Economic Regulation Authority

Final decision on access arrangement for the Mid-West and South-West Gas Distribution Systems (2025 to 2029)

Attachment 2: Demand

8 November 2024

D283301

Acknowledgement of Country

At the ERA we value our cultural diversity and respect the traditional custodians of the land and waters on which we live and work.

We acknowledge their continuing connection to culture and community, their traditions and stories. We commit to listening, continuously improving our performance and building a brighter future together.

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Note

This attachment forms part of the ERA's final decision on the access arrangement for the Mid-West and South-West Gas Distribution Systems. It should be read in conjunction with all other parts of the final decision, which is comprised of the following document and attachments:

- Final decision on access arrangement for the Mid-West and South-West Gas Distribution Systems (2025 to 2029) – Overview, 8 November 2024:
  - Attachment 1: Access arrangement and services
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Attachment 2. Summary

Demand forecasts are critical in determining the necessary levels of capital and operating expenditure for an access arrangement period, and in setting the reference tariffs. Demand forecasts include projections for haulage reference services (the transportation of gas to homes and businesses) and ancillary reference services (which include the disconnection and reconnection of services, special meter reads and applying or removing meter locks).

The ERA has evaluated ATCO's revised demand forecast for both haulage and ancillary reference services for the sixth access arrangement period (AA6), and has considered the economic outlook for the relevant industries, historic trends for gas usage, and the broader policy environment. Additionally, the ERA considered feedback from stakeholders and commissioned a survey of residential builders on future demand for new dwellings and gas connections.

Long-term, demand for gas is likely to fall to meet net-zero emissions targets. The ERA has considered this in Final Decision Attachment 6 as part of ATCO's proposal for accelerated depreciation proposal. However, for this coming AA6 period, the impact of electrification on demand for ATCO's network will continue to decline slowly, which has been observed over recent years. For residential customers, the ERA expects that customers will continue to connect to the gas network, albeit at a slower rate, and will consume less gas as they purchase and use fewer and more efficient gas appliances.

Haulage service demand

ATCO proposed a revised haulage reference service demand forecast of 141,822TJ for the AA6 period. This is 5,231TJ (3.6 per cent) lower than ATCO's initial proposal, due to lower forecast demand in the A1 (large industrial and commercial) tariff class. ATCO projected an average customer base of 842,186 by 2029, which is 2,726 customers (0.3 per cent) higher than its initial proposal, due to a slight increase in forecast B3 residential customers.

In its revised proposal, ATCO adjusted the demand forecast by updating it with actual connection and consumption figures for 2023 and known changes for all tariff classes. It also used survey results for some customers in the A1 and A2 tariff classes.[1]

The ERA was concerned that ATCO's demand forecasts overly relied on historical trends, without taking into account the econometric impacts on demand for non-surveyed customers in the A1 and A2 tariff classes, as well as all customers in the B1, B2 and B3 tariff classes. [2]

The ERA engaged Oxford Economics to obtain actual dwelling completion data to inform the demand forecast for the B3 (residential customers) tariff class. The ERA also engaged Patterson Research Group to survey major residential builders on the take-up of electrification in new housing. Patterson's survey results indicated that an acceleration in residential electrification among new builds is unlikely during AA6.[3]

ATCO's survey of customers in the A1 and A2 tariff classes shows there is an expected increase in gas consumption over the AA6 period. The ERA has accepted ATCO's 2022 survey results for surveyed customers in the A1 and A2 tariff classes, with adjustments for known changes that occurred after the draft decision. For non-surveyed customers in the A1 and A2 tariff classes and all customers in the B1 and B2 tariff classes, the ERA considers that

1 Customers in the A1 and A2 tariff classes who provided demand forecasts for AA6 in response to ATCO's 2022 demand survey are referred to as surveyed customers. Remaining customers in the A1 and A2 tariff classes are referred to as non-surveyed customers.

2 Paragraph 24 - 30.

3 Paragraph 61, 62.

economic growth has an important influence on industrial and commercial activities, and therefore on gas demand. For these customers, the ERA has used econometric analysis as a basis to forecast demand. The ERA forecasts an increase in gas consumption for non-surveyed customers in the A1 and A2 tariff classes, as well as in the B1 and B2 tariff classes over the AA6 period.

The ERA projects an increase in gas consumption for B3 residential customers over the AA6 period due to an increase in net connections. This increase more than offsets a decline in consumption per connection, due to factors including the use of more efficient gas appliances, or electrifying some appliances in the home.

ERA revised forecast

The ERA forecasts an average customer base of 866,699 in 2029, at the end of the AA6 period, which is 24,513 (2.9 per cent) higher than ATCO's forecast. The ERA's demand forecast for haulage reference services is 148,521TJ for the AA6 period, which is 6,699TJ (4.7 per cent) higher than ATCO's forecast. The differences in the average customer base and demand forecasts are primarily in the B3 tariff classes influenced by a higher dwelling completion and connection in the ERA's analysis. Table 2.1 compares the ERA's and ATCO's demand forecast for haulage reference services.

Table 2.1: Haulage reference services demand forecast comparison between ATCO revised proposal and ERA final decision

Tariff class	ATCO revised proposal	ERA final decision	Variance	Variance (%)
A1 – Major industrial > 35 TJ				
Average customer base (2029)	63	68	5	7.94
Demand (AA6 total TJ)	68,110	69,041	931	1.37
A2 – Large customers 10 to 35TJ				
Average customer base (2029)	104	104	0	0.00
Demand (AA6 total TJ)	9,418	9,942	524	5.56
B1 – Medium customers < 10TJ				
Average customer base (2029)	2,303	2,311	8	0.35
Demand (AA6 total TJ)	10,662	11,407	745	6.99
B2 – Small-use commercial or large residential				
Average customer base (2029)	13,903	13,862	(41)	(0.29)
Demand (AA6 total TJ)	6,425	6,839	414	6.44
B3 – Small use customers				
Average customer base (2029)	825,813	850,354	24,541	2.97
Demand (AA6 total TJ)	47,207	51,292	4,085	8.65
Total				
Average customer base (2029)	**842,186**	**866,699**	**24,513**	**2.91**
Demand (AA6 total TJ)	**141,822**	**148,521**	**6,699**	**4.72**

Ancillary services demand

ATCO's forecast of ancillary reference services demand is based on the year end connections for the B3 tariff class, given that these ancillary services are predominantly only provided to users of the B3 tariff class. The ancillary reference services demand forecast is higher than ATCO's initial proposal, mainly due to the increase in the customer base.

