CORE ENERGY & RESOURCES

Revised Demand and Connections forecast

JGN network – 2026-2030

7 January 2025

CONTENTS

1. SUMMARY

1.1 Introduction

This report has been prepared by Core Energy and Resources Pty. Ltd. (CORE) for the purpose of providing Jemena Gas Network (NSW) Ltd (JGN) with an independent Revised Forecast of gas customers and gas demand for the company's natural gas distribution network in New South Wales (NSW), for the five-year Access Arrangement (AA), Review Period from 1 July 2025 to 30 June 2030 (Review Period), to support JGN's submission of a Revised Proposal to the AER.

The Revised Forecast summarised in this report has been developed following the release of the AER's draft decision, which includes Attachment 12- Draft Decision on the Initial Demand and Connection Forecast developed by CORE and included as part of JGN's Initial Proposal.

This report is accompanied by a confidential Revised Demand Forecast model.

1.2 Background

CORE was engaged by JGN in FY 2024 to develop a forecast of gas demand and connections for its Volume Market or Tariff V (residential and commercial) customers and its Demand Market or Tariff D (Industrial) customers. That forecast formed part of JGN's submission of its Initial Proposal to the AER in June 2024.

On 29 November 2024 the AER issued a Draft Decision on the JGN/CORE demand forecast – Attachment 12 to the Draft Decision Report.

CORE has been re-engaged by JGN in FY 2025 to develop a Revised Forecast which is to form part of JGN's submission of its Revised Proposal to the AER. The basis for CORE's Revised Forecast is set out in the accompanying Revised Demand Forecast Model and is summarised in this report.

1.3 CORE Forecast- Initial Proposal

The Initial Demand Forecast developed by CORE to support JGN's Initial Proposal is summarised in the following table.

Table 1.1 CORE JGN Demand Forecast – Initial Proposal (Financial Year ended 30 June)

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[1]
Volume market						
Residential Connections (Av.)	1,523,419	1,531,077	1,532,245	1,523,752	1,498,366	-0.1%
Residential Demand | TJ	27,951	27,757	27,309	26,662	25,666	-1.70%
Residential Demand per connection | GJ	18.35	18.13	17.82	17.50	17.13	-1.56%
Commercial Connections	33,850	33,685	33,525	33,357	33,181	-0.5%
Commercial Demand | TJ	12,560	12,218	11,795	11,296	10,646	-3.63%
Commercial Demand per connection | GJ	371.05	362.71	351.82	338.63	320.85	-3.15%
Demand Market						
Industrial Connections (Av.)	370	368	366	363	360	-2.8%
ACQ Demand | TJ	45,468	46,110	44,328	42,107	41,709	-2.15%
MDQ Demand | TJ	236	238	222	212	211	-1.84%
MDQ 9th highest Demand | TJ	213	216	201	192	192	-1.57%

Source: CORE JGN Demand Model

1.4 AER Draft Decision

The AER's Draft Decision relating to the JGN Initial Demand Forecast (Attachment 12) was supported by analysis undertaken by ACIL Allen which was summarised in a report dated 8 November 2024.

While accepting some components of the forecast, the AER's Draft Decision sets out an alternative proposal on the basis that the AER did not fully accept the CORE Volume Market or Tariff V forecast. The Demand Market or Tariff D Draft Decision was set out as a placeholder pending further consideration by the AER.

[1] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

Table 1.2 AER Draft Decision Demand Forecast [2]

Table 12.1 Draft decision forecast for residential and commercial customers

	2025-26	2026-27	2027-28	2028-29	2029-30	Change over period
Residential connections	1,530,710	1,544,152	1,551,521	1,549,720	1,537,243	**0.43%**
Residential demand (TJ)	28,069	28,220	27,906	27,675	27,153	**-3.26%**
Residential demand per customer (GJ)	18.34	18.28	17.99	17.86	17.66	**-3.67%**
Commercial connections	33,850	33,685	33,525	33,357	33,181	**-1.98%**
Commercial demand (TJ)	12,564	12,414	12,102	11,893	11,608	**-7.61%**
Commercial demand per customer (GJ)	371.17	368.52	360.98	356.53	349.83	**-5.75%**

Source: ACIL Allen, *Review of Jemena Gas Network's demand forecasts*, November 2024; AER analysis

Table 12.2 Draft decision forecast for industrial customers (placeholder only)

	2025-26	2026-27	2027-28	2028-29	2029-30	Change over period
Industrial connections	370	368	366	363	360	**-2.8%**
Annual Contract Quantity (ACQ) (TJ)	45,468	46,110	44,328	42,107	41,709	**-8.3%**
Maximum Daily Quantity (MDQ) (TJ)	238	240	224	214	213	**-10.5%**

Source: JGN, *JGN - Att 8.1 - Overview of JGN's demand forecast - June 2024*, June 2024.
Note: We are using JGN's own forecast as a placeholder.

The AER's Draft Decision report summarised the following reasons for the movement from the CORE forecast:

Residential

Connections: The AER, accepting advice from ACIL Allen, determined CORE's forecast to be reasonable.

Disconnections: The AER did not accept CORE's forecast. The AER, based on advice from ACIL Allen stated "We accept that, while disconnection rates are likely to increase over the next 5 years, JGN has not justified an exponential increase, particularly in the absence of subsidies or other incentives of sufficient size to support switching.[3] CORE also notes that the

[2] Draft Decision report Attachment.12, page 3

[3] Draft Decision report Attachment.12, page 10

AER did not distinguish between Disconnections and Abolishments. CORE has forecast both Disconnections and Abolishments separately due to assessed differences in the forces that impact each type of customer decision.

Demand per connection: The AER accepted ACIL Allen's assessment. "ACIL Allen considers there is some validity in JGN's forecast for the first two years of the access arrangement, particularly that improvements in energy efficiency and greater appliance switching may drive lower demand. However, it does not consider JGN has provided analysis and information to support the accelerating decline in usage in the final 3 years of the access arrangement."[4]

Commercial

Connections: The AER, accepting advice from ACIL Allen, determined CORE's forecast to be reasonable.

Disconnections: The AER stated "We consider ACIL Allen's proposed alternative forecast for disconnections is reasonable in the circumstances and based on sound analysis and reasoning. We have included this in our alternative forecast of demand for JGN's Tariff V customers"[5]

Demand per connection: per Residential above as the AER comments of the Volume Market as a whole.

Industrial

The AER stated "We have included JGN's Tariff D forecast in our draft decision as a placeholder. We expect that JGN will provide the information and analysis used to deviate from its survey results as part of its revised proposal. JGN should also update its forecast to include the latest available information at the time of the revised proposal."[6]

ACIL Allen Approach

The ACIL Allen approach to developing forecasts of disconnections does not distinguish between disconnections and abolishments. CORE considers these customer decisions to be impacted by different forces and should be separated, consistent with disclosure within JGN's Reset RIN submission (with Initial Proposal). Further CORE considers that ACIL Allen did not apply sufficient weight to analysis undertaken by AEMO in its 2024 GSOO, including its forecast of the impact of future electrification on Tariff V customers in NSW.

The ACIL Allen approach to developing its forecast of residential demand per connection utilises regression analysis based on forecast movements in gas and electricity prices. While CORE does accept that there is some relationship between energy prices and consumption, CORE does not consider an approach which focuses on a single variable (price differential), in a highly complex market impacted by multiple economic and social influences, to be sufficiently rigorous. CORE notes that if ACIL Allen's model is updated with latest June 2024 data and beyond, the results will be materially closer to the Revised CORE Forecast.

[4] Draft Decision report, Attachment 12, page 12

[5] Draft Decision report, Attachment 12, page 10

[6] Draft Decision report, Attachment 12, page 15

1.5 CORE Revised Forecast

CORE has developed a Revised Forecast which has considered a wide range of factors, including:

- Update of actual results – including FY2024 and observation of early draft numbers for FY 2025 year to date;
- Update of HIA residential dwelling forecasts for NSW;
- Greater disclosure regarding disconnections and demand per connection for Tariff V segments;
- Further disclosure of AEMO forecasts for NSW gas demand for Residential and Commercial (addressed together by AEMO) and Industrial customer classes. Specifically, AEMO developed forecasts for Tariff V indicating it is addressing specific distribution network customers. In this regard CORE has adjusted the AEMO demand to remove the impact of ACT demand and considered the possible impact of minor NSW gas networks; and
- Known changes in expected Demand customer consumption; and forecast structural change in Demand customer gas consumption and consequential impact on MDQ.

CORE has considered the AER Draft Decision and the ACIL Allen report and has incorporated feedback as appropriate including extended disclosure of the basis of certain CORE forecasts, including Residential disconnections and abolishments, and Residential and Commercial customer demand/connection.

In summary, CORE considers that there is most likely to be a material increase in use of Residential electrical appliances for water heating, room heating and cooking appliances which will translate to an increase in disconnections and/or abolishments (where full electrical substitution occurs) or a decrease in demand per connection (where at least one gas application remains (cooking, water heating or room heating). CORE also considers it likely that demand per connection will continue to decrease – extending the material step change observed in FY 2023-2024.

CORE's Revised Forecasts relating to the Volume Market or Tariff V and the Demand market or Tariff D are summarised below.

Table 1.3 CORE JGN Revised Demand Forecast (Financial Year ended 30 June)

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[7]
Volume Market						
Residential Connections (Av.)	1,517,682	1,523,643	1,524,521	1,519,657	1,509,093	0.03%
Residential Demand | TJ	26,504	26,462	26,233	25,938	25,552,	-1.09%
Residential Demand per connection | GJ	17.46	17.37	17.21	17.07	16.93	-1.12%
Commercial Connections (Av.)	34,268	34,141	33,837	33,288	32,575	-1.01%
Commercial Demand | TJ	12,742	12,505	12,177	11,739	11,201	-2.77%
Commercial Demand per connection | GJ	371.85	366.27	359.86	352.67	343.85	-1.78%
Demand Market						
Industrial Connections (Av.)	379	377	375	373	371	-0.53%
Industrial ACQ Demand |TJ	42,277	42,611	42,087	40,502	41,173	-1.76%
Industrial MDQ Demand | TJ	222	223	221	212	216	-1.95%
Industrial MDQ 9th highest Demand | TJ	190	191	189	182	185	-1.95%

Source: CORE JGN Demand Model

CORE notes that the Revised Residential Forecast above has taken into consideration FY 2024 results which vary materially from the forecast presented by ACIL Allen and relied upon by the AER, as summarised in the following table. This variance has consequences for subsequent year forecasts due to extrapolation or reliance on regression coefficients or other econometric modelling which is now outdated.

