evoenergy

Appendix 2.4: Baringa review of Evoenergy's gas demand forecast

Revised 2026–31 access arrangement information

ACT and Queanbeyan-Palerang gas network access arrangement 2026–31

Submission to the Australian Energy Regulator

January 2026

Review of Evoenergy gas demand forecasts

Final Report

Evoenergy
January 2026

Table of contents

1.	**Executive summary**	**3**
2.	**Background and context**	**5**
3.	**Evaluation of the CIE's and Frontier's forecast qualities**	**12**
	Qualitative assessment	***14***
	Quantitative assessment	***27***
4.	**Conclusions**	**33**
Appendix: About Baringa		**35**

1. Executive summary

Our review finds 2 outstanding issues with CIE's forecast and 6 with Frontier's. Stated preference surveys have value in periods of significant change from the status quo.

Key output	Forecast	Assessment	Conclusion
Number of customers	CIE	• The original CIE model contained a number of issues, but many have now been amended. • The criticisms that CIE has not addressed do not have a clear direction of bias.	No obvious bias
	Frontier	We identify 2 issues with Frontier's forecasts: • The use of a linear trend is not appropriate because it does not attempt to consider factors that could cause step-changes in numbers of disconnections, either econometrically or through the use of surveys. These factors include changes in policy as well as the decisions that households make when their appliances come to end of life: in a scenario where many appliances are old and policy encourages decarbonisation, step-changes in disconnections (such as those forecast by the CIE for 2027) are plausible. • To the extent that a linear trend is deemed acceptable, the start year of that trend should be more recent. In NSW, a start year on or after FY2020/21 seems appropriate given that FY2020/21 is the first year without a standing charge for temporarily disconnected gas customers. For ACT, FY2022/23 seems more appropriate because starting the trend beforehand means that time-periods prior to the passage of the Greenhouse Gas Reduction Amendment bill are included in the time-trend.	↑ **Likely overstates** number of customers and therefore gas demand

Usage per customer	CIE	• As with the number of customers, we understand CIE has corrected many of the issues identified in its modelling.
		• 2 issues still remain:
		  • One of them, issue 2.11, refers to the assumption that all subsidy-eligible customers will benefit from subsidies. Our view is that this affects only a small number of customers and therefore the overall impact is likely to be relatively small.
		  • The second, issue 2.7, identifies the large discontinuity in forecast disconnections in 2027. The methodology that underpins this does not have any obvious problems and it is important not to simply discard a methodology because the results of it look unusual. However, it is also not unreasonable for a regulator to be cautious about unusual results, and we therefore suggest that a smoother glide-path to CIE's 2028 or 2029 estimates could be selected, although acknowledge that this suggestion is qualitative/subjective.
			↓ **Likely understates** consumption per customer and therefore gas demand

	Frontier	We have identified 4 issues with Frontier's forecasts, which can broadly be summarised as follows: • Frontier forecasts very low reductions in EDD and partial electrification. They also do not appear to consider the fact that consumption from new customers will likely be lower than from existing customers, for example due to more efficient appliances. • The net effect of the above issues, together with the 2 issues on customer numbers, is a forecast where demand falls very slowly. This has not been cross-checked against historic reductions in demand which would have indicated an overstatement of future gas demand.	↑ **Likely overstates** consumption per customer and therefore gas demand

Stated preference (SP) surveys, such as those used by the CIE, have value in being used in environments where there is likely to be significant change in the status quo. Provided that these are high-quality, have sufficient granularity, and address biases, we consider that SP surveys have merit as a forecasting tool in regulatory decision-making.

2. Background and context

A list of abbreviations and technical terms used within this report.

Abbreviations

Term	Definition
ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CIE	The Centre for International Economics
DD	Detached dwelling
EDD	Effective Degree Days
GJ	Gigajoules
GSOO	Gas Statement of Opportunities
HD	Medium density/high rise
IEP	Integrated Energy Plan
NGR	National Gas Rules
NSW	New South Wales
TJ	Terajoules
VB	Volume Boundary
VI	Volume Individual

Technical Glossary

Term	Definition
CIE Report	CIE report titled “Appendix 2.1: Gas demand forecast”, published 19 June 2025
CIE Price Elasticity Report	CIE report titled “Appendix 2.2: Price elasticity of demand for natural gas”, published 23 June 2025
Frontier Report	Frontier Economics’ report titled “Gas demand forecasts for Evoenergy”, published 5 November 2025
Gas electrification	The process of replacing gas appliances and industrial processes with electrical equivalents, e.g. electric stoves, heat pumps.
Historical data use	Approach to incorporating historical data into the forecast
NARCliM	NSW and Australian Regional Climate Modelling
Post modelling adjustments	Manual adjustments to a forecast made outside of the core forecasting model.
R^2	Measures how much of the variation in outcome (dependent variable) is explained by model predictors, indicating model fit.
Switching model	The CIE’s forecasting approach to using data from quantitative surveys with Evoenergy customers to understand impact of gas disconnection.
Weather normalisation	The approach to adjusting demand data to account for weather variability and extreme events to allow for better evaluation of demand trends.

The ACT Government has set a clear trajectory to phase out natural gas by 2045, aligning with the jurisdiction's legislated net zero emissions target.

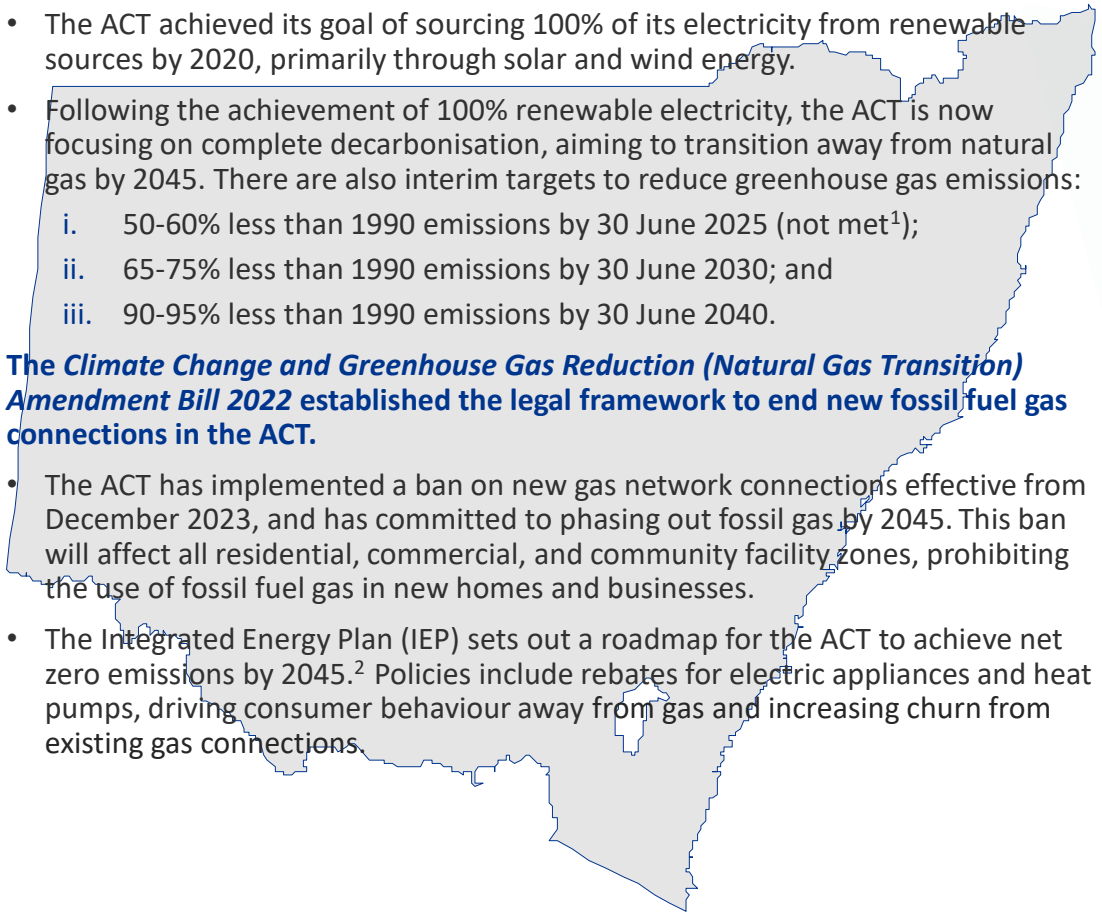
ACT policy context

The ACT Government is committed to renewable energy as part of a broader strategy under the *Climate Change and Greenhouse Gas Reduction Act 2010*

- The ACT achieved its goal of sourcing 100% of its electricity from renewable sources by 2020, primarily through solar and wind energy.
- Following the achievement of 100% renewable electricity, the ACT is now focusing on complete decarbonisation, aiming to transition away from natural gas by 2045. There are also interim targets to reduce greenhouse gas emissions:
  i. 50-60% less than 1990 emissions by 30 June 2025 (not met[1]);
  ii. 65-75% less than 1990 emissions by 30 June 2030; and
  iii. 90-95% less than 1990 emissions by 30 June 2040.