The ERA's forecast for ancillary reference services is based on the ERA's average customer connection forecast for the B3 tariff class. Table 2.2 compares the ERA's and ATCO's demand forecast for ancillary reference services.

Table 2.2: Ancillary reference services demand forecast comparison between ATCO revised proposal and ERA final decision

Ancillary reference services	ATCO revised proposal	ERA final decision	Variance	Variance (%)
Applying a Meter Lock	48,116	50,737	2,621	5.45
Removing a Meter Lock	43,387	41,738	(1,649)	(3.80)
Deregistering a delivery point	10,483	16,452	5,969	56.94
Disconnecting a delivery point	16,127	17,610	1,483	9.20
Reconnection a delivery point	15,724	13,940	(1,784)	(11.35)
Permanent disconnection	6,767	9,549	2,782	41.11
Special meter reads	524,124	552,738	28,614	5.46

Summary of required amendments:

2.1 The demand must be amended to ERA's final decision in Table 2.21 and Table 2.22.

Regulatory requirements

1. The *National Gas Access (WA) Act 2009* implements a modified version of the National Gas Law (NGL) and National Gas Rules (NGR) in Western Australia. The rules referenced in this decision are those that apply in Western Australia.[4]

2. Further to preparing an access arrangement proposal for approval, the NGR requires the service provider to prepare and submit Access Arrangement Information (AAI).[5] AAI is information that is reasonably necessary for users (including prospective users) to understand the background to the access arrangement; and the basis and derivation of the various elements of the access arrangement.[6]

3. AAI must include any information that is specifically required by the NGL and NGR. Rule 72 sets out specific requirements for AAI relevant to price and revenue regulation and includes the following information requirements related to demand:

    - Where the access arrangement period commences at the end of an earlier access arrangement period, AAI for a distribution pipeline must include the following usage information over the earlier access arrangement period:
        - Minimum, maximum and average demand.
        - Customer numbers in total and by tariff class.
    - To the extent it is practicable to forecast pipeline capacity and use of pipeline capacity over the access arrangement period, AAI must include a forecast of pipeline capacity and use of pipeline capacity over that period and the basis on which the forecast has been derived.

4. Where forecasts and estimates are provided, they must adhere to the requirements set out in rule 74:

    - The forecast or estimate must be supported by a statement that sets out the basis for the forecast or estimate.
    - The forecast or estimate must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.

5. Additionally, under rule 75, any information that is inferred or derived from other information must be supported by the primary information on which the extrapolation or inference is based.

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4 The current rules that apply in Western Australia are available from the Australian Energy Market Commission: AEMC, 'National Gas Rules (Western Australia)' (online) (accessed November 2024).
At the time of this decision, *National Gas Rules – Western Australia version 12 (1 February 2024)* was in effect.

5 NGR, rule 43.

6 NGR, rule 42.

ERA draft decision

6. As part of its draft decision, the ERA reviewed and tested the demand forecast in ATCO's initial proposal and engaged National Institute of Economics and Industry Research (NIEIR) to review ATCO's proposal and provide an independent demand forecast. The ERA also engaged Patterson Research Group to conduct a customer survey targeting residential gas customers in the B3 tariff class and considered stakeholder submissions received in response to its issues paper.

7. ATCO's initial proposed haulage service demand forecast did not show evidence that the impact of economic drivers on demand was considered for all tariff classes. There were deficiencies in ATCO's B3 demand forecast assumptions that resulted in a significant decline in the average consumption rate and new connections. These assumptions included not using actual dwelling completions to analyse connection penetration trends, an overestimated decline in the connection penetration rate, a less robust forecast of the disconnection rate and not distinguishing disconnections for legacy customers and new customers in the historical trend analysis. [7] [8]

8. For A1 and A2 haulage tariff classes, which service large industrial and commercial customers, the ERA's draft decision adopted ATCO's demand forecast for surveyed customers, and NIEIR's econometric approach for non-surveyed customers.

9. For B1 and B2 haulage tariff classes, which service mainly commercial customers, the ERA adopted NIEIR's econometric approach in the draft decision.

10. For the B3 haulage tariff class, which services mainly residential customers, the ERA's draft decision adopted ATCO's bottom-up approach but adjusted for deficiencies identified by the ERA in ATCO's forecasts. The ERA also relied on NIEIR's econometric analysis to account for the economic impact on gas demand.

11. In the draft decision, the ERA did not find evidence that electrification will have a significant impact on gas demand during the AA6 Period.

12. For ancillary reference services, the ERA's draft decision was in-line with ATCO's approach, using the historical average service to connection ratio and the average connections in the B3 tariff class.

13. The comparison of ERA's draft decision and ATCO's initial proposal is illustrated in Table 2.3 and Table 2.4.

[7] Legacy customers are customers on the network at the start of 2009.

[8] New customers are customers added to the network since 2009.

Table 2.3: Haulage reference services demand forecast comparison between ATCO's initial proposal and ERA draft decision

Tariff Class	ATCO initial proposal	ERA draft decision	Variance	Variance (%)
A1 – Major industrial > 35 TJ				
Average customer base (2029)	76	77	1	1.32
Demand (AA6 total TJ)	74,868	76,331	1,463	1.95
A2 – Large customers 10 to 35TJ				
Average customer base (2029)	105	107	2	1.90
Demand (AA6 total TJ)	9,586	10,492	906	9.45
B1 – Medium customers < 10TJ				
Average customer base (2029)	2,370	2,082	(288)	(12.15)
Demand (AA6 total TJ)	10,051	11,396	1,345	13.38
B2 – Small-use commercial or large residential				
Average customer base (2029)	14,173	13,702	(471)	(3.32)
Demand (AA6 total TJ)	6,327	6,800	473	7.48
B3 – Small use customers				
Average customer base (2029)	822,736	837,875	15,139	1.84
Demand (AA6 total TJ)	46,221	51,682	5,461	11.81
Total				
Average customer base (2029)	**839,460**	**853,843**	**14,383**	**1.71**
Demand (AA6 total TJ)	**147,053**	**156,701**	**9,648**	**6.56**

Table 2.4: Ancillary reference services demand forecast comparison between ATCO's initial proposal and ERA draft decision

Ancillary reference services	ATCO initial proposal	ERA draft decision	Variance	Variance (%)
Applying a Meter Lock	44,215	50,620	6,405	14.49
Removing a Meter Lock	43,249	43,525	276	0.64
Deregistering a delivery point	17,927	18,177	250	1.39
Disconnecting a delivery point	18,892	19,641	749	3.96
Reconnection a delivery point	15,676	15,684	8	0.05
Permanent disconnection	10,235	10,152	(83)	(0.81)
Special meter reads	522,539	555,455	32,916	6.30

14. The ERA set out the following draft decision required amendments:

2.1 ATCO must amend its forecast haulage reference service demand to reflect the ERA's forecast demand in Table 2.20 [of Draft Decision Attachment 2].