Table 1.4 CORE JGN Revised residential Demand Forecast (Financial Year ended 30 June) compared with ACIL Allen and AER alternative forecast

Forecast element	JGN 2024 Actual, Normalised	ACIL Allen 2024 Forecast	Variance
Residential demand per connection (GJ)	17.95	18.78	-4.6%
Residential demand (TJ)	26,778	27,991	-4.5%

Note: Based on 1,490,490 average connections

[7] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

CORE notes that early year to date FY 2025 data as advised by JGN provides evidence of a continuation of this lower trend in demand per connection.

1.6 CORE Revised Forecast compared to AER Draft Decision

The following table presents a comparison of the movement in residential and small business (Tariff V) connections and demand for the Review Period.

Table 1.5 Summary of CORE and AER Draft Decision Forecast movements 2026-2030

Forecast Element	CORE Revised Forecast change over period	AER Draft Decision 2026-2030 Change over period
Volume Market – Tariff V		
Residential Demand	-3.59%	-3.26%
Residential Average Connections	-0.57%	0.43%
Residential Demand/Connection	-3.04%	-3.67%
Small Business/Commercial Demand	-12.1%	-7.61%
Small Business/Commercial Average Connections	-4.94%	-1.98%
Small Business/Commercial Demand/Connection	-7.53%	-5.75%

Source: CORE based on Revised Forecast model and AER Draft Decision report.

The Draft Decision included CORE Demand Market/ Tariff D forecasts as a placeholder only so no meaningful comparison can be provided as part of the above table. However, CORE's Demand Market/ Tariff D forecasts have reduced further due in large part to the termination of activity by a large, surveyed customer who had previously indicated a large annual load would be maintained through to 2030.

The key reasons for variations between CORE and AER Volume Market customer segments are:

- Residential average connections – New HIA data accessed by CORE with lower forecast commencements, and a new rate of increase to disconnections and abolishments, which reflects a deferment/lower near-term rate of growth of disconnections, resulting in a significantly reduced variance between CORE's revised and the AER's net disconnection forecasts – see 3.2.3.1.
- Residential demand/connection – a lower actual 2024 result which impacts the forecast materially;
- Small Business/Commercial average connections – variance in forecast disconnections/abolishments in part due to electrification; and
- Small Business/Commercial demand/connection – CORE forecast impact of future electrification.

Demand Market-Tariff D customer forecasts are addressed in Section 5.

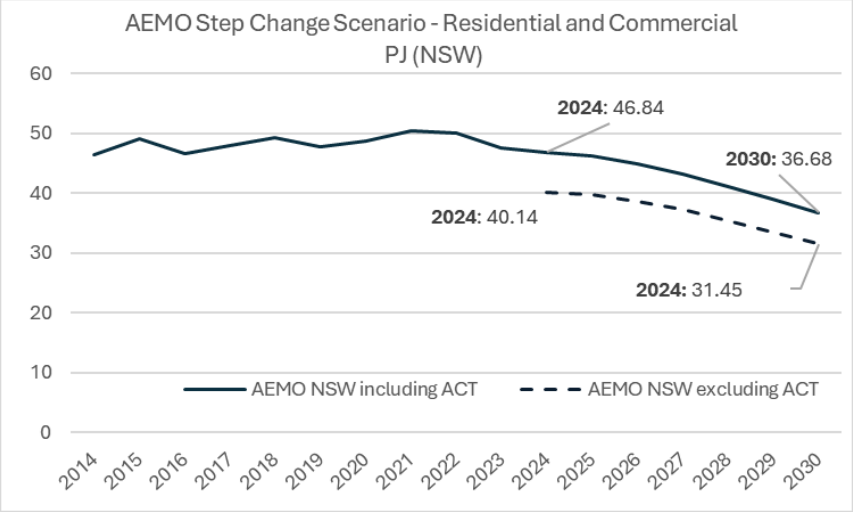
1.7 CORE Revised Forecast Validation

CORE notes that the AER stated in its recent Final Decision in relation to Multinet Gas Network (MGN): "Our final decision is to not accept MGN'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).2 Tables 12.1 and 12.2 set out our final decision for MGN's forecast demand".[8]

Given the AER's adoption of an alternative demand forecast for MGN based on AEMO's forecast, CORE has undertaken analysis of the AEMO forecast under the Step Change scenario for NSW, making a conservative adjustment to exclude ACT demand of between 5 to 7PJ per annum, as the AEMO forecast combines NSW and ACT. [9]

CORE's analysis demonstrates that the JGN demand forecast is conservative relative to the AEMO forecast for Residential and Commercial customers as set out below. Residential and Commercial Customers are considered together as AEMO combines these segments in its analysis.

Figure 1.1 AEMO forecast of gas demand for R&C segments – Step Change Scenario - CY

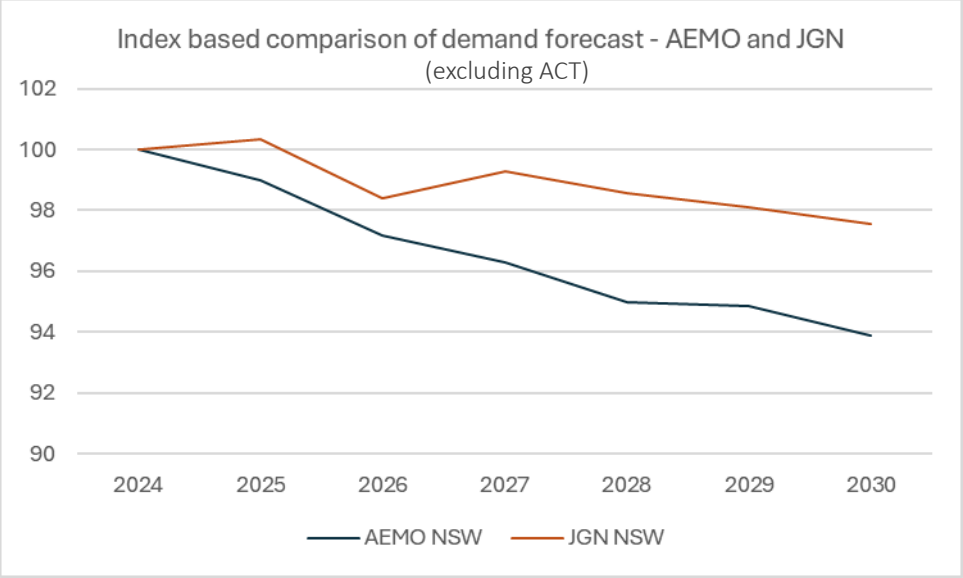


Source: CORE based on AEMO GSOO data – via online gas portal

[8] Multinet Final Decision Attachment 12 page 4.

[9] Evoenergy access arrangement to 2026 and 4% reduction per annum thereafter.

Figure 1.2 AEMO NSW (excluding ACT) forecast of gas demand for R&C segments on an index basis (2024=100) vs JGN/CORE – Step Change Scenario

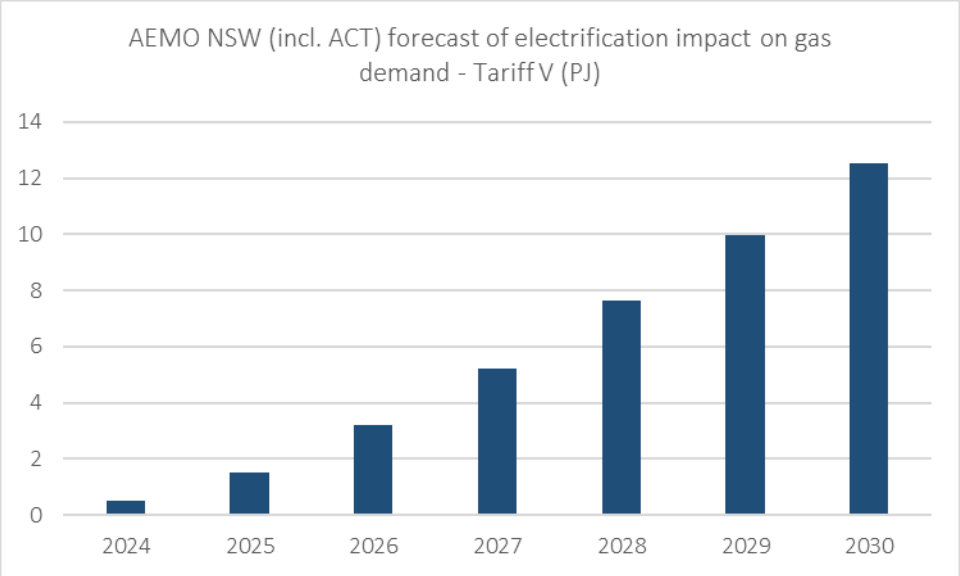


Source: CORE based on AEMO GSOO data – via online gas portal

Based on the above, CORE considers it reasonable to place significant weight on or rely upon the analysis of AEMO, which presents a materially lower demand forecast for Tariff V than JGN. In this regard CORE notes that a significant contributor to AEMO's forecast of NSW Tariff V demand is an assumed step change in electrification or gas substitution in favour of electricity – extending across gas water heating, room heating and cooking appliances.

The following chart summarises the AEMO GSOO forecast of electrification in NSW (including ACT).