The *Climate Change and Greenhouse Gas Reduction (Natural Gas Transition) Amendment Bill 2022* established the legal framework to end new fossil fuel gas connections in the ACT.

- The ACT has implemented a ban on new gas network connections effective from December 2023, and has committed to phasing out fossil gas by 2045. This ban will affect all residential, commercial, and community facility zones, prohibiting the use of fossil fuel gas in new homes and businesses.
- The Integrated Energy Plan (IEP) sets out a roadmap for the ACT to achieve net zero emissions by 2045.[2] Policies include rebates for electric appliances and heat pumps, driving consumer behaviour away from gas and increasing churn from existing gas connections.



Regulatory context

- Evoenergy is the gas distribution network service provider for the ACT and surrounding areas. Evoenergy is currently undergoing a gas access arrangement review for the 2026-31 period having submitted their Initial Proposal on 30 June 2025 and the AER's Draft Decision published on 28 November 2025.
- In line with the policy context within its jurisdiction, Evoenergy, having engaged The Centre for International Economics (CIE), has forecast declining gas demand and customer numbers on its network based on an approach that combines econometric modelling with customer research via online customer surveys and targeted interviews with large commercial customers. This forecast has also been produced for an extended period beyond the access arrangement to 2045 in order to align with government policy of zero gas.
- *The ACT's transition to full electrification is unprecedented nationally. As the region's gas and electricity network provider, we are at the forefront of this change and play an important role as the region works towards the ACT's target of net zero emissions by 2045.*
  – *Evoenergy, Overview of our five-year gas plan*
- The AER's Draft Decision did not accept the overall demand forecast, outlining that they did not consider the CIE's forecast was arrived at on a reasonable basis or that it represented the best forecast possible in the circumstances, in accordance with the National Gas Rules. To inform its decision, the AER engaged Frontier Economics (Frontier) to develop an alternate demand forecast as a placeholder.
- In Victoria, gas networks are also facing similar challenges, with all new residential developments unable to be connected to gas as per the state's Gas Substitution Roadmap. The experience in this jurisdiction is useful to compare and contrast amidst Evoenergy's access arrangement review.

Source: 1. ACT Greenhouse Gas Inventory: 2024-25, 2025, p.25 – Link; 2. ACT Integrated Energy Plan, 2024, p. 10 – Link.

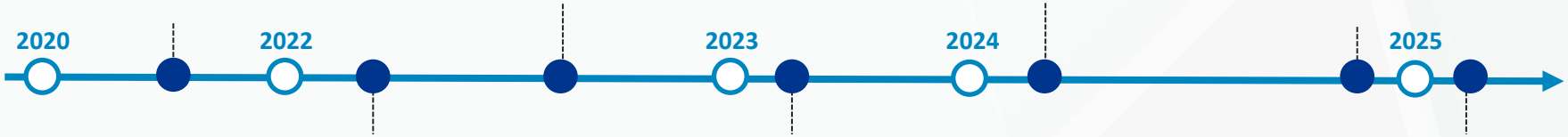
There are several similarities, and differences, with the ACT and Victorian jurisdictions in regard to gas substitution and electrification with impacts on gas demand.

ACT Climate Change Strategy
- Committed to net zero emissions by 2045.
- Explicitly targets phase-out of fossil gas and prioritises electrification of buildings and transport.
- Introduced Gas Transition Roadmap development.

ACT *Climate Change and Greenhouse Gas Reduction (Natural Gas Transition) Amendment Bill 2022* and Gas Transition Roadmap
- Outlined staged approach to remove gas from ACT energy system by 2045.
- Implemented ban on new gas network connections from 2023.
- Introduced support programs for households and businesses to switch to electric heating and cooking

ACT Zero Emissions Transport Plan
- Reinforced electrification across sectors, including heating and transport.

ACT Integrated Energy Plan (IEP)
- The IEP aims to deliver on the legislated net zero emissions target by planning and supporting the electrification of all sectors, phasing out fossil fuels.
- Under the first IEP (2024 – 2030), the Government is focusing on consumer electrification measures.



Victoria Gas Substitution Roadmap
- Explored electrification, hydrogen, and biogas options.
- Announced policy to encourage electrification and improve energy efficiency.
- Committed to review building codes to support all-electric homes.

Victoria Updated Emissions Targets
- Legislated 75–80% emissions reduction by 2035 and net zero by 2045.
- Signalled accelerated electrification as key pathway for gas demand reduction.

Victoria Gas substitution Roadmap updates
- In June 2025, the Government expanded the policy to require all end-of-life gas hot water systems be replaced with electric alternatives.

Key similarities
- Both jurisdictions target net zero by 2045.
- Emphasis on electrification of homes and businesses.
- Rebates and incentives for heat pumps and induction cooking.

Key differences
- ACT is more definitive with policy and a clearer focus on residential load with the ban on new gas connections from 2023 and clear roadmap for full phase-out. Renewable gases are not being considered in the ACT.
- Industrial gas load is much larger in Victoria.

The CIE approach to gas demand forecasting is comprised of three components: 1) number of customers, 2) usage per customer, and 3) the switching model.

Outputs

Total Demand

Product of number of customers and usage per customer

Number of customers × **Usage per customer**

Inputs & Methodology

CIE estimate the number of gas customers in each year based on a number of different calculations, but the most material ones are:

New dwellings with gas connections in NSW
(0 in ACT due to connection ban)

Switching model output: Disconnections

Switching model output: Usage reduction

The baseline forecast is adjusted downwards to reflect usage reduction from:

1. Increased efficiency of certain appliances
2. Partial disconnections driving reduced usage per customer

Baseline forecast

The baseline forecast estimates price-normalised consumption per customer through an econometric model

 |

Frontier's approach to forecasting differs from the CIE as it does not include a switching model, instead using a trend-based approach and post-model adjustments.

Outputs

Total Demand

Product of number of customers and usage per customer

Number of customers × **Usage per customer**

Inputs & Methodology

Frontier estimate the number of gas customers in each year based on adding new connections and estimating disconnections from historical data on disconnections in NSW and ACT

New dwellings with gas connections in NSW
(0 in ACT due to connection ban)

Historical trend-based approach to forecasting disconnections

Baseline forecast

The baseline forecast estimates weather-normalised consumption per customer through an econometric model

Post-model adjustments

The baseline forecast is adjusted to account for factors not captured in historical data:

1. Price elasticity of demand for gas
2. Partial electrification driving reduced usage per customer
3. Increased efficiency of appliances

Baringa has been engaged to provide an independent methodological review of both the CIE and Frontier forecasts

Our approach to critiquing the CIE and Frontier demand forecasting methodologies

1 – Context

- The AER's draft decision rejected Evoenergy's demand forecast, arguing the proposed decline was too significant, based on advice the AER commissioned from Frontier. Frontier provided an alternative demand forecast with slower decline that the AER adopted as a 'placeholder' in the Draft Decision.
- Evoenergy has accepted a number of the AER's critiques of its forecast and is updating its forecast accordingly. Further information on this is available in other Evoenergy and CIE submissions.

2 – Review

- Evoenergy has commissioned Baringa to undertake an independent, high-level methodology review of both CIE and Frontier's forecasts.
- The key, but not only, issue is the impact that electrification has on the forecasts of customer numbers and impacts on demand, noting the CIE's forward-looking customer survey-based approach and Frontier's historical trend-based approach.
- Our review has incorporated assessment of the relevant material in Evoenergy's Initial proposal and the AER's Draft Decision. We have also reviewed material regarding planned updates that the CIE and Evoenergy are intending to incorporate in the Revised Proposal.

3 – Focus

- The fundamental disagreement is on Evoenergy's Volume Individual (VI) demand forecast, which is the focus of our qualitative review.
- This is because the Volume Boundary (VB) customers are very small in number, and the AER has accepted the demand customer forecasts.
- Due to this we focus our review on the VI forecast elements produced by the CIE and Frontier on the following outputs:
    - VI customer numbers,
    - VI customer usage and
    - the total VI demand forecast.

 |

3. Evaluation of the CIE's and Frontier's forecast qualities

We are performing a high-level review of the methodologies, inputs and assumptions for the Evoenergy demand forecasts as prepared by the CIE and Frontier.