2.2 ATCO must amend its forecast ancillary reference service demand to reflect the ERA's forecast demand in Table 2.21 of [Draft Decision Attachment 2].

ATCO response to draft decision

15. ATCO engaged CORE Energy Group to prepare a demand forecast.[9] CORE's revised demand forecast was updated with:

- The impact of 2023 actual connections and consumption.
- Weather normalisation for B1, B2 and B3 tariff classes.[10]
- Known changes for customers in A1 and A2 tariff classes.
- A more recent Housing Industry Association (HIA) report to forecast connections in the B3 tariff class.
- Analysis of macro-economic factors and micro factors impacting the demand forecast.

16. In the draft decision, the ERA required ATCO to include the following changes for the revised demand forecast:

- The demand forecast for A1, A2, B1 and B2 tariff classes should be based on econometric variables, taking into account the demand profile of the industrial and commercial customers.
- The demand forecast for A1 and A2 tariff classes should be updated with a more recent customer demand survey results reflecting a revised gas consumption expectation.
- Weather normalisation should be incorporated into the demand forecasts for A1 and A2 tariff classes.
- The demand forecast for new customers in the B3 tariff class should use the historical trend of actual dwelling completions, and connection penetration should be based on historical trends between 2014 and 2021. ATCO was asked to provide evidence if it considers that the decline in the connection forecast is faster than the historical trend.
- For the B3 tariff class, the effect of permanent disconnections and temporary disconnections on the disconnection forecast should be assessed, and a robust trend analysis including, but not limited to, a separate forecast for legacy customer connections and new customer connections.[11]
- For the B3 tariff class, a robust trend analysis is required to forecast consumption separately for legacy customers and new customers, and econometric variables such as household disposable income and gas price elasticity should be incorporated into the consumption forecast.
- A revised demand forecast would require the incorporation of new information that affects gas demand during AA6, including 2023 actual demand.
- The forecast ancillary reference services demand should be amended to reflect the ERA's demand forecast.

9 ATCO, ATCO Gas 2025-2029 Revised Plan ATCO Mid-West and South-West Gas Distribution Systems June 2024, (online) (accessed November 2024).

10 Historical gas consumption adjusted to account for weather influence, for example, seasonal winter heating.

11 Legacy customers are customers on the network at the start of 2009. New customers are customers added to the network since 2009.

17. ATCO responded as follows:[12]

- ATCO does not consider that the use of econometric variables alone provides the best estimate for A1 and A2 tariff classes. ATCO considers that the A1 and A2 tariff class customer survey conducted for AA6 derived a better estimation of the gas consumption. ATCO noted that CORE analysed a range of macroeconomic factors affecting customers in B1 and B2 tariff classes but did not identify a statistical relationship for the demand forecast. Accordingly, ATCO did not use econometric variables for the demand forecast in the B3 tariff class.
- ATCO did not undertake a more recent customer demand survey for the A1 and A2 tariff classes as it considered it did not have enough time in the six-week period between the draft decision and the due date for the revised response. ATCO does not consider the change in the economic environment should be relied on for demand forecasts because there is no strong relationship between demand and economic variables.
- ATCO did not incorporate weather normalisation in the revised forecast for A1 and A2 tariff classes, because ATCO did not find any relationships in the annual demand movements and weather in these tariff classes, based on CORE's analysis.
- ATCO did not use the historical trends of actual dwelling completions in its revised demand forecast for the B3 tariff class. ATCO retained CORE's method of using estimated dwelling completions based on lagged dwelling commencements provided by the HIA to analyse the historical connection penetration trend. ATCO did not change the connection penetration forecast that is based on CORE's forecast method. ATCO provided additional information to support CORE's forecast.
- ATCO considered the effect of permanent and temporary disconnections on the disconnection forecast for the B3 tariff class. ATCO confirmed that its disconnection forecasts only include permanent disconnections. CORE uses the yearly opening connections balance between 2009 to 2023 to arrive at a base level for the disconnection forecast in AA6 at a rate of 0.36 per cent. CORE adjusted the base disconnection rate using its scenario analysis of the electrification impact to arrive at a disconnection rate of 0.46 per cent for AA6.
- ATCO considered the different usage levels of legacy customer connections and new customer connections. ATCO analysed econometric variables but did not incorporate these into the consumption forecast for B3 customers. ATCO considered that the impact on gas usage was not large if most price sensitive customers received Government support.
- ATCO revised its demand forecast taking into account 2023 actual connections and consumption for all tariff classes.
- ATCO incorporated the 2023 actual number of services for each ancillary service into its analysis for developing its ancillary services demand forecast.