Figure 1.3 AEMO forecast of impact of electrification on NSW gas demand for R&C segments – Step Change Scenario



Source: CORE based on AEMO data – via online gas portal

CORE notes that Figure 1.3 addresses both NSW and ACT. If ACT (conservatively) accounts for up to 4 PJ of this reduction by 2030[10], the AEMO forecast indicates that up to 8 PJ[11] of gas demand reduction could be attributable to electrification in JGN's

[10] Evoenergy RIN includes the following results for 2024: Residential 4.0 PJ, Commercial 1.6 J

[11] CORE acknowledges that some impact of electrification included in the AEMO forecast may be also attributable to minor NSW network areas outside the JGN.

network (and other minor NSW networks). This compares with CORE's forecast total reduction in R&C demand of under 3 PJ p.a. by 2030 – under 50% of the AEMO forecast. CORE also notes that the AEMO forecast may include other minor gas networks outside the JGN area. CORE has considered the scale of such demand and considers that the CORE's forecast remains highly conservative relative to AEMO's.

CORE considers that the consequence of a large-scale increase in electrification is a step-change reduction in connections (via disconnections and abolishments where full electrification occurs) and/or a step change in Tariff V demand per connection (where partial electrification occurs) to be an important consideration in developing a demand forecast for the Review Period. These matters are addressed in further detail in latter sections of this report.

1.8 Conclusion

CORE has provided further detail on how it has used key inputs into its Revised Demand Forecast model in this report to address the AER's and ACIL Allen's concerns on lack of transparency in its demand forecast model. CORE has also revised some parts of its forecast to reflect feedback from the AER.

CORE considers that its Revised Forecast meets the requirements of the NGR in full and is strongly supported by the AEMO forecast which the AER has stated in a prior Final Decision in MGN to be "consistent with rule 74 of the National Gas Rules (NGR)".[12]

[12] Multinet Final Decision Attachment 12 page 4.

2. METHODOLOGY USED TO DEVELOP CORE'S REVISED FORECAST

2.1 Introduction

CORE has adopted an overarching methodology which is consistent with the approach it used to develop the Initial Forecast and prior access arrangement demand forecasts which have been accepted by the AER as meeting the requirements of the NGR. As noted within the AER's Draft Decision CORE has made some changes to its approach to address the changing circumstances expected during the 2026-2030 period, such as an expected increase in electrification and structural change in several Demand Market customer segments.

CORE notes that the AER Draft decision states that it requires greater disclosure from CORE in its Revised Forecast to support its forecast in several areas. CORE has therefore presented further details relating to its methodology and the specific analysis undertaken to support the forecast, for the following areas in particular:

Volume Market

- Residential Connections, including FY 2024 update, HIA data update and CORE updated forecast of disconnections and abolishments.
- Residential demand per connection – includes FY 2024 data and updated analysis.
- Commercial demand per connection – includes FY 2024 data and updated analysis.

Demand Market

- Updated forecasts for connections, ACQ, MDQ and MDQ 9th highest based on new information and data.

A summary of the methodology used by CORE to develop its Revised Forecast, in relation to the areas listed above, is described below and further details of derivation of the forecasts are addressed in the following sections of this report.

2.2 Volume Market – Residential

Connections

The following steps have been taken by CORE to derive its Revised Forecast for residential connections:

- the Initial Demand Forecast Model was revised to include actual 2024 results – gross connections, disconnections, reconnections, abolishments and net connections;
- latest HIA residential dwelling commencement forecasts were accessed for NSW and the model was updated as a basis for forecasting new dwelling completions – consistent with the approach accepted by the AER in its Draft Decision;
- new historical trends were derived based upon the extended data as presented within the accompanying Revised Demand Forecast Model; and
- an extension of disconnection and abolishment analysis and forecasts was undertaken as summarised below:
  - analysis of historical trends and expected future trend (electrification);

- access to AEMO electrification forecasts and extended CORE analysis to forecast the impact of the expected electrification trend on future disconnections and abolishments (and demand per connection which is addressed below); and
- allocation of electrification impacted connections between disconnection (usage plugged but reconnection option), abolishment (meter removed and service permanently disconnected) and demand per connection (partial electrification).

Demand per Connection

The following steps have been taken by CORE:

- the Demand Forecast model was revised to include FY2024 results, and adjusted weather normalisation, noting the updated 2024 outcome was materially lower than 2023 and prior year demand/connection outcomes
- new historical trends, following update of weather normalisation, were derived based upon the extended data as presented within the accompanying Revised Demand Forecast model
- the impact of electrification/substitution on one or more gas appliance groups was considered, including analysis of AEMO data.

2.3 Volume Market – Commercial

Connections

The following steps have been taken by CORE to derive its Revised Forecast of commercial connections:

- CORE notes that the AER accepted CORE's Initial Connections forecast however an update has been undertaken for completeness;
- the Demand Forecast Model was revised to include FY2024 results – on an actual and weather normalised basis
- new historical trends were derived based upon the extended data as presented within the accompanying Revised Demand Forecast Model; and
- Revised Forecasts were developed for disconnections and abolishments.

Demand per Connection

The following steps have been taken by CORE:

- the Demand Forecast model was updated to include FY2024 results – on an actual and weather normalised basis;
- new historical trends were derived based upon the extended data as presented within the accompanying Demand Forecast Model; and
- revised forecast of the impact of expected future trends in electrification.

2.4 Demand Market

Connections

- The Demand Forecast model was updated to include FY2024 connections and forecast connections were adjusted to reflect changes in the assessed historical trend.

Demand – ACQ

- The ACQ forecast was revised to include known future changes in customer demand including the cessation of future activity and gas demand by one of JGN's largest customers.
- An adjustment was made to the base forecast to address an expected structural change in future consumption across a range of industrial segments due to efficiency measures, energy saving technology investment and appliance/fuel switching.

Demand MDQ

- Forecast base MDQ was adjusted by applying a factor which reflected an observable historical relationship between MDQ and ACQ per day. Forecast base MDQ 9th highest was adjusted by applying a factor which reflected an observable historical relationship between MDQ and MDQ 9th highest.
- Base MDQ and MDQ 9th highest were adjusted to address the expected future structural changes in ACQ referred to above, which is expected to have flow on impact on MDQ.

3. VOLUME MARKET- TARIFF V – RESIDENTIAL CUSTOMERS

3.1 Summary of Initial Forecast and Revised Forecast

Initial Forecast

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[13]
Demand | GJ	27,950,579	27,757,466	27,308,666	26,661,896	25,665,797	-1.70%
Average Connections	1,523,419	1,531,077	1,532,245	1,523,752	1,498,366	-.014%
Demand per connection | GJ	18.35	18.13	17.82	17.50	17.13	-1.56%

Source: CORE based on Initial Forecast model.

Revised Forecast

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[14]
Demand | GJ	26,504,264	26,462,334	26,232,747	25,937,406	25,552,391	-1.09%
Average Connections	1,517,682	1,523,643	1,524,521	1,519,657	1,509,093	0.03%
Demand per connection | GJ	17.46	17.37	17.21	17.07	16.93	-1.12%

Source: CORE based on Revised Forecast model.

CORE highlights the following:

- The normalised FY 2024 demand per connection has fallen materially relative to CORE's initial forecast, a trend which is supported by early FY 2025 YTD results which include two winter months, (highest gas consumption period). This has resulted in a reset of the base for CORE's 2026-2030 D/C forecast.
- The CORE 2026-2030 demand forecast has been revised downward, principally due to a revised forecast of demand per connection as noted above and addressed below.
- 2024 actual connections were very close to the Initial Forecast.

[13] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

[14] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

3.2 Residential Connections

CORE has revised its residential connections forecast due to the following primary factors:

- New actual 2024 JGN data;
- Updated HIA commencement data which is used as a basis (lagged) for connection forecasts; and
- Revised forecast of disconnections and abolishments having regard to FY2024 and historical trend data, and analysis of the forecast impact of a new electrification trend.

3.2.1 New actual 2024 data

The actual 2024 closing connection balance is included within the accompanying model and is materially consistent with the forecast in the Initial Forecast.

3.2.2 Updated HIA commencement data and forecast of JGN new residential connections

Consistent with the approach adopted for the Initial Forecast, CORE updated used the latest HIA data to develop a revised forecast of new connections as summarised in the following table.

Table 3.1 CORE Revised forecast of new residential connections – HIA data November 2024

	2025	2026	2027	2028	2029	2030
HIA Commencements ('000)						
Detached	20,889	23,159	23,895	23,987	23,169	
Multi	22,017	26,004	34,389	37,936	37,511	
Total	42,906	49,163	58,284	61,923	60,680	
HIA Commencements (Lag to approximate completions before further adjustment) ('000)						
Detached	21,166	23,159	23,895	23,987	23,169	22,136
Multi	18,968	22,017	26,004	34,389	37,936	37,511
Total	40,034	42,906	49,163	58,284	61,923	60,680
JGN Connections						
Estates	13.97	11.30	8.51	7.09	6.16	5.12
Multi	3.90	4.03	3.33	3.30	2.55	1.76
sub total	17.87	15.33	11.85	10.39	8.71	6.89
E2G	2.87	2.87	2.82	2.76	2.70	2.65
Total	**20.75**	**18.21**	**14.66**	**13.15**	**11.42**	**9.54**

Source: CORE based on Revised Forecast model.

CORE notes the AER's conclusion in relation to Residential connections "We consider JGN's forecast of new connections was arrived at on a reasonable basis and represents the best forecast in the circumstances"[15], and accordingly no further data and information is presented in this report.