1 Analyse key issues of the CIE approach

Summarise the issues that Frontier has identified with the CIE approach and qualitatively assess whether they result in an over- or under-statement of Evoenergy's gas demand

2 Analyse key issues of the Frontier approach

Identify issues with the Frontier approach and qualitatively assess whether they result in an over- or under-statement of Evoenergy's gas demand

3 Quantitative comparison of forecasts

Noting the issues identified with both approaches, perform a high-level quantitative review of both forecasts based on:

- Actual gas consumption in NSW and ACT
- Actual or expected trends in gas consumption in other jurisdictions
- Consistency with ACT policy goals
- Precedence in other regulatory environments

4 Summarise

Conclusions and evaluation of both demand forecasts for the AER's consideration, alongside a proposed approach for dealing with forecast uncertainty

Qualitative assessment

CIE has updated its forecasting model to incorporate weather normalisation impacts, which better reflect the gas usage assumptions.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
1	**Weather Normalisation**		
1.1	CIE assumes a constant relationship between EDD and demand, but sensitivity is decreasing as fewer customers are using gas heating	The CIE has addressed this issue by adding an EDD-time interaction to their regression analysis. This will allow the relationship between consumption and EDD to reduce over time, as pointed out in Figure 1 of the Frontier Report.	- **None.** The CIE has resolved this critique, meaning that no further impact should be observed on the model.
1.2	A linear weather normalisation model (compared to log-linear) is more appropriate and better maps the relationship between EDD and consumption, it would also better align with the approach taken by AEMO	Frontier's evidence for a linear model being preferred to a log-linear model appears to be that Figure 1 in their report visually appears to have a linear relationship between EDD and Consumption per Connection. We agree that this appears to be the case, though would prefer to see econometric evidence presented that demonstrates this. However, Frontier then use the fact that their data supports a linear model to state that the CIE should have used a linear model, despite the fact that the datasets are very different. Specifically, the CIE uses individual-level observations with millions of datapoints while Frontier uses monthly data. Due to the fact that Frontier has not presented any analysis of the CIE's data, and the CIE's dataset is very different to Frontier's, we do not see any reason to conclude that a log-linear form is inappropriate for the CIE's data.	- **None.** Frontier has only presented evidence in favour of a log-linear form based on their data, and not based on the CIE's.
1.3	Weather normalisation model is a poor fit when compared to historical actuals	Frontier appears to correctly identify that the CIE model does not provide a good fit for monthly demand. However, the objective of our engagement is to assess the quality of the annual forecasts, and Frontier has not provided any evidence on the impact that this has on the annual trend in CIE's methodology.	? **Unclear.** This does not appear relevant to annual consumption.
1.4	CIE uses warming forecast for EDDs developed for Victoria and not the ACT	The CIE have updated their EDD forecast based on NARCliM temperature projections for the ACT.	- **None.** The CIE has resolved this critique, meaning that no further impact should be observed on the model.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

We consider that CIE's updates to the sampling weighting addresses the self-selection bias.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.1	Concerns that the residential survey results are unreliable due to self-selection bias	Frontier considers that self-selection bias is likely to exist in the surveys but presents limited evidence that it leads to customers with a strong desire **not** to switch being over-represented, despite acknowledging this possibility.[1] The main evidence provided by Frontier is that there is a disproportionate number of solar PV customers in the survey and that such customers are more likely to switch from gas to electricity and therefore they consider the switching rate is overstated. We agree but note that CIE has now updated its sample weights to take account of solar PV ownership. Furthermore, Frontier ignores the possibility that: • Customers planning to disconnect from gas self-select out of the survey because they didn't see an ongoing relationship with Evoenergy's gas business; • Customers planning to use gas self-selected into the survey in attempt to make the transition away from gas appear more difficult and encourage Evoenergy or the ACT Government to continue providing gas services. We also note that the CIE's Price Elasticity Report shows 10% of the surveyed sample would never switch to gas, even with financial incentives, while 10% plan to do so regardless of financial incentives. While we have no way of knowing whether these symmetrically popular beliefs on the two ends of the spectrum are representative of the population, the fact that they are symmetric could indicate that selection bias (if any exists) may not be material.	**- or ↗ None, potentially an overstatement.** The CIE has adjusted sample weights to take account of the criticism from Frontier. The possibility of the other biases listed would then swing the survey results towards under-stating disconnections and therefore overstating gas demand.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Source: 1. Frontier Report, p.15.

We do not think there is a clear direction for the hypothetical bias. We are satisfied that the representation of the interest-free loan scheme does not impact gas demand.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.2	Concerns that the residential survey results are unreliable due to hypothetical bias	Frontier states that hypothetical bias could result in respondents over-stating their true willingness to switch. However, Frontier provides no causal mechanism for this statement which makes it difficult to assess. The only evidence provided by Frontier is that switching away from gas was overstated in the 2020 survey undertaken for Evoenergy by CIE and Sagacity. Our view is that this evidence shows one of two things: • There was bias in that single survey – not that there is generally a bias for understating gas demand in such surveys; • Other factors (such as the COVID-19 pandemic) after 2020 affected the rate of gas disconnections. Furthermore, Frontier ignores the CIE's techniques to mitigate hypothetical bias via their five-point certainty scale and including only "I definitely would switch" responses.[1] Coupled with the fact that hypothetical bias could also result in respondents understating their willingness to switch, for example if they understand the practical inconveniences of electrifying, the consequences of disconnections and fear of price rises, suggests these concerns have been mitigated.	- **None.** On balance, we do not consider that there is sufficient clear evidence from Frontier on why the assumed direction of bias should be for under-statement of CIE's demand forecast. Simultaneously, there is at least one factor that would work against Frontier's hypothesized direction of bias.
2.3	The sampling weights used by CIE exclude some important characteristics of customers	We have addressed in *Item #2.1* the weighting for solar PV customers. With regard to the other demographics, such as age, mentioned by Frontier, it is unclear why an older population in the survey would over-state switching. Concern over decarbonisation is generally higher among younger individuals which could push the bias the other way.	- **None.** There is no clear reason to expect over-statement of consumption.
2.4	Policy setting included in the switching model does not reflect current ACT Government policy settings inc. interest-free loan and ban on new gas appliances	By reviewing the CIE's work and corresponding with them, we understand the interest-free loan is a parameter in their model and so adding back interest to the ongoing costs of electrification resolves the issue identified by Frontier. To explain this further, our understanding is that respondents were asked to select between electricity and gas when provided with a range of different upfront and ongoing cost pairings. The responses to this were then used to estimate an econometric relationship between disconnection and upfront/ongoing costs (as well as other factors). This means that, so long as the only mechanism via which a loan scheme affects electrification decisions is the upfront and ongoing costs (we do not see a reason to think otherwise), increasing the assumed ongoing costs used to generate the disconnection forecast is sufficient.	- **None.** The CIE has clarified this critique, that adding back the interest to the loan is sufficient to fully resolve any overstatement of switching likelihood implied by the survey.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Source: 1. CIE Price Elasticity Report, p.12.

We do not consider that any of the critiques raised on this slide have a material impact on gas demand.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.5	The use of fixed effects for the baseline model is not required	Frontier has not stated what effect the addition of fixed effects (by which they mean variables that do not vary over time) has on the model forecast. We consider that, in principle, CIE should have tested separate models (or at least separate coefficients) for each customer group, but this critique is "academic" and not attached to a specific view on forecast bias.	? **Unclear.** There is no reason to believe this results in over or under-statement and no analysis has been performed on this.
2.6	Modelling consumption per connection in the baseline model for each tariff block delivers a poor model fit	Frontier has not specified what it means by a poor model fit. Based on correspondence with Evoenergy, we understand that this **may** be a reference to differences in R^2 between Frontier's models and CIE's. However, our understanding is that CIE have ran their model on a very large number of individual level observations while Frontier has run theirs on a sample of 24 observations. In general, it would not be expected that the model ran on the very large number of observations could have a similar R^2 to Frontier's, because it is difficult for the model to explain all the variation/noise that is present in such a large dataset. Furthermore, Frontier has not provided any evidence of bias on this point.	? **Unclear.** There is no reason to believe this results in over or under-statement and no analysis has been performed on this.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

We consider that, without an intuitive explanation for the discontinuity in disconnections, it is reasonable to place some doubt on the CIE's forecast

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.7	The switching model forecasts an abrupt change in the historical trend in disconnections with a substantial increase from 2027 (see Figure 4 of the Frontier Report).	The CIE predicts disconnections both for customers whose appliances break and those who do not. We understand from Evoenergy that the former accounts for the majority of the increase in disconnections. The approach taken by CIE to estimate this is as follows: • first estimating the probability of gas appliance failure based on the application of a probability distribution to the age of the gas appliance stock provided by survey respondents; • then applying a likelihood of electrification to customers with failed appliances. The results of the first bullet will be sensitive to the probability distribution that is chosen. The CIE has chosen a probability distribution corresponding to kitchen equipment failures in the Netherlands, France, and Belgium.[1] The document used by the CIE to select the probability distribution presents an alternative that corresponds to non-EU kitchen equipment, which may or may not be more appropriate depending on which countries are included in "non-EU" (i.e. Australian appliances could be more similar to Netherlands, France, and Belgium appliances if "non-EU" includes a lot of middle income or developing countries). Overall, the CIE's choice of probability distribution does not seem unreasonable. The likelihood of electrification is then estimated through the CIE's model. As can be seen from our views on the various issues that Frontier raised with the CIE's forecast, we consider that this may be over-stated, which would result in an understatement of gas demand. From an intuitive perspective, the existence of a discontinuity in disconnections in and of itself is not implausible given that over 40% of appliances were >=11 years old (see slide 30) and policy has recently changed with the IEP to phase out gas by 2045. The application of a reasonable methodology, albeit one that is more likely to over-state than under-state disconnections, further supports the idea that a discontinuity is plausible. However, we do agree that the absence of a strong intuitive explanation for a material discontinuity means that it may be prudent to place some doubt on the 2027 figure and instead perform a smoothing of the growth to the 2028 figure (a less qualitative and more scientific adjustment would be preferred however).	↘ **Potentially an understatement.** While the discontinuity is plausible, the absence of an intuitive explanation places some doubt on it. An ad-hoc (albeit non-scientific) adjustment could be made, such as an interpolation between the 2026 and 2028 (or 2029) estimates in Figure 4 of the Frontier Report.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Source: 1. Forti, Balde, Kuehr (2018), "E-Waste Statistics", p.62, row corresponding to UNU Key 0103 – Link.