[12] ATCO, ATCO Gas 2025-2029 Revised Plan ATCO Mid-West and South-West Gas Distribution Systems June 2024, (online) (accessed November 2024)

Submissions to the ERA

18. The ERA received submissions from three stakeholders on ATCO's revised demand proposal for AA6.

19. Alinta noted that ATCO did not appear to have used historical trends or considered customer results from the Patterson Research Group survey in its connection forecast. Alinta also considered that ATCO has overestimated disconnections, stating "despite the increasing focus on reducing emissions, there is no evidence of a rapid shift from gas to all-electric application in WA households." Alinta also considered that ATCO overestimated the decline in the consumption rate of customers in the B3 tariff class. In addition, Alinta supported the use of econometric variables in the demand model for B3 customers.[13]

20. The Chamber of Minerals and Energy (CME) acknowledged that dynamic scenario modelling of industrial demand and fuel switching is challenging and expressed support for ATCO's effort to address this concern. CME noted that major announced movements concerning gas demand "cannot be sufficiently linked to price elasticity and economic activity", and that "these decisions were inherently complex and not attributable to specific operational factors alone and should not be taken directly to infer a lowering of gas prices from 2025."[14]

21. The WA Expert Consumer Panel noted that ATCO's customer base forecast for AA6 is optimistic. The Panel engaged TRAC Partners for advice on ATCO's revised proposal. Although the Panel did not specifically endorse TRAC's advice, it considered that the ERA should address the matters raised by TRAC. TRAC provided its opinion on the selection of the data set for analysis, the transparency of the methodology, and the potential to include a trigger event or a tariff variation mechanism in the access arrangement, given the uncertainty associated with demand forecasting.[15]

13 Alinta Energy, (online) (accessed November 2024).

14 Chamber of Minerals and Energy, (online) (accessed November 2024).

15 WA Expert Consumer Panel (online) (accessed November 2024).

Final decision

22. The ERA reviewed ATCO's revised demand forecast for haulage reference services and ancillary services. ATCO has continued to adopt its consultant's (CORE Energy) demand forecast in the revised demand proposal.

23. For the final decision, the ERA retains the forecasting approach used in the draft decision. The ERA adopted ATCO's 2022 demand survey results for surveyed customers in the A1 and A2 tariff classes. The ERA used NIEIR's multi-industrial sector econometric and gas price elasticity analysis framework for the ATCO distribution network as the basis to forecast gas demand for non-surveyed customers in the A1 and A2 tariff classes, as well as all customers in the B1 and B2 tariff classes. The ERA adjusted the results of the econometric analysis with respect to the historical demand trend and known changes since the draft decision. For the B3 tariff class, the ERA used NIEIR's analysis of household disposable income and gas price elasticity to complement the bottom-up historical trend analysis. To support the demand forecast in the B3 tariff class, the ERA engaged Patterson Research Group to assess the rate of electrification in the new homes market, and obtained historical and forecast dwelling completion data from Oxford Economics. The ERA incorporated 2023 actual connections and consumption into the demand forecast analysis across all tariff classes. The ERA has amended the demand forecast for all tariff classes.

Haulage reference services

ERA assessment of ATCO's forecast approach

24. For A1 and A2 tariff classes, ATCO's consultant CORE used the results from ATCO's 2022 demand survey, which represents 73 per cent of combined consumption in these tariff classes. For non-surveyed customers in the A1 and A2 tariff classes, as well as all customers in the B1, B2 tariff and B3 tariff classes, CORE relied on the historical trend analysis of connections and consumption for its demand forecast.[16]

25. CORE did not include the effect of economic factors and gas prices in its forecast for non-surveyed customers in the A1 and A2 tariff classes, or for all customers in the B1, B2 and B3 tariff classes.

26. CORE did not find a significant relationship between gas prices and demand, citing "there has been major announced movements in gas demand in recent months which account for up to 10% WA gas demand which are attributable to specific operation factors alone – including the closure of the Kwinana alumina operation, major reduction in the CITIC iron operation, and expansions in gold field operations." CORE, therefore, expected a lower gas price starting from 2025.[17]

27. CORE's analysis indicated a weak relationship between Western Australia's Gross State Product (GSP) and gas demand. ATCO did not conduct a new demand survey for the A1 and A2 tariff classes, as recommended in the ERA's draft decision, citing the high degree of accuracy in its current projections and the short time between the draft decision and when ATCO's revised proposal was due. ATCO stated that "while

16 ATCO, ATCO Gas 2025-2029 Plan ATCO Mid-West and South-West Gas Distribution Systems September 2023, p. 87, (online) (accessed November 2024).

17 CORE Energy, Attachment 05.101, CORE Energy-Gas Demand Forecast Report Draft Decision Response 2025-2029, p. 27, (online) (accessed November 2024).

the economic environment continues to change, ATCO believes there is no strong relationship between demand and economic variables that could be relied upon for forecasting purposes." ATCO submitted that structural and operation changes by businesses often drive demand in the A1 and A2 tariff class. [18] [19]

28. The ERA considers that CORE's economic growth analysis relied on aggregate Western Australian economic activities. This analysis covers the whole State economy and so dilutes the economic impact on gas demand within ATCO's distribution network area. CORE did not provide evidence that it has analysed gas supply risks, leading the ERA to conclude that CORE's expectation regarding gas prices lacks analytical support. The ERA maintains its view from the draft decision that NIEIR's multi-sector econometric and gas price elasticity analysis are appropriate for the demand forecast.

ERA's forecast approach

29. The ERA concludes that economic growth influences business activities in industrial and commercial sectors, which in turn affects the growth of the customer base. Gas prices also inform businesses' energy use decisions. NIEIR's econometric analysis, conducted at the industrial sector level and within ATCO's network, demonstrate the varying growth rates of business activities in different industrial and commercial sectors. NIEIR's regional energy model highlighted the broader connections between its national economic models and the regional energy models.[20]

30. The ERA retains its view that economic factors are important for forecasting average demand trends in the industrial and commercial sectors, with other factors such as historical trends and policy being additional considerations. The economic environment and gas prices also directly affect household incomes, which affects the use of gas by residential customers. Therefore, the ERA retains the forecasting approach used in the draft decision as described in paragraph 23.

A1 and A2 tariff classes: assessment of ATCO's revised proposal

31. In addition to the overall forecasting approach discussed in paragraph 24 to 30, the ERA identified deficiencies in CORE's forecast for the A1 and A2 tariff classes.

32. In CORE's forecast, one A1 customer that disconnected in 2023 was omitted from ATCO's customer base for the AA6 period. According to information provided by ATCO, this disconnection in 2023 was due to maintenance work carried out by the customer.[21] This customer was one of the surveyed customers in ATCO's 2022 demand survey with demand projections for AA6 between 2024 and 2029, indicating that this customer would reconnect during AA6.

33. CORE assumed four disconnections in 2024 and one disconnection for each subsequent year during the AA6 period for the A1 tariff class but did not provide a basis or explanation for these assumptions. The ERA requested additional

[18] ATCO, ATCO Gas 2025-2029 Revised Plan ATCO Mid-West and South-West Gas Distribution Systems June 2024, p. 21, (online) (accessed November 2024).