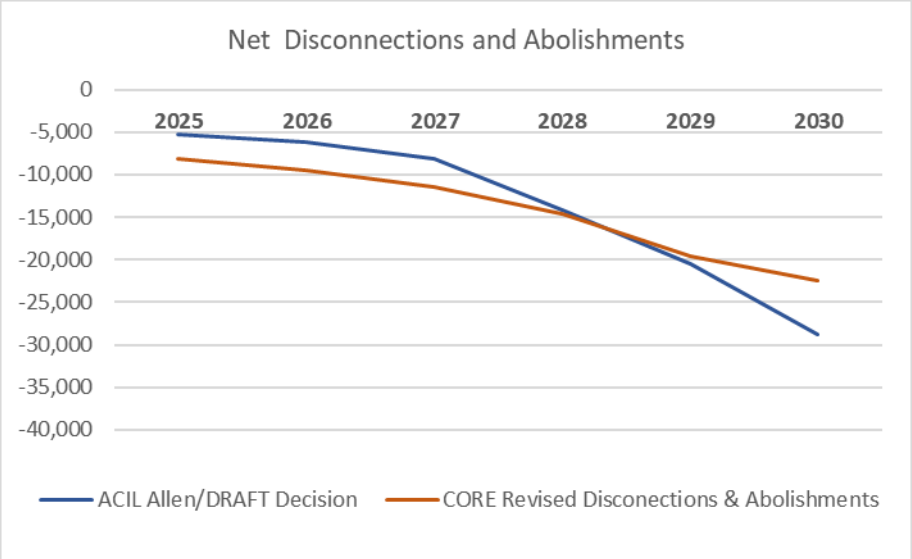
3.2.3 Revised forecast of residential disconnections and abolishments

CORE has undertaken a reassessment of its disconnection and abolishment forecasts having regard to actual results for FY2024 and the historical trend in disconnections and abolishments to that date.

CORE notes that it has considered Disconnections and Abolishments separately as it has assessed there to be different drivers which impact on each type of customer decision. CORE further notes that the AER's DRAFT Decision did not separate these elements. Accordingly, the following figure compares the combined elements, and the following paragraphs address CORE's forecast Disconnection and Abolishment elements separately.

3.2.3.1 Combined Disconnections and Abolishments

Figure 3.1 CORE Revised Forecast of Residential disconnections and abolishment combined and AER Draft Decision forecast



Source: CORE based on Revised Forecast model and AER Draft Decision report.

The above figure highlights a relatively modest difference between the CORE Revised Forecast and the AER Draft Decision – the CORE Revised Forecast being lower to 2028 and higher thereafter.

CORE considers that the AER forecast does not adequately incorporate the historical trend observed to date, including growth rates over time and the expected impact of future electrification trends. If these impacts are added to the Draft Decision Forecast, CORE expects that the outcome will be below the CORE forecast.

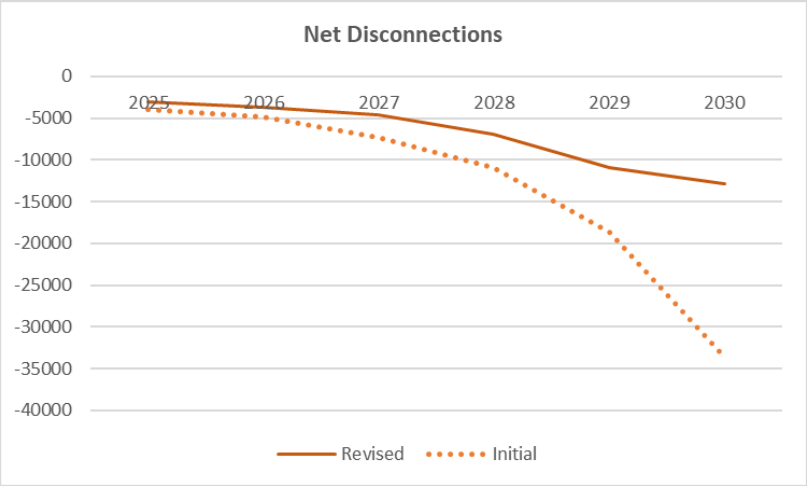
CORE's forecast is supported by the AEMO 2024 GSOO forecast for NSW. These issues are addressed in the following sections of this report.

[15] Draft Decision report p 9.

3.2.3.2 Net Disconnections

CORE has observed, based on new FY 2024 data and early FY 2025 data, that the rate of increase in disconnections reflected in CORE's Initial Forecast is yet to be realised. Accordingly, CORE has applied a new rate of increase to disconnections (and abolishments), which reflects a deferment/lower near-term rate of growth of disconnections as summarised in the following figure, with further detail in the accompanying CORE Revised Demand Forecast model and later in this section.

Figure 3.2 CORE Initial and Revised Forecast of residential disconnections



Source: CORE based on Initial and Revised Forecast models.

CORE notes that the AER's assessment of disconnections was based largely on an analysis of the NPV of gas appliance replacement relative to electrical appliances. CORE concurs that 'economic' consideration will influence customer switching decisions, however, CORE considers that most customers will not undertake NPV analysis of the type presented but will use other approaches to economic assessment which may give rise to material variances from a theoretical NPV approach. Further CORE notes that economic factors are observed, in many energy sector related studies, to weigh most heavily on lower income customers, with mid-to-higher customers having a greater capacity and inclination to meet higher upfront costs based on a range of preferences. CORE also considers that customers' decisions are influenced by a range of other 'social' factors.

CORE considers that a significant number of customers who move to full electric appliance use will favour Disconnection over Abolishment on the basis of 'option value'. For this report, Option Value is defined as the value that an existing JGN customer attributes to the Option attaching to a Disconnection vs Abolishment. The option lies in customer's flexibility to reconnect gas supply if circumstances change in the future or if desired by a new owner of the house. The value lies in that flexibility and the lower cost of disconnecting vs fixed charge of remaining a connected customer. This compares with an abolishment which would require the customer to establish a new connection at additional cost in the future if gas supply is later desired. Option Value has been considered by the AER in a range of prior matters, such as "Application guidelines Regulatory investment test for distribution"[16].

[16] https://www.aer.gov.au/system/files/AER%20-%20Final%20RIT-D%20application%20guidelines%20-%2014%20December%202018_0.pdf

CORE notes that in certain circumstances, relating to safety consideration, customers undertaking developments or renovations are obliged by JGN to abolish their connection.

CORE's Disconnection forecast has been developed based on analysis of three elements:

- Historical base % of opening connections observed to end FY 2024;
- Historical growth rate in Disconnection % of opening connections observed over time; and
- Future growth rate in Disconnection relating to electrification trends, including analysis of the electrification forecast developed by AEMO for the 2024 GSOO.

Recent year JGN Historical data shows the following relationship between combined net disconnections and abolishments and opening connections

Table 3.2 Historical disconnections and abolishments as % of opening connections

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-0.14%	-0.15%	-0.23%	-0.24%	-0.23%	-0.21%	-0.04%	-0.31%	-0.38%	-0.24%	-0.36%

Source: CORE based on Revised Forecast model.

CORE has assumed an opening 2025 base of-0.38% close to actual 2024 and realised in 2022. This base is allocated between Disconnections of-0.20 % and Abolishments of-0.18%, based on analysis of historical results.

Therefore, the net disconnection balance based on a % of opening connections is as follows:

Table 3.3 Forecast of base net disconnections

	2025	2026	2027	2028	2029	2030
Opening Connections (No.)	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
% Opening Connections (No.)	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Base Disconnections (No.)	**3,001**	**3,027**	**3,044**	**3,051**	**3,048**	**3,031**

Source: CORE based on Revised Forecast model.

CORE has then identified the historical growth rate in Disconnections over the 2014-2024 period. Table 3.2 above shows that the combined growth in disconnections and abolishments moved as follows: 0.14-0.15% in 2014-15; 0.21-0.24% during 2016-19 (an increase of over 50%) and up to 0.38% by 2022 (an increase of a further 50%), excluding the COVID impacted years.

CORE has used a 50% increase (0.2% to 0.3%) over the period 2025 to 2030 to reflect this observed historical growth trend as summarised below.

Table 3.4 Forecast impact of historical growth rate on future disconnections - FY

	2025	2026	2027	2028	2029	2030
Opening Connections	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
Base % Opening Connections	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%

Base Disconnections	3,001	3,027	3,044	3,051	3,048	3,031
Base & Growth %	0.20%	0.22%	0.22%	0.25%	0.27%	0.30%
Base & Growth Disconnections	3,001	3,329	3,348	3,813	4,114	4,547
Net Growth disconnections	**0**	**303**	**304**	**763**	**1,067**	**1,516**

Source: CORE based on Revised Forecast model.

CORE has then undertaken scenario analysis to assess the impact on Residential disconnections of a forecast future trend in electrification. This analysis focuses on customers who are expected to move from one or more gas appliances to full electricity. CORE assumes that these customers prefer to disconnect rather than abolish their gas connection to retain "Option Value"[17]. The outcome is shown in the following figure together with the total Residential Disconnection Forecast.

Table 3.5 Forecast of future electrification on Residential disconnections

	2025	2026	2027	2028	2029	2030
Opening Connections	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
Base % Opening Connections	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Base Disconnections	3,001	3,027	3,044	3,051	3,048	3,031
Base & Growth %	0.20%	0.22%	0.22%	0.25%	0.27%	0.30%
Base & Growth Disconnections	3,001	3,329	3,348	3,813	4,114	4,547
Net Growth connections	0	303	304	763	1,067	1,516
Net impact of electrification %	0	-0.02%	-0.08%	-0.20%	-0.45%	-0.55%
Net Impact of electrification	**0**	**-303**	**-1,218**	**-3,051**	**-6,857**	**-8,335**
Total forecast disconnections	**-3,001**	**-3,632**	**-4,566**	**-6,864**	**-10,971**	**-12,882**

Source: CORE based on Revised Forecast model.

The table above shows that CORE's 2025-26 forecast is largely supported by historical trend data; the 2027 and 2028 forecast years include a moderate impact of an expected future electrification trend, while 2029 and 2030 forecast years are more materially impacted by forecast electrification.

CORE's forecast of electrification is based on scenario analysis which seeks to identify the most likely number of existing 2024 connections that will reach an electrification decision and decide to Disconnect. This has assumed an average appliance life of 15 years, which gives rise to approximately 100,000 connections facing a replacement decision per year. CORE's analysis included consideration of the scenario analysis undertaken by AEMO for the 2024 GSOO for the NSW Residential and Commercial sectors combined. CORE considers that the above analysis, together with the AER's prior MGN Final Decision in relation to use of AEMO data, demonstrates that CORE has approached its forecast of Residential disconnections in a manner consistent with the requirements of the NGR and is the best estimate under the circumstances.