The CIE has updated the retail gas price, sampling weights and assumptions on rooftop PV demand in winter within its new forecasts.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.8	The switching model uses the incorrect retail gas price	The CIE has confirmed that they have corrected this in their new forecast.	- **None.** The CIE has resolved this critique, meaning that no further impact should be observed on the model.
2.9	The switching model estimates sampling weights but does not apply those sampling weights	The CIE has accepted this critique and has adjusted the sample weights.	- **None.** The CIE has resolved this critique, meaning that no further impact should be observed on the model.
2.10	The switching model assumes 50 per cent of additional electricity demand due to electrification will be self-consumption of rooftop PV, despite the fact that this additional electricity demand mainly occurs in winter and during the mornings and evenings	The CIE has accepted this critique and has adjusted its modelling.	- **None.** The CIE has resolved this critique, meaning that no further impact should be observed on the model.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Assuming all eligible customers benefit from subsidies may understate gas demand, but we would expect a relatively small impact from this.

#	Issues with CIE's forecast raised by Frontier	Our assessment of this issue	Understatement or overstatement of gas demand
2	**Residential demand forecasts (Tariff VI)**		
2.11	The switching model assumes all eligible customers will benefit from subsidies, despite the survey indicating that few customers are aware of subsidies	Based on correspondence with Evoenergy, our understanding is that the survey asks questions to a mix of customers who both are and are not actively looking for new appliances. Therefore, it is unsurprising that many of them are not aware of these. However, given that many companies advertising heat pumps (such as those that can be found on vendor aggregators such as the Brighte website[1]), use the subsidies to attract customers, it would be reasonable to assume that almost all customers eventually become aware of these. Despite this, a percentage slightly below 100% (e.g. 90-95%) may have been more appropriate, although we also have no specific evidence on which to calibrate that percentage. We also understand from Evoenergy that CIE only assumes that **eligible** customers (c.33% of their sample) are eligible for the subsidies. This limits the magnitude of any bias.	↘ **Likely to be an understatement.** Assuming 100% of eligible customers benefit from subsidies is unlikely to be true because there can always be some inexplicable circumstance that reduces that percentage below 100. However, we would not expect it to fall materially below 100.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Source: 1. https://brighte.com.au/act-sustainable-household-scheme/households.

Frontier's approach to forecasting customer numbers overstates gas demand for two reasons, one is their reliance on historic data.

#	Issue identified in Frontier report	Reason why we consider this to be an issue	Understatement or overstatement of gas demand
1	**Number of customers (Tariff VI)**		
1.1	Use of historic data to project future disconnection	Using historic data to project future disconnection implicitly assumes that the drivers of growth in disconnections will remain unchanged into the future. While this approach still allows for growth in disconnections, it does not allow for step-changes that could be caused by the fact, since the 2024 IEP, consumers replacing their ageing appliance stock do so in a policy environment that is committed to transitioning customers off the gas system by 2045. Frontier's method works approximately[1] as follows: • Identify the number of disconnections in the latest year of data (t=0). Define this as X. • Observe the historic growth rate of disconnections Y. • Calculate the disconnections in any given year as X+Y*t. As both X and Y are based on historic data, there is no attempt by the methodology to take future changes into account. Frontier's approach also does not model the decision-making process that a customer goes through (nor do they use econometric or similar techniques as proxies for this, which would be one way to overcome/mitigate this when using historic data). This means that Frontier does not explicitly consider the age of gas appliances and the fact that, at the end of life, customers will make decisions about whether or not to electrify, and those decisions will be influenced by a policy, subsidy availability, and a wider environment that is **changing** from year to year. By assuming a constant growth in disconnections, Frontier effectively assumes that these factors increase the likelihood of disconnections at the same rate as they have done historically, which may not be appropriate given the need to meet 2045 targets. Indeed, slide 29 shows our assessment of Frontier's forecasts against the 2045 target and that they have a substantial residual number of gas customers connected to the network. Furthermore, Frontier does not allow for future policy to drive further step-changes in disconnections. For example, the ACT Government will undertake a midpoint review of its IEP in 2027 which may lead to some new policies. While the time taken to implement policy means that we would not expect such policies to be implemented prior to ~2029, they could further affect the growth of disconnections in the last several years of the regulatory period.	↑ **Overstatement**. Frontier's approach does not take into account policy or wider changes that could affect disconnections. The CIE's approach is more consistent with policy goals while, under Frontier's forecast, there is still a considerable level of gas customers and gas consumption in 2045 (see slide 29), despite the programs and policies to meet the net zero target outlined in the IEP.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Note: 1. We do not attempt to replicate the precise approach but rather demonstrate the principles of the approach taken.

The choice of starting year for the linear trend is another reason which also overstates the impact of Frontier's gas demand forecasts.

#	Issue identified in Frontier report	Reason why we consider this to be an issue	Understatement or overstatement of gas demand
1	**Number of customers (Tariff VI)**		
1.2	Start-year of linear trend	Notwithstanding *Item #1.1*, to the extent that a linear trend is determined to be appropriate, the start year of such a trend is material to the outcome of the forecast. Overall, we consider that Frontier's logic for start dates could be improved upon and results in somewhat arbitrary dates being selected. Our views are as follows: 1. For ACT, Frontier start the trend 1 year before the passage of the Greenhouse Gas Reduction Amendment Bill. As this law signalled substantial intent from the ACT Government for phase out of gas, we believe it would be more appropriate to start the trend calculation in 2022/23. This effectively means using a relatively more recent percentage change in gas disconnections to develop the trend. 2. For NSW, Frontier choose the second longest time-frame available to estimate their trend. Their rationale for this is that, in the absence of policy changes providing an obvious start point, there is no reason to prefer any given start year. There are however two reasons why an earlier year would be more appropriate: a) 2020/21 did see a substantial change (albeit not in policy) as the standing charge was removed from temporarily disconnected gas customers, making it more attractive to disconnect. Prior to this, customers who temporarily disconnected were billed the standing charge. b) Figure 9 of Frontier's Report shows that there has been a consistent increase in the growth rate of disconnections since 2018/19, indicating a more recent start year would be more appropriate.	↑ **Overstatement.** We consider that Frontier's logic for start dates could be improved upon and results in somewhat arbitrary dates being selected. As we show in slide 31, the growth rate in ACT gas disconnections increases if 2022/23 is selected as the start year. This is also true of NSW if any year after the 2019/20 year selected by Frontier is chosen as the start-point. FY2020/21 or later may be more appropriate for NSW because it reflects a time-period when the standing charge was removed for temporary disconnections.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Consumption per customer is likely overstated, primarily due to the very small reduction in EDDs that has been forecast.

#	Issue identified in Frontier report	Reason why we consider this to be an issue	Understatement or overstatement of gas demand
2	**Usage per customer (Tariff VI)**		
2.1	Consumption from new customers	New customers are more likely to reside in buildings with better insulation, and which use newer equipment: both of these factors would likely mean that new customers consumer lower amounts of gas than existing customers. This has not been explicitly taken into account by Frontier in their analysis. However, it is possible that it is implicitly taken into account through the efficiency adjustments that they apply, as those efficiency adjustments may be based on a forecast that modelled new connections as having higher efficiency. Frontier have not explicitly stated where they have adopted their efficiency forecast, except for a reference that it was from the 2025 GSOO.[1] The 2025 GSOO, in turn, explains that they calculate energy efficiency based on a report by Strategy.Policy.Research.[2] Our preliminary review suggests that the efficiency forecasts took account of lower consumption from new customers. On this basis, we have tentatively inferred that this is not taken into account.	↗ **Potentially an overstatement.** New customers would likely have lower consumption so would further pull down the consumption per connection estimated by Frontier.
2.2	Forecast of EDDs	Frontier forecasts EDDs by running a regression of Numbers of EDDs against a time trend. However, Frontier starts this regression in 1986. This means that the forecast of EDDs primarily reflects dynamics in EDDs that occurred decades in the past. While we understand that this is Frontier's intention, with the rationale being they sought to incorporate climate rather than weather trends, there is a risk that this approach ignores the accelerating effects of climate change. The effects of climate change will generally warm ACT and NSW and therefore reduce gas demand further.	↑ **Overstatement.** We show in slide 32 that there are a number of more recent years that Frontier could have started its regression from which would result in a faster decline in EDDs that may be more reflective of changing climate conditions.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Source: 1. Frontier Report, p. 53; 2. 2025 GSOO, p. 20 - Link.