[19] ATCO, ATCO Gas 2025-2029 Revised Plan ATCO Mid-West and South-West Gas Distribution Systems June 2024, p. 23, (online) (accessed November 2024).

[20] NIEIR's report p. 22 (online) (accessed November 2024); NIEIR's gas demand model (confidential).

[21] ATCO's response to ERA's information request ERA18.

information from ATCO to assess the disconnections in 2024, which indicated only three disconnections.[22]

34. CORE underestimated connection and consumption forecasts for the A1 tariff class in AA6 by not including the reconnection of the A1 customer (paragraph 32), coupled with excessive disconnection assumptions.

35. CORE's demand forecast for non-surveyed customers in the A1 and A2 tariff classes relied on analysing the historical trend of consumption per connection, with some unsubstantiated post trend adjustments. The ERA has not relied on CORE's historical trend analysis of consumption per connection for non-surveyed customers because it is based on total customers (including surveyed customers) instead of only the non-surveyed customers. [23]

A1 and A2 tariff classes: ERA's forecast

36. The ERA has forecast demand for A1 and A2 customers adopting the same distinction as ATCO between surveyed customers and non-surveyed customers. The ERA's preference is for ATCO to survey these customer groups given the low number of customers and the high consumption levels of these customers.

37. For surveyed customers, the ERA has adopted ATCO's 2022 demand survey results. Based on information provided by ATCO, and in the absence of an updated survey, the ERA adjusted these results to account for known changes that occurred after 2022, including connections, disconnections and tariff class reclassifications, as well as for two connections delayed to 2024 and 2026. The ERA's forecast also accounts for one reconnection by a customer who was temporarily disconnected in 2023 due to maintenance work.[24]

38. In the absence of specific information related to gas consumption intentions for non-surveyed customers, the ERA adopted NIEIR's econometric analysis (paragraph 29 to 30) as the framework to forecast average trends and overall changes in consumption and connections for non-surveyed customers in the A1 and A2 tariff classes.

39. For non-surveyed customers, the ERA incorporated the 2023 actual connections and consumption data in its demand forecast analysis. The ERA also updated NIEIR's economic growth forecast based on the GSP forecast in Western Australia's State Budget 2024/25 (WA State Budget), which was published subsequent to receiving the advice from NIEIR. The WA State Budget indicated a GSP growth of 2.00 per cent in 2025/26, rising to 2.25 per cent in 2026/27 and 2027/28. The ERA adopted the WA State Budget's GSP growth forecast for the period between 2025 and 2027, with an assumed GSP growth of 2.25 per cent for 2028 and 2029, as the WA State Budget did not provide forecasts for these latter years. The ERA's forecast represents a reduction of 0.73 per cent on the average growth rate from NIEIR's GSP forecast over the AA6 period. Additionally, the ERA analysed the historical trends for disconnections and new connections between 2014 and 2023, leading to an

[22] ATCO's response to ERA's information request ERA19.

[23] CORE Energy, demand model, (confidential).

[24] Paragraph 32.

adjustment to the net connection forecast derived from the econometric analysis accordingly. [25]

40. The consumption forecast in both the A1 and A2 tariff classes exhibits an increasing trend mainly influenced by consumption among surveyed customers which represent 73 per cent of combined consumption in the A1 and A2 tariff classes.[26]

41. Based on NIEIR's weather normalisation analysis, the ERA observed the weather impact on gas demand in the A1 and A2 tariff classes to be negligible. Therefore, the ERA has not included weather impact in the demand forecast for these tariff classes in the final decision which is consistent with ATCO's approach.

42. As a result of this analysis, the ERA's demand forecasts are different from ATCO's revised forecasts.

43. The demand forecast comparisons for the A1 tariff class are in Table 2.5 to Table 2.7, showing total demand 1.4 per cent higher than ATCO's revised proposal. The demand forecast comparisons for the A2 tariff class are in Table 2.8 to Table 2.10, showing total demand 5.6 per cent higher than ATCO's revised proposal.

Table 2.5: Comparison of average connection forecast for the A1 tariff class

	2024	2025	2026	2027	2028	2029	AA6 net addition
ATCO	68	66	66	65	64	63	(5)
ERA	69	68	68	69	68	68	(1)

Table 2.6: Comparison of gas demand forecast for the A1 tariff class (TJ)

	2024	2025	2026	2027	2028	2029	AA6 total
ATCO	12,150	13,178	13,379	13,877	13,855	13,821	68,110
ERA	12,626	12,320	13,697	14,278	14,358	14,388	69,041

Table 2.7: Comparison of consumption per connection forecast for the A1 tariff class (GJ)

	2024	2025	2026	2027	2028	2029
ATCO	178,676	199,667	202,712	213,492	216,484	219,381
ERA	182,986	181,176	201,426	206,928	211,147	211,588

Table 2.8: Comparison of average connection forecast for the A2 tariff class

	2024	2025	2026	2027	2028	2029	AA6 net addition
ATCO	105	104	104	104	104	104	(1)
ERA	105	104	104	105	105	104	(1)

25 The Government of Western Australia, Western Australia Stage Budget 2024-25 Budget Paper No.3 Economic and Fiscal Outlook, (online) (accessed November 2024).

26 ATCO, ATCO Gas 2025-2029 Plan ATCO Mid-West and South-West Gas Distribution Systems September 2023, p. 87, (online) (accessed November 2024).

Table 2.9: Comparison of gas demand forecast for the A2 tariff class (TJ)

	2024	2025	2026	2027	2028	2029	AA6 total
ATCO	1,898	1,900	1,886	1,882	1,877	1,873	9,418
ERA	1,936	1,971	1,973	1,992	1,999	2,007	9,942

Table 2.10: Comparison of consumption per connection forecast for the A2 tariff class (GJ)

	2024	2025	2026	2027	2028	2029
ATCO	18,076	18,269	18,135	18,096	18,048	18,010
ERA	18,438	18,952	18,971	18,971	19,038	19,298

B1 and B2 tariff classes: assessment of ATCO's revised proposal

44. In addition to the overall forecasting approach discussed in paragraph 24 to 30, the ERA identified deficiencies in CORE's forecast for the B1 and B2 tariff classes.