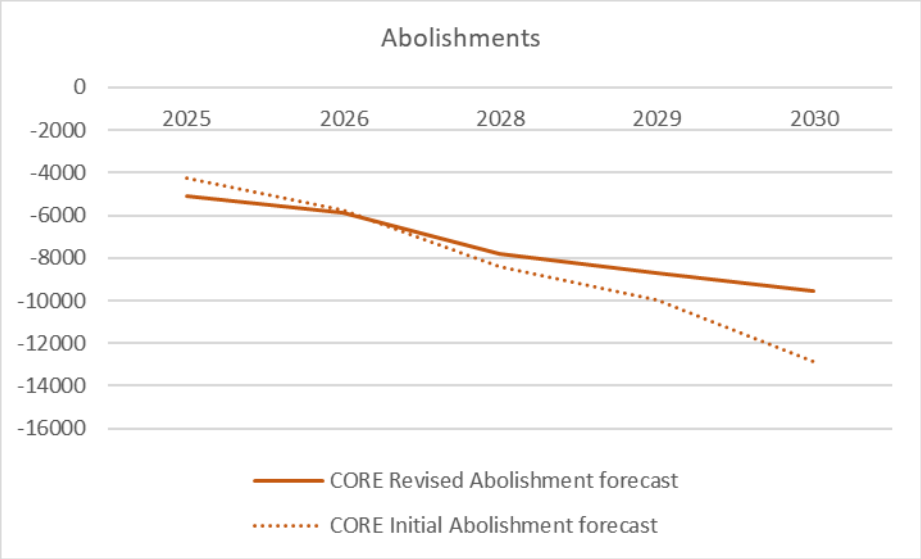
[17] For this report, Option Value is defined as the value that an existing JGN customer attributes to the Option attaching to a Disconnection vs Abolishment. The option lies in customer's flexibility to reconnect gas supply if circumstances change in the future or if desired by a new owner of the house. The value lies in that flexibility and the lower cost of disconnecting vs fixed charge of remaining a connected customer. This compares with an abolishment which would require the customer to establish a new connection in the future if can supply is desired at additional cost. Option Value has been considered by the AER in a range of prior matters, such as Application guidelines Regulatory investment test for distribution https://www.aer.gov.au/system/files/AER%20-%20Final%20RIT-D%20application%20guidelines%20-%2014%20December%202018_0.pdf.

3.3.2 Abolishments

Consistent with the approach to developing a Revised Forecast for Disconnections, CORE has developed a revised forecast of abolishments.

The following figure summarises CORE's revised forecast of abolishments having regard to the actual 2024 result. This figure highlights a downward revision and lower rate of increase through to 2030 than forecast in the Initial forecast.

Figure 3.4 CORE Initial and Revised Forecast of residential abolishments



Source: CORE based on Initial and Revised Forecast models.

CORE considers that future abolishments will be largely impacted by the following forces:

- The rate of future renovations, which are expected to result in gas abolishment due to safety[18]. As noted above the CORE model distinguishes between forecast disconnections and forecast abolishments.
- A decision by customers, who are less financially/economically sensitive to cost and wish to abolish to achieve another objective, for example to remove an unused meter and enhance aesthetics and/or facilitate new landscaping.
- When abolishment is required for safety reasons by JGN , when there is development or major renovations on site. These customers do not have the option of a disconnection.

CORE's abolishment forecast includes three elements, consistent with the approach used to forecast disconnections:

- Historical abolishment % of opening Residential connections
- Historical growth in abolishments overtime
- Estimate of Dormant MIRNS that will be abolished
- Impact of future electrification trend

[18] An internal renovation would not necessarily require the gas connection to be abolished but a major renovation involving construction activity would.

As noted above, recent year JGN Historical data shows the following relationship between combined disconnections and abolishments and opening connections

Table 3.6 Historical disconnections and abolishments as % of opening connections

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-0.14%	-0.15%	-0.23%	-0.24%	-0.23%	-0.21%	-0.04%	-0.31%	-0.38%	-0.24%	-0.36%

Source: CORE based on Revised Forecast model.

CORE has assumed an opening 2025 base of-0.38% close to actual 2024 and realised in 2022. This base is allocated between Disconnections of -0.20 % and Abolishments,-0.18% based on analysis of historical data.

Therefore, the abolishment balance based on a % of opening connections is as follows:

Table 3.7 Forecast of base abolishments

	2025	2026	2027	2028	2029	2030
Opening Connections	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
% Opening Connections	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%
Base Abolishments	**2,701**	**2,724**	**2,740**	**2,745**	**2,743**	**2,728**

Source: CORE based on Revised Forecast model.

This base level is extended to include the growth rate in disconnections and abolishments observed historically – 50% (0.2% to 0.30%).

Table 3.8 Forecast of growth in abolishments based on historical trend

	2025	2026	2027	2028	2029	2030
Opening Connections	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
Base % Opening Connections	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%
Base Abolishments	2,701	2,724	2,740	2,745	2,743	2,728
Base & Growth %	0.18%	0.22%	0.22%	0.25%	0.27%	0.30%
Base & Growth Abolishments	3,001	3,329	3,348	3,813	4,114	4,547
Net Growth abolishments	**300**	**605**	**609**	**1,068**	**1,371**	**1,819**

Source: CORE based on Revised Forecast model.

CORE considers that the level of JGN Dormant MIRNs is likely to result in a small proportion being abandoned in the future. Accordingly, CORE has made further adjustment to reflect this likely occurrence.

Finally, CORE has estimated the number of existing customers that will abandon their connection in the future due to a new electrification trend, consistent with the approach described above for Disconnections.

The following table summarises all elements of the CORE forecast for Abolishments.

Table 3.9 Total forecast of future abolishments including forecast electrification impact

	2025	2026	2027	2028	2029	2030
Opening Connections	1,500,703	1,513,345	1,522,019	1,525,266	1,523,777	1,515,538
Base % Opening Connections	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%
Base Abolishments[19]	2,701	2,724	2,740	2,745	2,743	2,728
Base & Growth %	0.20%	0.22%	0.22%	0.25%	0.27%	0.30%
Base & Growth Abolishments	3,001	3,329	3,348	3,813	4,114	4,547
Net Growth abolishments	300	605	609	1,068	1,371	1,819
Dormant MIRNs abolished[20]	1,201	1,059	1,218	915	762	455
Net impact of electrification %	0.06%	0.10%	0.15%	0.20%	0.25%	0.30%
Net Impact of electrification	**900**	**1,513**	**2,283**	**3,051**	**3,809**	**4,547**
Total forecast abolishments	**5,102**	**5,902**	**6,849**	**7,779**	**8,686**	**9,548**

Source: CORE based on Revised Forecast model.

3.3 Residential Demand per Connection

The following table (extract from CORE's Revised Forecast model), sets out the basis for CORE's forecast of Residential Demand per Connection (D/C).

Table 3.10. Total forecast for future D/C, showing Existing and New customer elements and weighted outcome (GJ)

	2025	2026	2027	2028	2029	2030
Forecast Existing						
Opening	17.95	17.80	17.64	17.48	17.30	17.13
Decline - Historical trend	-0.15	-0.15	-0.14	-0.14	-0.14	-0.14
Electrification		-0.015	-0.02	-0.03	-0.03	-0.03
Closing	17.80	17.64	17.48	17.30	17.13	16.96
Forecast New						
Opening (2025 based on assessment of recent year newest connection mature usage)	14.17	14.14	14.11	14.09	14.06	14.03
First Year % of mature D/C	4.25	4.24	4.23	4.23	4.22	4.21
Second Year % of mature D/C		6.40	4.64	2.63	2.01	1.55
Third Year % of mature D/C			5.46	8.22	9.64	10.68
subtotal	4.25	10.65	14.34	15.07	15.87	16.44
Forecast weighted D/C 25-30)	**17.91**	**17.46**	**17.37**	**17.21**	**17.07**	**16.93**
% annual movement	-0.22%	-2.50%	-0.55%	-0.92%	-0.81%	-0.79%

Source: CORE based on Revised Forecast model.

The electrification impact is converted to volume by applying the impact of GJ/customer against the closing customers for each year as summarised in the following table.

[19] Total base abolishments (due to construction), electrification other abolishments

[20] Included as part of electrification in model

Table 3.11. Total volume impact of electrification (GJ)

	2026	2027	2028	2029	2030
Volume impact of electrification-annual	22,765	30,473	45,736	45,590	45,273

The steps taken by CORE to develop the forecast were as follows:

- Determined a weighting of Existing connections and New customer connections over time and applied the forecast New and Existing customer average annual consumption against these weightings. This approach is consistent with the approach used in prior access arrangement approved by the AER.

    - Existing customer D/C was forecast as follows:
        - Used normalised FY2024 D/C as an opening balance
        - Reduced annual future D/C by applying a decline in consumption factor based on a historical trend as addressed with the Revised Forecast model.
        - Reduced D/C between 2026 and 2030 to address an increasing trend in electrification, having regard to the forecast developed by AEMO for the 2024 GSOO as addressed above. CORE notes that the electrification adjustment assumed as part of the Residential D/C forecast is a low percentage of the electrification impact forecast by AEMO. For example, in the 20230 year CORE assumes a 0.03 GJ impact which equates to a volume of 45,100 based on forecast closing connections of 1,502,648. This compares with a total impact of 12.5 PJ forecast by AEMO.

    - New customer D/C was forecast as follows:
        - CORE analysed the D/C for New customers connecting in recent history to observe the annual trend in consumption in the first year/partial year of connection, the second year and the third year of connection. CORE determined the mature annual New customer usage to be 14.20 GJ and the average usage profile to be 30% in year 1 (partial year use), 85% in year 2 and 100% in year 3
        - Reduced annual future D/C by applying a decline in consumption factor based on a historical trend applicable to New Customer connections (lower than existing customers), as addressed with the Revised Forecast model.