Frontier does not sufficiently take partial electrification into account and their results are not aligned with historic data on average consumption per customer.

#	Issue identified in Frontier report	Reason why we consider this to be an issue	Understatement or overstatement of gas demand
2	**Usage per customer (Tariff VI)**		
2.3	The effects of partial electrification on consumption per customer are very low.	The impacts of partial electrification on consumption per customer are low, reducing average consumption per connection by 2.21% by 2030/31 in the ACT, and 0.57% in NSW. This may be because, as is explained in p.52 of the Frontier Report, partial electrification is assumed to only happen in the 2 years prior to disconnection. As Frontier is forecasting a low number of disconnections, they therefore also forecast low levels of partial electrification. Specifically, their methodology does not allow for a customer to switch to an electric stove or heat pump several years in advance of full disconnection. Such an assumption does not appear consistent with polling trends, where:[1] • 52% of consumers polled in ACT in 2023 said they were likely to replace gas appliances with electronic ones in the next 5-10 years, compared to 39% in 2021; • 35% of consumers polled in NSW in 2023 said they were likely to replace gas appliances with electronic ones in the next 5-10 years, compared to 17% in 2021.	↑ **Overstatement.** With faster partial electrification, consumption per connection would reduce quicker.
2.4	Frontier does not cross-check its results against trends in average consumption per customer.	As Frontier uses a relatively flat projection of EDD, the only non-weather mechanisms that its forecast has for reducing consumption per connection are partial electrification and efficiency improvements. Due to this, it is critical that both of these drivers accurately estimate impacts on consumption per connection, and that there are no other factors that affect consumption. One of the benefits of cross-checking analysis against the trend of average consumption per connection is that there is a lower threshold required to ensure that all drivers are identified and estimated accurately, as these will be captured in the average consumption. We have reviewed a draft report from the CIE that is responsive to Frontier's critiques and agree with the CIE that Frontier's forecast is out-of-line with historic changes in average consumption per customer. It is also out-of-line with the ACT's own forecasts that consumption per connection will decline by 2.5% per year.[2] This compares with a 1.1% annual decline that is implied Frontier.[2]	↑ **Overstatement.** CIE's analysis of both historic data and the ACT's forecasts show that Frontier's projections predict a considerably slower reduction for average consumption per customer.

Source: 1. Energy Consumers Australia (2024), "Homeowners are increasingly considering swapping gas appliances with electric ones" – Link.; 2. ACT (2022), "Utility Impact Statement – Gas Transition", p.5, - Link.; 3. VI customer consumption and volumes can be taken from the sheet "Evoenergy PTRM demand inputs" to derive consumption per connection. A compound annual growth rate can then be calculated between the 2026/27 figure and the 2030/31 figure.

Legend: Understatement or overstatement of gas demand

Overstated	Potentially overstated	None	Potentially understated	Understated	Unclear
↑	↗	-	↘	↓	?

Stated preference (SP) surveys have precedence in being used in environments and regulatory jurisdictions where there is likely to be significant change in the status quo.

Identifying usage of SP surveys

Jurisdiction	Description	Regulator approach
Gas - NSW	In a review of Jemena Gas Networks (JGN's) forecast for the 2025-30 access arrangement review, the AER's consultant, Acil Allen, found the assumed acceleration in residential disconnections was excessive and poorly evidenced and explicitly advised using customer research (such as via stated-preference/choice-modelling survey) with controls for hypothetical bias to quantify switching intentions.[1]	AER's draft and final decisions did not accept JGN's disconnection forecast and substituted a more conservative alternative. To support this decision, Acil Allen, analysed the relative attractiveness of gas versus electric appliances for existing residential dwellings. The AER agreed with the analysis and reasoning presented in Acil Allen's report,[2] implying that switching intentions via SP surveys could provide a reasonable basis for forecasting disconnections.
Gas - Victoria	Customer research-informed adjustments in demand forecasts: for example, the Victorian gas networks in their 2023-28 access arrangement review assumed a certain uptick in gas-to-electric switching in line with the 2022 Victorian Gas Substitution Roadmap (which had been based on customer sentiment surveys and developer feedback).	AER accepted the need for electrification adjustments. It scrutinised the magnitude of stated preferences but not the inherent principle. AER's position is that assumptions based on new policy rather than historical trends can be justified in some circumstances. The condition is that assumptions be reasonable and take into account the latest available information (in this case AEMO's 2023 GSOO).
Water - UK	Ofwat has accepted willingness-to-pay (WTP) surveys as evidence for service levels, provided they meet methodological standards. Ofwat observed issues when utilities relied on a single WTP survey for all decisions; by PR19 it mandated triangulating multiple stated preference studies and cross-checking against revealed data. Nonetheless, the fundamental role of stated preference was reinforced.	Frontier Economics, in a report for Ofwat,[3] noted that while reliance on any one survey has pitfalls, the SP approach itself is pragmatic and grounded in economic theory for quantifying customer value. SP surveys are an expected component of regulatory submissions in the UK water sector. Customer survey data is a legitimate basis for regulatory decisions on both demand and service outcomes.

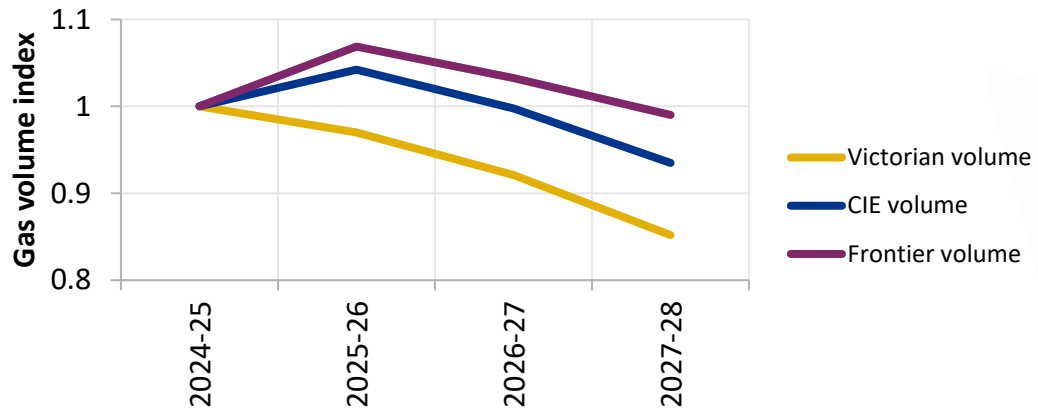
SP surveys have value in regulatory decision-making provided that these are high-quality, have sufficient granularity, and address potential biases.

Source: 1. Review of Jemena Gas Network's demand forecasts, Acil Allen, Nov 2024, p. 10 – Link; 2. AER - Draft decision Jemena Gas Networks (NSW) access arrangement 2025 to 2030, Attachment 12, p. 10 – Link; 3. PERFORMANCE COMMITMENTS AND OUTCOME DELIVERY INCENTIVES AT PR19, A report prepared for Ofwat, Frontier Economics, Figure 6, p. 18 – Link.

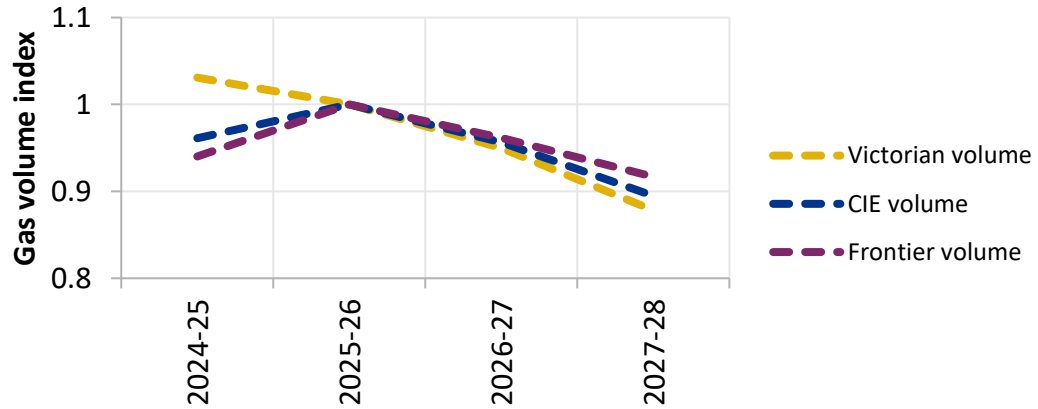
High-level quantitative analysis

The CIE's analysis more closely captures forecasts that were accepted by AER as part of gas price reviews in Victoria, a state with similar climate commitments to the ACT.