45. CORE's demand model relied on historical trend analysis to forecast connection growth and consumption per connection for the B1 and B2 tariff classes. The ERA maintains the position from the draft decision that historical consumption per connection fluctuates due to the diverse range of business sizes and the nature of business activities. Therefore, consumption per connection is not a sufficiently robust variable on its own for the demand forecast.

B1 and B2 tariff classes: ERA's forecast

46. The ERA has incorporated 2023 actual connections and consumption into the analysis for the demand forecast.

47. The ERA considers NIEIR's econometric analysis (paragraph 29 to 30) is a suitable approach for forecasting average trends and an overall change in consumption and connections for the B1 and B2 tariff classes. The ERA adjusted NIEIR's economic growth forecast based on the GSP forecast in the 2024/25 State Budget, as described in paragraph 39. The ERA applied this adjustment to the econometric analysis to forecast the demand in the B1 and B2 tariff classes.

48. The ERA analysed the historical trend in net connections and consumption per connection for customers in the B1 and B2 tariff classes. The ERA observed a downward trend in the net connection growth rate in the B1 tariff class and an upward trend in the net connection growth rate in the B2 tariff class. Also, for new B1 and B2 customers there is a downward trend in consumption per connection. The ERA adjusted the demand forecast derived from the econometric analysis described in paragraph 47, reflecting observed historical connection and consumption trends.

49. As a result of this analysis, the ERA's demand forecasts are different from ATCO's revised forecasts.

50. The ERA's demand forecast comparison for the B1 tariff class are in Table 2.11 to Table 2.13, showing that while the ERA is only forecasting six net customer additions more than ATCO during AA6, the total gas consumption is higher than ATCO by 7.0 per cent, which is a material variation. The demand forecast comparison for the B2 tariff are in Table 2.14 to Table 2.16, showing that despite the ERA forecasting 39

fewer net customer additions during AA6 than ATCO, the total gas consumption is higher than ATCO by 6.4 per cent.

Table 2.11: Comparison of average connection forecast for the B1 tariff class

	2024	2025	2026	2027	2028	2029	AA6 net addition
ATCO	2,046	2,095	2,145	2,196	2,249	2,303	257
ERA	2,048	2,101	2,152	2,205	2,259	2,311	263

Table 2.12: Comparison of gas demand forecast for the B1 tariff class (TJ)

	2024	2025	2026	2027	2028	2029	AA6 total
ATCO	2,164	2,154	2,143	2,132	2,122	2,111	10,662
ERA	2,223	2,242	2,262	2,283	2,301	2,319	11,407

Table 2.13: Comparison of consumption per connection forecast for the B1 tariff class (GJ)

	2024	2025	2026	2027	2028	2029
ATCO	1,058	1,028	999	971	944	917
ERA	1,085	1,067	1,051	1,035	1,019	1,003

Table 2.14: Comparison of average connection forecast for the B2 tariff class

	2024	2025	2026	2027	2028	2029	AA6 net addition
ATCO	12,819	13,009	13,202	13,397	13,631	13,903	1,084
ERA	12,817	13,001	13,201	13,424	13,647	13,862	1,045

Table 2.15: Comparison of gas demand forecast for the B2 tariff class (TJ)

	2024	2025	2026	2027	2028	2029	AA6 total
ATCO	1,310	1,301	1,292	1,282	1,276	1,274	6,425
ERA	1,337	1,345	1,356	1,369	1,379	1,390	6,839

Table 2.16: Comparison of consumption per connection forecast for the B2 tariff class (GJ)

	2024	2025	2026	2027	2028	2029
ATCO	102.19	100.01	97.86	95.69	93.61	91.63
ERA	104.31	103.45	102.72	101.98	101.05	100.27

B3 tariff classes: assessment of ATCO's revised proposal

New connections

51. In its revised proposal, ATCO retained CORE's method of forecasting dwelling completions, which is an estimate made by lagging dwelling commencements

provided by the HIA. For the new connection forecast, ATCO retained CORE's method of using estimated historical dwelling completions, instead of actual historical dwelling completions, to analyse the connection penetration trend (that is, the percentage of dwelling completions connecting to ATCO's network). This trend is a key factor in forecasting new connections. CORE's dwelling completion analysis excluded multi-storey unit developments. Multi-storey unit dwellings are generally large gas users outside the B3 tariff class.[27]

52. The ERA recognises that while dwelling commencements can be a valid forecasting input for new connections, the ERA prefers to use actual dwelling completions, as published by the Australian Bureau of Statistics (ABS), as they are a more reliable and representative basis for forecasting connection trends.

53. CORE projected an average connection penetration rate of 71 per cent for AA6 based on its historical connection penetration analysis. The ERA found that CORE's proposed average connection penetration rate is unsuitable because:

- CORE's analysis relied on estimated dwelling completions rather than actual dwelling completions (as described above), which led to a lower connection forecast.[28]
- CORE's dwelling completion estimate included dwelling activities outside of ATCO's distribution network area, which affects the accuracy of the forecast.
- CORE's projection of a historical downward step change in the connection forecast is not supported by a robust data trend.

54. ATCO noted three fully electrified new greenfield residential developments within its distribution network to support the connection penetration analysis. The ERA notes that new building lots in these developments are released in stages, with the number of lots released at each stage being relatively low compared to overall greenfield developments, thus, would not elevate the electrification impact on the connection penetrations in the short term. Without a significant increase in the number of fully electrified dwelling developments, the ERA considers it is reasonable to assume that the historical connection penetration trend appropriately reflects the impact of electrification over the AA6 period.[29] [30]

Disconnections

55. In the revised proposal, ATCO retained CORE's method for forecasting disconnections, which is based on the historical disconnections trend analysis. CORE's historical disconnection analysis is based on the opening connection balance, which includes the new connection additions from previous years.[31]

56. CORE did not distinguish disconnections for the legacy customers and new customers in the historical trend analysis. Additionally, CORE did not account for the

[27] CORE Energy, Attachment 05.101, CORE Energy-Gas Demand Forecast Report Draft Decision Response 2025-2029, p. 31, (online) (accessed November 2024).

[28] CORE's estimated dwelling completion in 2022 is higher than the actual total WA dwelling completions published by the ABS.

[29] ATCO, ATCO GAS 2025-2029 REVISED PLAN ATCO Mid-West and South-West Gas Distribution Systems June 2024, pp. 26-28 (online) (accessed November 2024).

[30] Rivermark development, (online) (accessed November 2024).