CORE notes that it did not specifically undertake gas/electricity price elasticity analysis to develop its D/C forecasts, rather it has assumed that this forms part of the historical trend. However, CORE notes that the analysis undertaken by ACIL Allen to support its forecast would give rise to a materially different outcome if it were updated for the D/C realised in FY2024 and adequately incorporating the new historical trend.

Further broad-based evidence to support a forecast of a material decline in residential consumption is summarised in the following table. CORE notes that ACIL Allen has made a general assessment that incentives and subsidies are insufficient to impact upon NPV assessments by customers. CORE considers these comments to be broad and without sufficient evidence.

CORE considers it reasonable to assume that Commonwealth and NSW Governments have undertaken sufficient analysis to support the value to be added by these programs.

Table 3.12. Total forecast for future D/C, showing Existing and New customer elements and weighted outcome.

Program/initiative	Description
The NSW Energy Savings Scheme (ESS)[21]	The NSW and Commonwealth Governments will invest almost $2 billion over 10 years to reduce emissions in NSW- making this the most comprehensive, fully-funded plan in Australia. ESS provides financial incentives to install, improve or replace energy savings equipment and appliances in NSW households and businesses.
Energy efficiency upgrades for over 30,000 NSW homes[22]	NSW Government $206 million will be jointly invested by the Australian Government and NSW Government into energy saving upgrades for low-income renters and apartment residents. This includes both governments matching funds of $87.5 million each ($175 million in total) over four years to make homes cooler in summer and warmer in winter. Over 24,000 social housing properties will be eligible for upgrades, including heat pump hot water systems, ceiling fans, reverse-cycle air conditioners, solar systems, insulation and draught proofing. Some social housing properties are among the least energy-efficient homes in Australia, lacking basic insulation and modern applications. Increasing a house from a 1-star energy efficiency rating to a 3-star rating can reduce energy consumption by 30% and decrease household power bills.
NSW Hot Water System Upgrades: Rebates Available for Heat Pump Hot Water[23]	Up to $670 incentive to encourage the replacement of gas water heaters with electric heat pump technology
Rooftop solar installations and 'solar garden' community energy program[24]	The Australian Government is also investing $30 million to fund rooftop solar installations and 'solar garden' community energy plots for low-income households and apartment residents. More than 10,000 households will be able to access the Solar Banks program. Low-income households, apartment residents and renters who cannot install rooftop solar will be eligible for a subsidy to purchase an offsite 'solar garden' portion at a large-scale solar farm.
ACIL Allen report 8 November 2024 – Draft Decision	The report includes a statement that economic analysis does support a move from gas room heating to R-C Airconditioning. CORE considers the loss of room heating load to be a significant element of the decline in Residential demand.

CORE considers that the above analysis demonstrates that CORE has approached its forecast for Residential D/C in a manner consistent with the requirements of the NGR and is the best estimate under the circumstances.

[21] https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/energy-security-safeguard/energy-savings-scheme

[22] https://www.dcceew.gov.au/about/news/energy-efficiency-upgrades-for-over-30000-nsw-homes

[23] https://www.energy.nsw.gov.au/households/rebates-grants-and-schemes/household-energy-saving-upgrades/upgrade-your-hot-water

[24] https://www.dcceew.gov.au/about/news/energy-efficiency-upgrades-for-over-30000-nsw-homes

3.4 CORE vs AEMO Electrification Forecast

The paragraphs above provide a forecast of the electrification component of the Disconnection, Abolishment and Demand per Connection. This section aggregates these elements for ease of comparison against the total AEMO forecast. This analysis shows that CORE's Disconnection, Abolishments and Demand/Connections, include an electrification impact which is a low percentage of the total annual impact forecast by AEMO throughout the Review Period, indicating that CORE's Market Volume forecast is quite conservative.

Table 3.13 CORE annual share of AEMO electrification volume impact included in Residential Disconnections, Abolishment and Demand per Connection (GJ)

	2026	2027	2028	2029	2030
AEMO Electrification	**3,220,000**	**1,988,000**	**2,314,000**	**2,436,000**	**2,558,000**
CORE Disconnection electrification component	5,291	21,154	52,499	117,035	141,131
CORE Abolishment electrification component	26,422	39,651	52,499	65,012	76,991
CORE Demand/Connection electrification component	22,765	30,473	45,736	45,590	45,273
CORE Total electrification	54,479	91,278	150,734	227,637	263,395
CORE total as % AEMO	1.69%	4.59%	6.51%	9.34%	10.30%

CORE notes that AEMO did not separate the electrification forecast between NSW and ACT. However, CORE considers the ACT impact, based on prior Evoenergy access arrangement, to be less than 5% of the AEMO electrification total, and therefore the CORE total remains a low percentage of the AEMO forecast throughout the Review Period.

4. VOLUME MARKET- TARIFF V – SMALL BUSINESS/COMMERCIAL CUSTOMERS

4.1 Summary of CORE Initial and Revised Forecasts

Initial Forecast

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[25]
Demand | GJ	12,560,188	12,217,736	11,794,816	11,295,550	10,646,065	-3.63%
Average Connections	33,850	33,685	33,525	33,357	33,181	-0.5%
Demand per connection | GJ	371.05	362.71	351.82	338.63	320.85	-3.15 %

Source: CORE based on Initial Forecast model.

Revised Forecast

Forecast Element	2026	2027	2028	2029	2030	Average % Change
Demand | GJ	12,742,457	12,505,099	12,176,588	11,739,460	11,200,869	-2.77%
Average Connections	34,268	34,141	33,837	33,288	32,575	-1.01%
Demand per connection | GJ	371.85	366.27	359.86	352.67	343.85	-1.78%

Source: CORE based on Revised Forecast model.

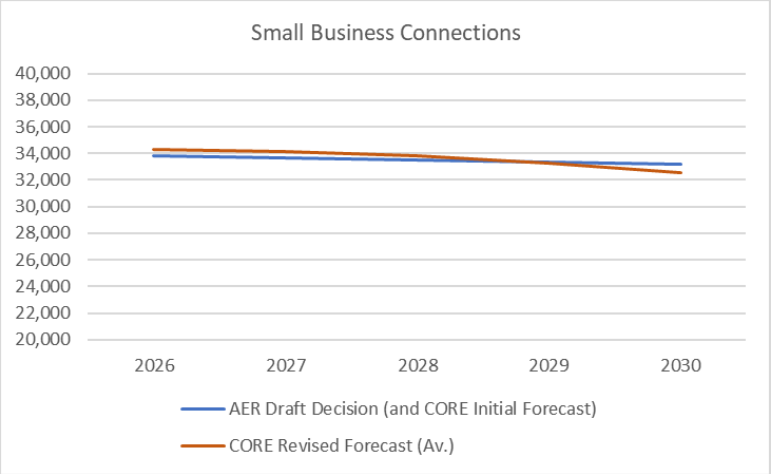
4.2 Connections

The following figure summarises CORE's revised forecast together with CORE's Initial Forecast and the AER's Draft Decision relating to Small Business Connections. This revision arises out of the update of historical data to include FY 2024 data which was higher than the Initial Forecast. CORE has therefore increased its forecast for the period 2028. CORE's Revised Forecast of Net Connections in 2029 and 2030 is marginally lower due to the impact of disconnections and abolishments.

CORE notes that the AER accepted CORE's Initial Forecast, and no further analysis is therefore presented. The following is presented for completeness.

[25] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

Figure 4.1 Small Business Connections forecast



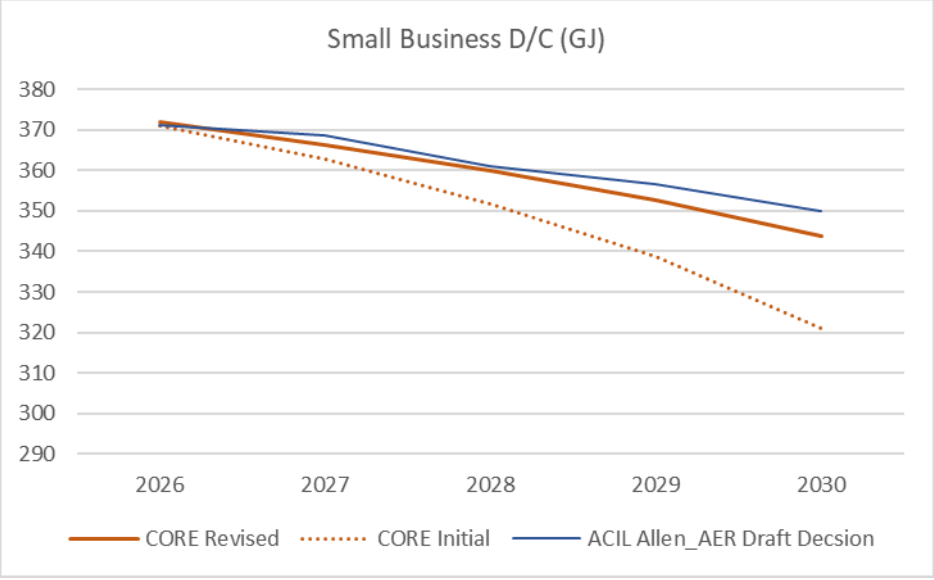
Source: CORE based on Initial and Revised Forecast models.

4.3 Demand per Connection

CORE has completed a review of its forecast of demand per connection for the small business customer segment following the release of the AER's DRAFT Decision. This review resulted in a downward forecast as the FY 2024 and FY 2025 YTD results did not support the trend previously expected by CORE.

CORE's Revised Forecast is presented in the following figure together with the forecast developed by ACIL Allen and CORE's Initial Forecast.

Figure 4.2 CORE Initial and Revised Forecast of residential abolishments



Source: CORE Initial and Revised Demand models and ACIL Allen report

CORE notes that its Revised Forecast is materially consistent with the AER Draft Decision through to 2028, with a modest variance thereafter.