Comparison of forecasts (indexed at 2024-25)



Comparison of forecasts (indexed at 2025-26)



Commentary

- We have compared the residential gas volume trends for the AER approved gas demand projections by the three Victorian gas distribution businesses[1] against the CIE and Frontier demand forecasts. We have provided two separate indexes starting at 1 for 2024-25 and 2025-26 for all three series due to the overlapping access arrangement periods and the order of magnitude between the gas volumes.
- Victoria historically has the highest residential gas usage in Australia (around 80% of homes use gas for heating/hot water). The Victorian Government has banned all new residential developments from being connected to gas, with new homes expected to be all-electric in line with the state's Gas Substitution Roadmap. These policies accelerate electrification and reduce gas demand, making Victorian residential trends a useful comparator for the ACT forecasts.
- The 2024-25 indexed forecast for Victoria exhibits a sharper downward trend than either the Frontier or CIE forecast, however CIE's trajectory is closer to the observed pattern in Victoria compared to Frontier, which has a slower decline. Similarly, even when indexing at 2025-26, the CIE more closely mirrors the trend in Victoria.

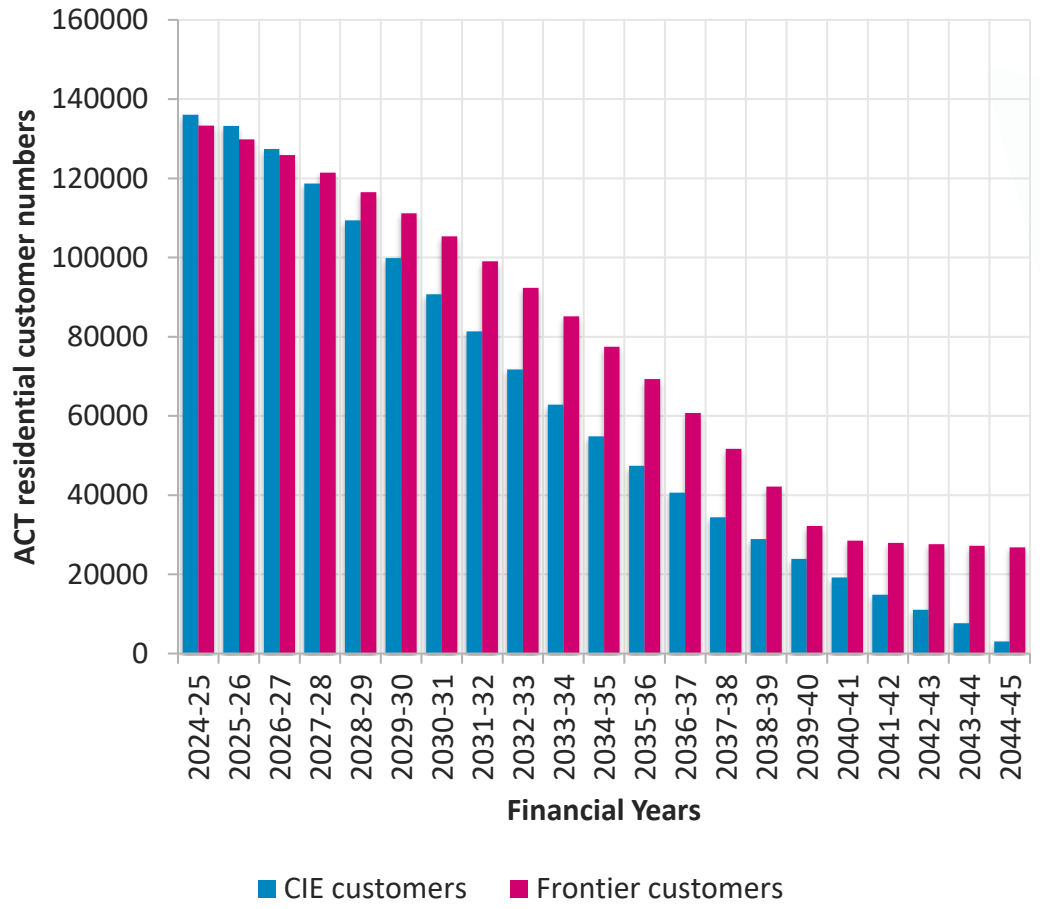
Assessment

- ACT policy is more mature and definitive for the phase out of gas, and customer research shows that ACT customers are most motivated nationally to electrify. Overall given that we consider Victoria an informative comparator to the ACT, this suggests that the CIE's forecasts may be more accurate. Frontier's flatter trajectory implies slower behavioural change to switch, which could underestimate the pace of transition given the policy similarities in ACT and Victoria.
- We note that our top-down assessment has not investigated the Victorian forecasts in detail and there may therefore be reasons why they differ to those for the ACT.

Source: 1. Sourced from Table 12.1 in Final Decisions: AusNet Gas Services, Gas distribution access arrangement, 1 July 2023 to 30 June 2028 - Link; Australian Gas Networks (Victoria & Albury), Gas distribution access arrangement, 1 July 2023 to 30 June 2028 - Link; & Multinet Gas Networks, Gas distribution access arrangement, 1 July 2023 to 30 June 2028 - Link.

Only the CIE produces a forecast projection of both customer numbers and volumes out to 2045 and performs more in line with the gas phase out targets in the ACT.

Road to 2045 – ACT residential gas customers



Commentary

- Given the ACT Government's policy to transition away from fossil gas by 2045, we have compared the long-term projections for Evoenergy's gas connections in the ACT as produced by both CIE and Frontier.
- Both forecasts begin with similar customer numbers at around 133,000–136,000. CIE's forecast shows a steep and continuous decline, reaching 3,043 customers by June 2045 with our assumption being that by December 2045, the CIE forecasts 0 customers in line with the ACT Government targets.
- Under its switching model, CIE's forecasting approach shows a higher rate of disconnections. Conversely, under Frontier's forecast, there is still a considerable level of gas consumption with the number of customers plateauing at around 30,000 customers between 2040 and 2045. We consider that Frontier's historical trend approach understates the decline in gas disconnections.
- Overall, there is a divergence between the two forecasts starting from 2027-28, with CIE projecting an accelerated phase-out of gas customers, while Frontier assumes a slower transition.

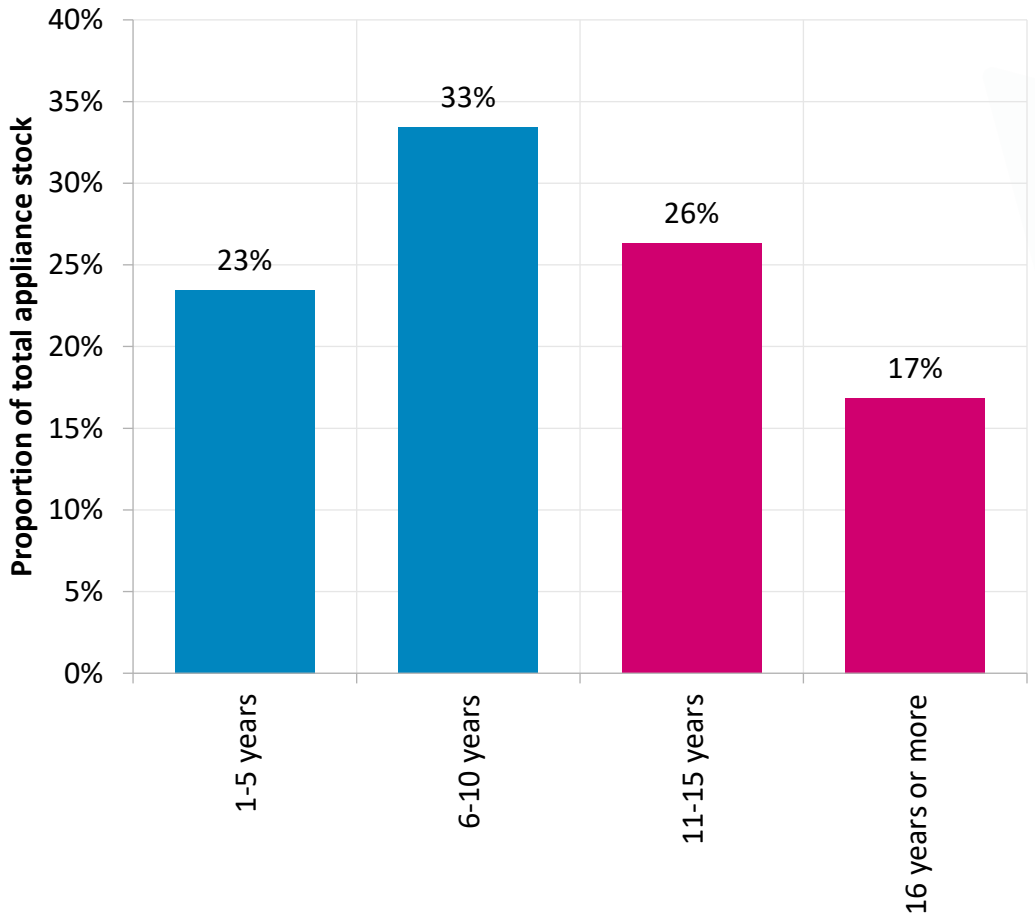
Assessment

- As Frontier retains a significant customer base beyond 2040, this implies weaker alignment with policy implementation, whereas we consider that on balance, CIE has explicitly modelled a trajectory that reaches zero gas demand and close to zero customers by 2045, demonstrating closer consistency with ACT's legislated climate and energy transition objectives.
- CIE's forecast is therefore more consistent with the stated policy goal of gas network infrastructure decommissioning and transition planning.