[31] Opening balance of connections between 2009 and 2023.

likelihood that newly connected customers would be unlikely to disconnect in the short term. [32] [33]

57. The ERA considers that CORE's approach for analysing the disconnections did not differentiate between the disconnection profiles of legacy customers and new customers.

Consumption per connection

58. In its revised proposal, ATCO retained CORE's method for forecasting consumption per connection. In the forecast, CORE used different consumption per connection assumptions for existing customers at the end of 2023, and for new customers in 2024 and AA6. The consumption per connection for new customers includes the expected ramp up over the first two years, then stabilise at a rate lower than the existing customers.

59. The ERA observed that CORE's consumption per connection for existing customers at the end of 2023 is a weighted average consumption per connection of the legacy customers (customers connected prior to 2009), and customers that connected from 2009 to 2023. The ERA notes that the demand per connection profile of legacy customers and customers connected between 2009 to 2023 is different. Therefore, the ERA considers that the consumption per connection for legacy customers and customers connected between 2009 to 2023 should be forecast separately, using the appropriate consumption per connection profile for each group.

B3 tariff classes: ERA's forecast

60. The ERA has incorporated 2023 actual connections and consumption into the analysis for its demand forecast.

61. The ERA engaged Patterson Research Group to consult with Western Australian home builders and developers, to identify trends in the rate of electrification and installation of various energy-mix appliances during the AA6 period. Patterson interviewed key personnel from two of the large new home building companies, whose combined market share represents more than half of new homes built in Perth's greenfield releases. Patterson also interviewed the developer of the Wildflower "all electric" release within the Piara Waters development.

62. Patterson found that with current supply constraints in the residential housing market, builders had less incentive to offer solar photovoltaic installations and deviate from the standard home design that uses gas for cooking and hot water in many new developments. Patterson also highlighted that electric-only developments are likely to remain a niche or fringe market segment without government intervention. This supports the ERA's continuation of using the historical connection penetration trend.

63. The ERA engaged Oxford Economics (after the publication of the draft decision) to obtain historical dwelling completion data to calculate the historical gas connection penetration rate. Oxford Economics uses ABS data to analyse both historical dwelling completions and completions forecast.

64. The ERA used dwelling completions within ATCO's distribution network based on the information provided by Oxford Economics to analyse the connection penetration

[32] Legacy customers are customers on the network at the start of 2009.

[33] New customers are customers added to the network since 2009.

trend. The ERA also considers that using the actual dwelling completions within ATCO's distribution network area provides more reliable analysis compared to the estimated total Western Australian dwelling completions in CORE's analysis.

New connections

65. Using data obtained from Oxford Economics, the ERA observed that the average connection penetration within the ATCO network area decreased from the high 90 per cent range prior to 2015, to 85 per cent on average between 2015 and 2018, then increased to an average of 93 per cent between 2019 and 2023. The ERA also observed a declining trend in the penetration strength between 2015 and 2023.[34] The ERA applied this declining trend to its connection penetration forecast for AA6. The declining connection penetration forecast reflects the concerns raised by one stakeholder.[35]

66. As mentioned in paragraph 54, the ERA considers it is reasonable to assume that the historical connection penetration trend already reflects the effect of electrification on the connection decline. The ERA's connection penetration forecast starts at 88.4 per cent in 2025, then gradually declines to 86.4 per cent in 2029, at an annual decline rate of 0.58 per cent.

67. The ERA maintains its position as in the draft decision that natural gas is still widely perceived as a cost-effective energy source, with maximum residential gas pricing set by the Western Australian Government. Additionally, there are no restrictions on natural gas connections in new or existing residential areas.

68. The ERA's total new connections forecast for AA6 is 82,074, which is 17,410 connections higher than ATCO's forecast, driven by higher dwelling completion and connection penetration forecasts compared to ATCO.

Disconnections

69. The ERA considered that under the current policy environment for emissions reduction and electrification, the historical disconnection trend reflects the effect of electrification over the AA6 access arrangement period, and so has maintained its approach from the draft decision; to use the historical disconnection trend for the forecast.

70. The ERA maintains the assumption in its draft decision that new customers would not consider disconnecting until after the 10th year of connection to the network when assessing the historical disconnection trend. The ERA's disconnection rate forecast is based on the historical trend of legacy customers and new customers added prior to AA6 that are more than 10 years into the connection.

71. The ERA's disconnection rate forecast is 0.46 per cent per year, with a total of 16,030 disconnections for AA6, which is 2,410 fewer than ATCO's forecast. There are no disconnections applied to the new connections added during AA6.

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34 The penetration strength measures how fast the penetration rate increases or decreases.

35 WA Expert Consumer Panel, Submission to the ERA's Issues Paper about ATCO AA6 Proposed Access Arrangement November 2023 (online) (accessed November 2024).

Consumption per connection

72. The ERA considered views of gas retailers that the consumption for AA6 should be higher than ATCO's forecast.[36]

73. The ERA has maintained its approach from the draft decision to forecast consumption per connection in AA6. The ERA has separately forecast consumption per connection for the legacy customers, new customers between 2009 and 2023, and new customers in AA6. Based on the customer survey conducted by Patterson for the draft decision, the ERA anticipates an increase in installation of efficient gas appliances, resulting in lower but relatively stable average consumption among new customers across AA6. The ERA includes the expected consumption ramp up period for the new customers and expects that demand for new customers will remain stable from the third year after connecting to the network. Based on the historical trend analysis, the ERA has forecast a 1.35 per cent annual decline in consumption per connection for legacy customers, attributed to the replacement of gas appliances with other types of appliances or more efficient gas appliances. [37]

74. The ERA used NIEIR's econometric analysis to complement the historical trend-based demand forecast. Based on the GSP forecast in the 2024/25 State Budget as described in paragraph 39, the ERA adjusted NIEIR's household disposable income assumption that is one of the variables in the econometric analysis.

75. The ERA's average consumption per connection forecast for AA6 is 12.47GJ per year, compared to a lower average consumption per connection forecast of 11.72GJ per year by ATCO.

Total demand

76. Based on the connection, disconnection and consumption per connection forecasts above, the ERA's total consumption forecast is 51,292TJ, 8.65 per cent higher than ATCO's revised proposal, and the net new connection forecast is 65,001, 47.11 per cent higher than ATCO's revised proposal.