CORE's forecast is based on a combination of factors which have been evaluated via scenario analysis. These factors include: FY 2024 actual results and observation of FY 2025 results to date;

- A trend toward R-C air-conditioning for building/office space heating;
- Broader electrification – full or partial – many utilising solar powered sites, including central facilities serving multiple businesses;
- Price elasticity – noting ACIL Allen's analysis which was accepted by the AER;
- Analysis undertaken by ACIL Allen, adjusted for actual FY 2024 and 2025 YTD data;
- A forecast change in the type of small business connecting-with lower marginal gas use due to efficiency of appliances and building design and lower number of new enterprises with gas-intensive operations; and
- A near-term outlook for flatter economic conditions for a material percentage of small businesses; and
- Pressures on small businesses which is expected to give rise to energy conservation behaviour/response.

CORE has also considered the NSW Small Business Momentum Survey, November 2024 coordinated by the NSW Small Business Commissioner which notes:

- 81% of businesses indicated they were concerned about the cost of business inputs. This is a material decline from recent history as illustrated below;
- 24% of businesses indicated they were confident in their individual business prospects; and
- 38% of business are expecting a decline in revenue.

Figure 4.3 NSW Small Business Confidence

Source: NSW Small Business Commissioner web site https://www.smallbusiness.nsw.gov.au/about-nsw-small-businesses/small-business-survey

The quantification of CORE's forecast for Small Business D/C is summarised in the following table, extracted from the CORE Revised Forecast model.

The forecast is based on the following:

- an opening balance which is based on the normalised FY2024 result
- movement between 2025 and 2027 which is attributable energy efficiency, and minor impact of electrification
- movement between 2027 and 2030 which is attributable higher impact of electrification (but materially below the AEMO forecast) and impact of price elasticity.

CORE notes that AEMO 2024 GSOO forecast of Tariff V electrification included small business. Whilst the forecast was not separated between Residential and Commercial customers, CORE considers it reasonable to assume that AEMO included a material growth forecast for the Small Business customer segment.

Table 4.1 CORE Small Business D/C forecast

	2024	2025	2026	2027	2028	2029	2030
Base /Opening		379.98	376.18	371.85	366.27	359.86	352.67
Movement (GJ)		-3.80	-4.33	-5.58	-6.41	-7.20	-8.82
Movement (%)		-1.00%	-1.15%	-1.50%	-1.75%	-2.00%	-2.50%
Closing	**379.98**	**376.18**	**371.85**	**366.27**	**359.86**	**352.67**	**343.85**

Source: CORE Revised Demand Forecast model

CORE considers, having regard to actual results observed in FY2024 and 2025 YTD, and the impact of these balances in resetting forward projections, together with the likely impact of future electrification trends as evidenced by the AEMO 2024 GSOO, and the closer fit between CORE and ACIL Allen forecasts, that the Revised CORE forecast is the best estimate under the circumstances and meets the requirements of rule 74 of the NGR.

5. DEMAND MARKET- TARIFF D- INDUSTRIAL CUSTOMERS

5.1 Summary of Initial Forecast and Revised Forecast

Forecast Element	2026	2027	2028	2029	2030	Average % Change 2026-2030[26]
Initial Forecast						
Industrial ACQ Demand | TJ	**45,468**	**46,110**	**44,328**	**42,107**	**41,709**	-2.15%
Industrial MDQ Demand | TJ	236	238	222	212	211	-1.84%
Industrial MDQ 9th highest Demand | TJ	213	216	201	192	193	-1.57%
Industrial Connections (Av.)	370	368	366	363	360	-2.8%

Source: CORE based on Initial Forecast model.

Revised Forecast						
Industrial ACQ Demand | TJ	**42,277**	**42,611**	**42,087**	**40,502**	**41,173**	**-1.76%**
Industrial MDQ Demand | TJ	222	223	221	212	216	-1.95%
Industrial MDQ 9th highest Demand | TJ	189	191	189	182	185	-1.95%
Industrial Connections (Av.)	379	377	375	373	371	-0.53%

Source: CORE Revised Demand Forecast model

5.2 ACQ Forecast

CORE has developed a revised forecast of connections and ACQ demand for Tariff D customers, commencing with the inclusion of actual demand for FY 2024. CORE has then adjusted for known changes obtained through direct customer survey and through communication with JGN management who have discussed with customers/retailers. This analysis covered 57% of ACQ volume terms for FY 2025.

The result is summarised in the following table and further detail is set out in the Demand Forecast model.

A significant factor contributing to the reduction in forecast ACQ in the Revised Forecast is the termination of activity by a large, surveyed customer who had previously indicated a large annual load would be maintained through to 2030.

[26] The change is an average annual change based on the % movement between the closing value from the end of FY 2025 to FY 2030

Table 5.1 CORE base Revised Forecast for Tariff D customers (GJ)

RY2024	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
44,150,335	45,537,839	42,846,518	43,537,218	43,189,441	41,782,748	43,157,072

Source: CORE Revised Demand Forecast model

CORE then completed analysis of those customers not subject to surveys and customers who have potential for further change, to assess the expected movements in demand between 2025 and 2030. The results are summarised in the following table.

Table 5.2 CORE base Revised Forecast adjusted for expected future changes.

	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
Cumulative %	0.95%	1.33%	2.13%	2.55%	3.06%	4.60%
Incremental %	0.95%	0.38%	0.8%	0.42%	0.51%	1.54%
Cumulative Change (GJ)	432,609	569,859	926,472	1,102,886	1,280,357	1,983,706

Source: CORE Revised Demand Forecast model

CORE's analysis included bottom-up analysis of expected changes in technology within specific customer segments, and for specific customers where practical, together with expected improvements in energy efficiency and reference to trends observed historically.

The combination of base level data, direct survey data and forecast changes is summarised below.

Table 5.3 CORE base Revised Forecast adjusted for expected movements to Tariff D customers not surveyed

	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
Base & survey (GJ)	45,537,839	42,846,518	43,537,218	43,189,441	41,782,748	43,157,072
Cumulative %	0.95%	1.33%	2.13%	2.55%	3.06%	4.60%
Cumulative Change (GJ)	432,609	569,859	926,472	1,102,886	1,280,357	1,983,706
Revised Forecast (GJ)	**45,105,230**	**42,276,660**	**42,610,746**	**42,086,556**	**40,502,391**	**41,173,366**

Source: CORE Revised Demand Forecast model

The annual and incremental percentage structural change is presented for clarity purposes.

To derive/support the forecast change CORE has undertaken analysis of third-party forecasts of potential changes to energy consumption across Australian and NSW industry in support of the above forecast.

One significant report was summarised in the report accompanying CORE's Initial Forecast, prepared for the Climate Council[27]. The report summaries a range of initiatives across major NSW industry segments which have the potential and are economically and socially motivated to invest in change.

[27] https://www.climatecouncil.org.au/wp-content/uploads/2021/09/NSW-Gas-Demand_V3-.pdf

The quantification of the impact of these further changes on JGN's Tariff D customer base is summarised below.

CORE's analysis commences with an identification of the major industry/sectors within the JGN Tariff D customers at end FY 2024, including:

- Steel
- Food
- Paper/packaging
- Non-metallic minerals – bricks, tiles, cement, glass
- Education, Hospitals, General Government/public service

For each major industry class/segment CORE has determined and applied a Structural Change factor and the weighted aggregate of these factors have been deducted from the total ACQ for each year during the review period. This analysis is summarised below.

The first step involved identification of the major industry sectors within the JGN and forces expected to give rise to a reduction in future gas consumption, as summarised below.

Table 5.4 Industry/sectoral analysis of JGN Tariff D customer segments- Structural Changes – National and NSW trends

Industry/Segment	Structural Change Outlook
Steel	Australia's steel industry has made significant progress in reducing energy consumption, and there are several initiatives underway to further increase energy efficiency: **Technological change** The steel industry has reduced energy consumption by 60% over the past 50 years through technological advancements and continuous improvement. **Continuous casting** Australia's steel industry transitioned from 100% ingot casting to 100% continuous casting, which saved about 25% of the energy required to make slabs. **Energy management systems** The steel industry uses sophisticated energy management systems to efficiently use and recover energy throughout the steelmaking process. **Green steel** • Australia is investing in green steel initiatives, including: • DRI facilities: Developing green intermediate products for export or domestic processing into green steel • Magnetite mines: Expanding magnetite mines with pelletizing and mid-stream processing • Mini mills and electric arc furnaces: Building new mini mills and electric arc furnaces • Hydrogen-based direct reduction iron (DRI) plant: South Australia is seeking interest from companies to develop a DRI plant that could reduce carbon emissions by up to 85%
Food	Energy use accounts for at least 15%[28] of the total operational costs in a food and beverage manufacturing business. Energy efficiency supports profitability, reliability, enhanced yield, and quality, while reducing production inputs. To date material gains have been realised in areas including refrigeration and boiler energy use improvement. CORE considers there to be a clear incentive to continue to improve energy efficiency/use over the Review Period with opportunities to reduce energy efficiency by greater than 10% over the Review Period.