Source: Forecasting models as provided by Evoenergy: CIE Evoenergy gas demand forecast 11June2025 FINAL - with RIN sheets & 2025-12-03 Evoenergy demand forecasting model

Evidence from the CIE survey shows a sizeable cohort of appliances over 11 years old with the implication that they will be at or near end-of-life within the next 5 years.

Share of gas appliance ages[1]



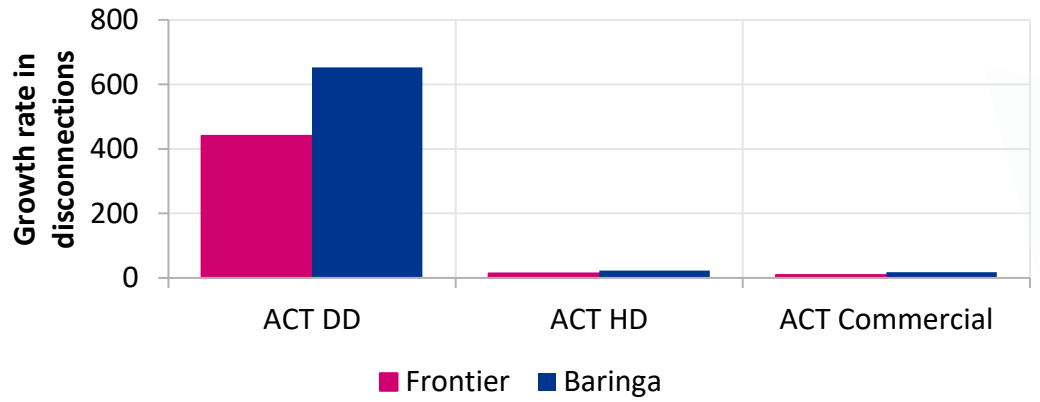
Commentary

- The CIE customer-level switching model surveyed 1,885 households asking what types of gas appliances they owned (either gas heater, hot water or cooktop) and the respective ages. Appliances were grouped into 5-year age bands to analyse the distribution of ageing stock and its implications for demand.
- Aggregating all the appliances into these 5-year age blocks, we have charted the ages to understand the distribution of the ageing of appliance stock in the ACT. This is important as the CIE switching model takes into account the age and condition of existing appliances to determine the rate at which gas appliances need replacement.
- The survey data shows that a material share of gas appliances (over 43%) in the ACT are over 11 years old. Appliances within a household are likely to fail within a few years of each other, since the ages of the most expensive appliances and all other appliances are very similar for most respondents. The CIE has adopted a typical appliance lifespans of approximately 16 years, suggesting that given this age profile and distribution, many units are at or near end-of-life and likely to fail within the next five years, creating a concentrated replacement wave.
- Under ACT's net-zero policy settings and the ban on new gas connections, when gas appliances fail, households overwhelmingly choose electric replacements rather than new gas units. This is also supported by other results in the survey which indicate that most households will switch to electric appliances when their gas appliances fail. CIE's forward-looking elasticity and switching model seeks to capture the behavioural response to ageing stock and policy signals.
- Overall, the ageing appliance stock profile signals a potential steep decline in demand.

Source: 1. CIE forecasting data as provided by Evoenergy for relevant survey questions on appliance stock and age.

Frontier's selection of an early starting year for trending historical data has a material impact on the connections forecast in both the ACT and NSW.

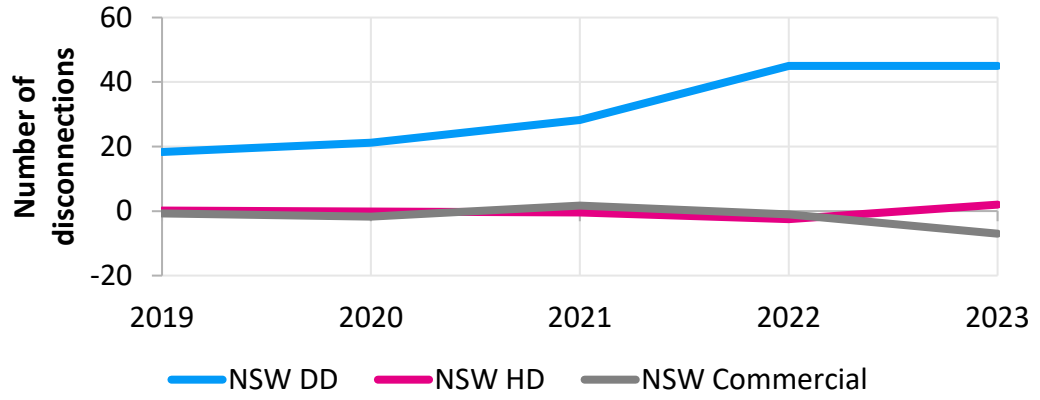
Disconnection forecast assessment for the ACT



Commentary

- As identified in *Item #1.2* on slide 23, Frontier start their historical trend calculation from 2022/23, which is a year before the passage of the Greenhouse Gas Reduction Amendment Bill.
- We consider it is more appropriate to start the trend from the following year in 2023/24, in order to take the Bill into account. However, we recognise that this only calculates a percentage difference based on the most recent 2 years of data.
- The chart on the left shows blue (Baringa) bars that calculate disconnections based on historical trend analysis that starts in 2023/24 are higher than the pink (Frontier) bars that base the historical trend on data from 2022/23. Switching to the Baringa approach would therefore reduce gas demand from the levels estimated by Frontier.