77. The ERA's demand forecast comparisons for B3 tariff are in Table 2.17 to Table 2.19.

Table 2.17: Comparison of average connection forecast for the B3 tariff class

	2024	2025	2026	2027	2028	2029	AA6 net addition
ATCO	781,628	788,369	796,364	805,627	815,553	825,813	44,185
ERA	785,353	797,646	809,503	822,151	835,739	850,354	65,001

Table 2.18: Comparison of gas demand forecast for the B3 tariff class (TJ)

	2024	2025	2026	2027	2028	2029	AA6 total
ATCO	10,069	9,806	9,599	9,420	9,262	9,120	47,207
ERA	10,285	10,239	10,231	10,240	10,271	10,311	51,292

[36] Alinta Energy, (online) (accessed November 2024)

[37] Patterson research group, Survey of ATCO Gas Residential Customers – Undertaken for the Economic Regulation Authority (ERA), (online) (accessed November 2024)

Table 2.19: Comparison of consumption per connection forecast for the B3 tariff class (GJ)

	2024	2025	2026	2027	2028	2029
ATCO	12.88	12.44	12.05	11.69	11.36	11.04
ERA	13.10	12.84	12.64	12.46	12.29	12.13

Ancillary reference services

78. In its revised proposal, ATCO adopted CORE's ancillary reference services demand forecast, which is based on the average connections of the B3 tariff classes. According to CORE, most ancillary reference services (>95 per cent) are related to customers in the B3 tariff class. To forecast ancillary reference services demand, CORE analysed the historical relationship between these services and the average closing connections in the B3 tariff class.[38]

79. The ERA observes that CORE changed the historical service rate analysis from using the average service number over a two-year period to the absolute annual service number. CORE did not provide a reason for this change.

80. The ERA agrees with CORE's approach that the average connections in the B3 tariff class is the appropriate basis for the ancillary reference services demand forecast. The ERA maintains its approach in the draft decision by using average service numbers to analyse the historical service rate. The ERA assessed the historical trend of ancillary reference services (excluding COVID years) and applied historical average service rates to the forecast. The ERA incorporated the actual connections and ancillary reference services demand from 2023 into the historical service rate analysis. The average service rates are illustrated in Table 2.20.

Table 2.20: Ancillary reference services – average service rate

Ancillary reference services	Average service rate (%)
Applying a Meter Lock	1.233
Removing a Meter Lock	1.014
Deregistering a delivery point	0.400
Disconnecting a delivery point	0.428
Reconnection a delivery point	0.339
Permanent disconnection	0.232
Special meter reads	13.431

Demand forecast

81. To make its final decision for AA6, the ERA has considered feedback from stakeholders and the results from the Patterson Research Group customer survey.

[38] CORE Energy, Attachment 05.101, CORE Energy-Gas Demand Forecast Report Draft Decision Response 2025-2029, p. 66, (online) (accessed November 2024).

The ERA assumes no change in the current policy settings and that electrification will continue by following the historical trend observed.

82. The final decision demand forecast of haulage reference services is shown in Table 2.21. The average customer base forecast for all tariff classes of the haulage reference services at the end of AA6 is 866,699, reflecting an increase of 2.9 per cent compared to ATCO's revised proposal. Total demand forecast for all tariff classes of the haulage reference services for AA6 is 148,521TJ, reflecting an increase of 4.7 per cent compared to ATCO's revised proposal.

83. The WA Expert Consumer Panel's submission included a report from TRAC Partners and although the WA ECP did not specifically endorse the advice, it considered that the ERA should consider the matters raised by TRAC. TRAC raised whether a trigger event mechanism or amendments to the tariff variation mechanism should be considered to address increased uncertainty on demand. TRAC considered that the mechanism would only need to be asymmetrical and operate if actual demand was materially higher than forecast demand. The ERA considers that this approach in the access arrangement might remove the incentive for ATCO to invest in its network to grow its customer base which would benefit existing customers in the future, for example allowing costs to be recovered over a larger customer base. As a result, the ERA has not included a trigger event mechanism or amendment to the tariff variation mechanism.

Table 2.21: Haulage reference services demand forecast

Tariff class	2024	2025	2026	2027	2028	2029	AA6 addition
A1							
Average customer base	69	68	68	69	68	68	(1)
Demand (TJ)	12,626	12,320	13,697	14,278	14,358	14,388	69,041
A2							
Average customer base	105	104	104	105	105	104	(1)
Demand (TJ)	1,936	1,971	1,973	1,992	1,999	2,007	9,942
B1							
Average customer base	2,048	2,101	2,152	2,205	2,259	2,311	263
Demand (TJ)	2,223	2,242	2,262	2,283	2,301	2,319	11,407
B2							
Average customer base	12,817	13,001	13,201	13,424	13,647	13,862	1,045
Demand (TJ)	1,337	1,345	1,356	1,369	1,379	1,390	6,839
B3							
Average customer base	785,353	797,646	809,503	822,151	835,739	850,354	65,001
Demand (TJ)	10,285	10,239	10,231	10,240	10,271	10,311	51,292
Total							
Average customer base	**800,392**	**812,920**	**825,028**	**837,954**	**851,818**	**866,699**	**66,307**
Demand (TJ)	**28,407**	**28,117**	**29,519**	**30,162**	**30,308**	**30,415**	**148,521**

84. The final decision demand forecast for ancillary reference services are shown in Table 2.22.

Table 2.22: Ancillary reference services demand forecast

Ancillary services	2024	2025	2026	2027	2028	2029	AA6 addition
Applying a Meter Lock	9,682	9,834	9,980	10,136	10,303	10,484	50,737
Removing a Meter Lock	7,965	8,090	8,210	8,338	8,476	8,624	41,738
Deregistering a delivery point	3,140	3,189	3,236	3,287	3,341	3,399	16,452
Disconnecting a delivery point	3,361	3,413	3,464	3,518	3,576	3,639	17,610
Reconnection a delivery point	2,660	2,702	2,742	2,785	2,831	2,880	13,940
Permanent disconnection	1,822	1,851	1,878	1,908	1,939	1,973	9,549
Special meter reads	105,480	107,132	108,724	110,423	112,248	114,211	552,738

Required Amendment

2.1 The demand must be amended to ERA's final decision in Table 2.21 and Table 2.22.

Appendix 1 List of Tables