[28] Source linkhttps://www.energy.gov.au/business/industry-sector-guides/manufacturing/food-and-beverage

Paper and Packaging	Paper and packaging have embraced a range of energy cost saving initiatives which are expected to continue to reduce energy use, including gas throughout the Review Period. Having regard to independent analysis CORE considers that savings of over 20% are likely. • Use recycled paper: Recycling paper uses less energy and water than producing new paper. It also reduces the need to harvest and transport wood. • Use renewable energy: Paper manufacturers can use renewable energy to reduce their energy use. • Use combined heat and power systems: These systems can increase energy efficiency by up to 80%. • Design for reuse: Design packaging to be recovered, reused, recycled, and reprocessed. • Grow own food and increased food market use with lower packaging trends: Growing your own food eliminates the need for packaging and the energy used to transport food, as does use of markets where customers take own containers. • Legislated reductions or prohibition of using certain packaging products and initiative by large supermarkets to reduce packaging materials.
Non-metallic minerals – bricks, tiles, cement, glass	Whilst kilns already employ a considerable amount of heat recovery, there are further opportunities for gas reduction through heat recovery. 10 to 15% savings are possible for kiln gas consumption during the Review Period.
Education, Hospitals, General Government/public service	CORE has grouped these segments as they each are subject to significant government policy influence and budgetary pressures. Further many organisations source gas through whole Government supply contracts. Whilst the NSW has not yet introduced policies which prohibit future gas use, there is a clear effort to reduce emissions and move toward electricity supplied by lower emission fuels. The Energy Saving Scheme is a good example of such an instrument. Energy and gas saving opportunities remain in the following areas: • Move to full R-C air conditioning for space heating • Increased use of integrated solar, battery and electric boosted power which can be applied to multiple applications including water heating • NSW Health targets emission reduction, including gas of 11%, within the Review Period.

The next step involved a quantification of the aggregate reductions in ACQ which are expected to be realised during the Review Period. This involved CORE reviewing a range of third party reports and disclosures more broadly to arrive at an annual aggregate Structural Change adjustment. The data/analysis considered included:

Table 5.5 Sources of data and analysis used to support CORE assessment of future Tariff D energy use

Reference	Description
NSW Government Climate Legislation[29]	NSW has legislated to reduce emissions by 50% by 20230 and 70% by 2035 which will require a material contribution from Industrial Customers and CORE considers that industrial customers will be under increasing pressure throughout the Review period to meet Government and broader community expectations.
NSW Government Energy Saving Scheme[30]	Wide range of correspondence which supports the likely achievement of material energy savings, which include industrial electricity and gas. Targets 13% energy use reduction by 2030.
AEMO, 2024 GSOO[31]	Tariff D electrification related reductions of 1.2 PJ
Reducing Australian international competitiveness	There are many studies addressing reduced Australian industry productivity and competitiveness including by the Productivity Commission. The recent decision to close operations by one of JGN's major customers is a stark reminder of this trend. This decision follows many other closure of downsizing/rationalisation decisions made by NSW industry ad JGN customers specifically. CORE notes that the growth in energy use by few large JGN customers masks the underlying reduction of a broader range of customers.

[29] https://www.energy.nsw.gov.au/nsw-plans-and-progress/government-strategies-and-frameworks/climate-change-net-zero-future-act-2023#:~:text=About%20the%20Act,-The%20Act%20commits&text=emissions%20reduction%20targets%20for%20NSW,Net%20zero%20by%202050.

[30] https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/energy-security-safeguard/energy-savings-scheme

[31] https://wa.aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-forecasting-data-portal

Climate Council, Path to zero: how NSW can kick the gas habit[32]	10-15% reductions within 5 years as part of total savings of 25%
Getting off gas- Why,,how,,and who should pay? Grattan Institute[33]	Range of examples of material reductions in gas use that can be achieved across industry sectors and practical programs that can give rise to reduction by 2030.
Towards net zero: Practical policies for reducing industrial emissions and The next industrial revolution: Transforming Australia to flourish in a net-zero world; Grattan Institute[34]	

Based on the above analysis CORE determine a range of feasible reductions that could be achieved and selected a point within the range for each year which CORE assessed to be most likely, and sufficiently conservative. The outcome is summarised in the following table.

Table 5.6 Summary of CORE assessment of impact of additional future change on Tariff D customers during the Review period (GJ).

	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
Base & survey	45,537,839	42,846,518	43,537,218	43,189,441	41,782,748	43,157,072
Cumulative %	0.95%	1.33%	2.13%	2.55%	3.06%	4.60%
Incremental %	0.95%	0.38%	0.8%	0.42%	0.51%	1.54%
Cumulative Structural Change	432,609	569,859	926,472	1,102,886	1,280,357	1,983,706

Source: CORE Revised Demand Forecast model

CORE notes that the additional future change includes forecast reduction in ACQ across non surveyed customers. The forecast for this group includes flat demand from 2024 onward vs an average decline through to COVID of -1.97% as presented in the Revised Forecast model. This historical trend accounts for a significant portion of the forecast change as summarised below.

Table 5.7 Summary of Additional future adjustment represented by non-survey customers based on historical trend reduction in ACQ.

	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
Base (GJ)	45,537,839	42,846,518	43,537,218	43,189,441	41,782,748	43,157,072
Non survey %	43%	43%	43%	43%	43%	43%
Non survey ACQ (GJ)	19,581,271	18,424,003	18,721,004	18,571,460	17,966,582	18,557,541
Average Hist reduction	-1.97%	-1.97%	-1.97%	-1.97%	-1.97%	-1.97%
Reduction based on historical trend, cum. (GJ)	-385,751	-362,953	-368,804	-365,858	-353,942	-365,584
2030						**2,202,891**

Source: CORE Revised Demand Forecast model

[32] https://www.climatecouncil.org.au/wp-content/uploads/2021/09/NSW-Gas-Demand_V3-.pdf

[33] https://grattan.edu.au/report/getting-off-gas/

[34] https://grattan.edu.au/towards-net-zero/

This analysis shows that the Structural Change referred to in the model is broadly equivalent to the historical rate of reduction observed across the JGN Tariff D customers.

By way of validation/support CORE notes that AEMO's 2024 GSOO's NSW Tariff D forecast included an assumed cumulative reduction of 1,120,000 GJ by 2030 due to electrification. CORE notes that AEMO's overall Industrial forecast includes an increase in 2024-2026 and reduction thereafter. However, CORE further notes that AEMO's forecast is unlikely to include the closure of a major JGN customer or the survey results received by JGN.

Based on the above, CORE considers that the ACQ forecast included within CORE's Revised Demand Forecast meets the requirements of the NGR and is the best estimate under the circumstances relating to the JGN during the Review Period.

5.3 MDQ Forecast

CORE's Revised MDQ Forecast has been derived by analysing the historical relationship between Average Daily Quantity (ADQ (ACQ/365)) and actual MDQ for each customer as set out in the accompanying Demand Forecast Model. The result is summarised in the following table.

Table 5.8 CORE base Revised MDQ Forecast for Tariff D customers (GJ)

RY2024	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
260,746	238,664	224,558	228,178	226,356	218,983	226,186

Source: CORE demand forecast model Source: CORE Revised Demand Forecast model

The above balances have been adjusted for structural changes outlined above for ACQ to derive the final Revised MDQ Forecast as summarised below.

Table 5.9 CORE Revised MDQ Forecast for Tariff D customers (GJ)

	RY2026	RY2027	RY2028	RY2029	RY2030
	224,558	228,178	226,356	218,983	226,186
Total change	3,010	4,894	5,826	6,764	10,480
Revised Forecast	**221,548**	**223,284**	**220,529**	**212,219**	**215,706**

Source: CORE Revised Demand Forecast model

5.4 9th highest MDQ Forecast

CORE's Revised 9th highest MDQ Forecast has been derived by analysing the historical relationship between 9th highest MDQ and actual MDQ for each customer as set out in the accompanying Demand Forecast Model. The result is summarised in the following table.

Table 510 CORE base Revised 9th highest MDQ Forecast for Tariff D customers (GJ)

RY2024	RY2025	RY2026	RY2027	RY2028	RY2029	RY2030
225,730	204,423	192,341	195,442	193,881	187,566	193,736

Source: CORE Revised Demand Forecast model

The above balances have been adjusted for structural changes outlined above for ACQ to derive the final Revised 9th highest MDQ Forecast as summarised below.

Table 5.11 CORE Revised 9th highest MDQ Forecast for Tariff D customers (GJ)

Forecast period	RY2026	RY2027	RY2028	RY2029	RY2030
Base	192,341	195,442	193,881	187,566	193,736
Total change	2,579	4,193	4,991	5,794	8,977
Revised Forecast	**189,763**	**191,250**	**188,890**	**181,772**	**184,759**

Source: CORE Revised Demand Forecast model

6. CONCLUSION

CORE considers that it has taken all reasonable steps to present a forecast to JGN and AER which is transparent, rigorous and complete and compliant with the NGR.

CORE's approach incorporates:

Volume Market

- CORE has used methodologies and approaches which are materially consistent with approaches accepted by the AER in prior Final Decisions relating to the JGN and other distribution networks.
- An update for the Revised Forecast to include the latest available JGN data, including a brief review of early FY 2025 data.
- An approach to weather normalisation for Volume customers which has been accepted by the AER in multiple Access Arrangements, including for JGN.
- Independent expert input – HIA for residential forecasts, small business survey – NSW Government.
- A rigorous review and comparison of AEMO GSOO data as part of a validation process, noting the AER's statements in the MGN Final Decision which are referred to in earlier sections of this report.
- An appropriate balance of top-down and bottom-up analytical approaches which utilise historical trend analysis and an analysis of expected future trends which are not observed in historical trends.
- Qualitative and quantitative analysis has been applied using widely accepted scenario analysis which considers the wide range of variables which influence appliance switching, disconnection, abolishment and other customer decisions.

Demand Market

- CORE has used methodologies and approaches which are materially consistent with approaches accepted by the AER in prior Final Decisions relating to the JGN and other distribution networks.
- An update to include the latest available JGN data, including a brief review of early FY 2025 data.
- Independent expert input – Climate Council, AEMO.
- Direct customer surveys and communications which support 57% of customer ACQ volumes.
- Analysis of customers not survey including consideration of independent third-party analysis.
- Approaches to forecast MDQ and 9th highest MDQ which have been accepted by the AER in prior Access Arrangements.

The approach adopted by CORE for the Revised Forecast, including enhanced disclosure is consistent with approaches approved by the AER in prior Access Arrangement Draft and Final Decisions and validated by independent forecast by AEMO in its 2024 GSOO.

CORE therefore concludes that its approach to developing the Revised Forecast of both Volume and Demand market customer segments (connections and demand) meets the requirements of the NGR and are the best estimates under the circumstances relating to the JGN network for the FY 2026-2030 Review Period.