap. As these adjustments were included in response to new policy, they needed to be based on assumptions rather than on observed historical trend.

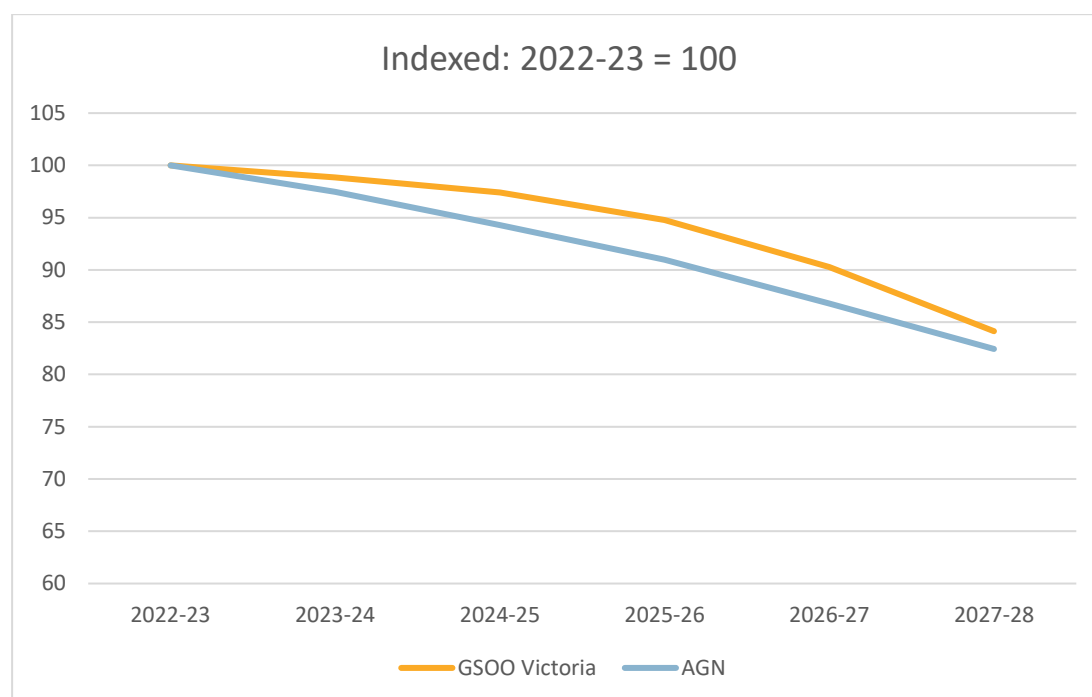
At the draft decision, we accepted these adjustments were reasonable, but stated they should be updated for the GSOO. In the final decision, we have focussed on the new aspects of the forecast, namely the impact of AEMO's latest forecast in the 2023 GSOO, and whether this represents a better forecast of demand than AGN's revised proposal.

As a starting point for our assessment, we considered whether AGN's revised proposal resulted in a significantly different demand trend than the orchestrated step change trend in

⁹ AGN, *AGIG Demand Forecast GSOO 2023 – Cover Note Final*, 29 March 2023.

the 2023 GSOO. Figure 12.2 shows AGN and AEMO’s demand trends for residential and commercial customers.

Figure 12.2 – Comparison of AGN and AEMO’s demand trends



Source: AEMO 2023 Gas Statement of opportunities, AER analysis.

As illustrated by Figure 12.2, AEMO’s trend is somewhat higher than AGN’s over the access arrangement period. In aggregate, applying AEMO’s trend will result in higher demand than the forecast put forward by AGN. Other things being equal, this would result in a small but significant decrease in reference tariffs if the AEMO GSOO trend was adopted.

We raised this with AGN as part of an information request. In response, AGN reiterated that it’s submission of 29 March 2023, and also noted the change in construction standards was likely to reduce new connections.¹⁰

On balance, we consider a forecast based on AEMO’s 2023 GSOO provides a better estimate of future demand than AGN’s forecast. While the difference in demand is relatively small, it is nonetheless higher than AGN’s forecast. We also consider that a significant fall in new connections growth and the change in new building standards was already considered in the draft decision, and is accounted for in the AEMO index. Adopting AEMO’s trend results in gas demand being around 2.5% higher across the access arrangement period.

AEMO’s orchestrated step change scenario takes into account the latest information and analysis around the adoption of fuel switching and ongoing changes in gas usage over the access arrangement period and beyond. Importantly, it predicts a lag in the large scale adopting of alternative fuels when compared to the 2022 step change scenario, and incorporates this in its latest forecast of gas consumption.

¹⁰ AGN, *response to information request #36*, 9 May 2023

We also note that, in our substitute forecast of demand, we have updated the customer number forecast. This takes account of our decision on abolishments (customer disconnections) in Attachment 6 of this final decision. We consider that, if fewer customers disconnect from the network, total customer numbers will be higher. As our decision includes fewer abolishments than forecast by AGN, we have adjusted total customer numbers upwards by a commensurate amount.

Finally, as noted in the draft decision, we are open to AGN submitting an application mid-period to vary its 2023–28 access arrangement if the trajectory of its demand is substantially different to our final decision. We would also expect AGN to engage with its customers if actual demand turns out to be materially higher or lower than our final decision by mid-period.

12.4.2 Tariff D demand forecast

We remain of the view from the draft decision that AGN's forecast for Tariff D demand represents the best forecast under the circumstances. Our reasons are outlined in Attachment 12 of the draft decision.

12.4.3 Minimum, maximum and average demand

The NGR requires that access arrangement information includes minimum, maximum and average demand for each receipt or delivery point for the earlier access arrangement period.¹¹ AGN's access arrangement information and its response to our regulatory information notice (RIN) satisfy these requirements.

12.4.4 Forecast pipeline capacity and utilisation

The NGR requires that, to the extent it is practicable to forecast pipeline capacity over the access arrangement period, the access arrangement information should include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period.¹²

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, meaning that calculating forecast capacity and utilisation is not practicable.

¹¹ NGR, r. 72(1)(a)(iii)(A).

¹² NGR, r. 72(1)(d).

Glossary

Term	Definition
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGN	Australian Gas Networks (Victoria and Albury)
Capex	Capital expenditure
CORE	CORE Energy & Resources
GSOO	Gas Statement of Opportunities
MGN	Multinet Gas Networks
NGR	National Gas Rules
Opex	Operating expenditure
RIN	Regulatory information notice
The Roadmap	Victorian Gas Substitution Roadmap
VGPR	Victorian Gas Planning Report