Disconnection forecast assessment for NSW



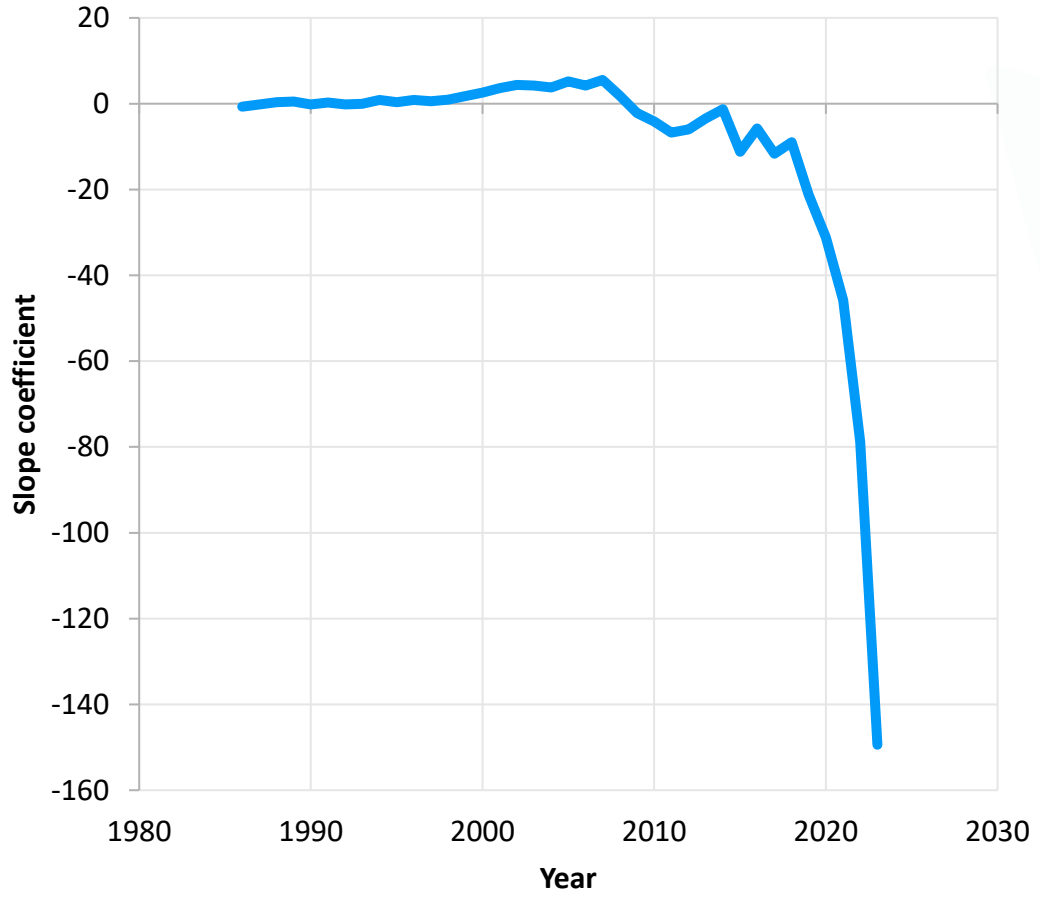
Commentary

- The chart on the left calculates how the estimate of the number of NSW disconnections changes when the start financial year of the linear trend is 2019 (Frontier's selection of starting year), 2020, 2021, 2022, and 2023. These 5 linear trends are calculated separately for the 3 customer groups: detached dwellings (DD), medium density/high rise (HD) and commercial customers.
- The chart shows that the total number of disconnections is driven almost exclusively by the NSW DD customer group. It also shows that a higher disconnection forecast is calculated using any financial year after 2019 as the start year.
- Given that standing charges were removed from temporarily disconnected gas customers in October 2019, providing an incentive to temporarily disconnect, it may be more appropriate to start the trend analysis from at least 2021, as this is the first financial year where the full year of data reflects the new charging structure.

Source: Forecasting models as provided by Evoenergy: CIE Evoenergy gas demand forecast 11June2025 FINAL - with RIN sheets & 2025-12-03 Evoenergy demand forecasting model

Frontier's estimated change in EDDs is likely to be too close to 0, and a more negative value could be more appropriate.

Estimated change in EDDs from regressions with different start years



Commentary

- The graph on the left shows the slope coefficient that is calculated from a regression of the number of EDDs against a time trend. The vertical axis shows how that coefficient changes when the start year of the regression moves ever closer to 2024 (the most recent year of data).
- It therefore shows that, if only more recent data is considered in the regression, any forecast based on this regression would assume that the number of EDDs falls into the future.
- Frontier estimate the change in future EDDs by performing a regression across the entirety of the available data (i.e. from 1986 to 2024). They justify this by stating it captures long-term climate trends and to avoid the effects of year-to-year weather.
- Our view is that Frontier's aim here is correct, but it ignores the fact that accelerating climate change may mean that historic trends from 1986 are not reflective of future environmental conditions.
- While the dates we cite below are far into the future, and therefore not as informative as if we had access to forecasts for the 2030s, we have found that:[1]
  - By 2050, in NSW, the number of cold days (below 2 degrees) is projected to fall by 9.3 days under a low emissions scenario, and by 14.6 days under a high emissions scenario.
  - For the ACT, the equivalent numbers by 2050 are 19.1 and 32.4.
- Due to this, using data from 1986 may not reflect climatic changes, and it could be more appropriate to use a more recently set of EDDs.

Source: 1. NSW Government, Interactive climate change projections map – Link. NSW Government and ACT Government (2024), "Australian Capital Territory Climate Change Snapshot", p.5 – Link.

4. Conclusions

Our review finds 2 outstanding issues with CIE's forecast and 6 with Frontier's. Stated preference surveys have value in periods of significant change from the status quo.

Key output	Forecast	Assessment	Conclusion
Number of customers	CIE	• The original CIE model contained a number of issues, but many have now been amended. • The criticisms that CIE has not addressed do not have a clear direction of bias.	No obvious bias
	Frontier	We identify 2 issues with Frontier's forecasts: • The use of a linear trend is not appropriate because it does not attempt to consider factors that could cause step-changes in numbers of disconnections, either econometrically or through the use of surveys. These factors include changes in policy as well as the decisions that households make when their appliances come to end of life: in a scenario where many appliances are old and policy encourages decarbonisation, step-changes in disconnections (such as those forecast by the CIE for 2027) are plausible. • To the extent that a linear trend is deemed acceptable, the start year of that trend should be more recent. In NSW, a start year on or after FY2020/21 seems appropriate given that FY2020/21 is the first year without a standing charge for temporarily disconnected gas customers. For ACT, FY2022/23 seems more appropriate because starting the trend beforehand means that time-periods prior to the passage of the Greenhouse Gas Reduction Amendment bill are included in the time-trend.	↑ **Likely overstates** number of customers and therefore gas demand

Usage per customer	CIE	• As with the number of customers, we understand CIE has corrected many of the issues identified in its modelling.
		• 2 issues still remain:
		  • One of them, issue 2.11, refers to the assumption that all subsidy-eligible customers will benefit from subsidies. Our view is that this affects only a small number of customers and therefore the overall impact is likely to be relatively small.
		  • The second, issue 2.7, identifies the large discontinuity in forecast disconnections in 2027. The methodology that underpins this does not have any obvious problems and it is important not to simply discard a methodology because the results of it look unusual. However, it is also not unreasonable for a regulator to be cautious about unusual results, and we therefore suggest that a smoother glide-path to CIE's 2028 or 2029 estimates could be selected, although acknowledge that this suggestion is qualitative/subjective.
			↓ **Likely understates** consumption per customer and therefore gas demand

	Frontier	We have identified 4 issues with Frontier's forecasts, which can broadly be summarised as follows: • Frontier forecasts very low reductions in EDD and partial electrification. They also do not appear to consider the fact that consumption from new customers will likely be lower than from existing customers, for example due to more efficient appliances. • The net effect of the above issues, together with the 2 issues on customer numbers, is a forecast where demand falls very slowly. This has not been cross-checked against historic reductions in demand which would have indicated an overstatement of future gas demand.	↑ **Likely overstates** consumption per customer and therefore gas demand

Stated preference (SP) surveys, such as those used by the CIE, have value in being used in environments where there is likely to be significant change in the status quo. Provided that these are high-quality, have sufficient granularity, and address biases, we consider that SP surveys have merit as a forecasting tool in regulatory decision-making.

Appendix

About Baringa

We have deep specialism in energy and advising leaders in the energy transition

Our international footprint

2,000+ Employees globally

100+ Employees Australia

10 hubs worldwide

#1 Energy and environment consultancy

We help clients solve some of their most complex policy and regulatory problems

We work with clients to launch new businesses and reach new markets

We help our clients navigate industry shifts by bringing clarity and insight

Leading deep sectoral consultancy

- In Australia we are focused on **Energy & Resources**, **Government** and **Financial Services – including ~70 energy specialists in Australia**
- We pride ourselves on being **geeky** when it comes to our **passion for helping clients**
- We aspire to be the consulting partner of choice for public and private sector clients, **trusted with their toughest and most strategic challenges** – renowned for our insight, smarts and integrity
- We deliver value through an **impactful and positive way of working** with clients

An award-winning consultancy with people-first culture

Best Workplaces™ Great Place To Work. AUSTRALIA 2025

TOP CONSULTING FIRM 2024 Australia — ConsultancyAU presents TOP CONSULTING FIRMS IN AUSTRALIA — Baringa

Forbes 2024 WORLD'S BEST MANAGEMENT CONSULTING FIRMS — POWERED BY STATISTA

Our impact on the energy sector

In the last two years, we've supported renewable energy clients on the development of:

- 120 GW of capacity globally
- In 50+ markets
- Including: 10 GW + renewable capacity in Australia
- and 1 GW + storage assets in Australia

 |

Baringa

Our Commercial, Operational and Technical expertise address clients' most pressing challenges across the gas value chain

Business & Commercial Advisory

- Market Entry / Procurement Supply Strategy: technology, business model & countries
- Gas to Power Strategy
- Energy Transition & de-carbonisation
- Risk Management Strategy
- Business Case Development
- Risk & Investment Capital Requirements

Market Fundamentals Analysis

- Global Supply & Demand Analysis – in the context of Energy Transition
- Gas and LNG Market Structural Changes
- Market Reports & Price Projections
- Market & Asset Modelling
- Financial Modelling

Transaction Advisory

- FID Decision Support
- Commercial & Regulatory Due Diligence
- Project Finance & Finance Restructuring
- Capital Investment & Institutional Advice
- Opportunity screening in market, policy context
- SPA, GSA, LTA & TUA etc. review

Data Science & Analytics

- Data Strategy & Architecture
- Artificial Intelligence business case & opportunity discovery
- Use Case identification
- Turning data into business insight
- Enterprise Automation
- Data Governance & AI capability building

Commercial & Asset Operational Readiness

- Hydrocarbon's accounting and inventory optimisation
- Route to Market approach for commercialising production
- Organisational Design: people, process & systems
- Operating Model & Risk Governance

Trading Strategy & Capability

- Commercial Trading & Hedging Strategy
- Book Structure & Transfer Pricing
- Risk Management Frameworks
- Risk Exposure Assessment
- Regulations & Compliance

Energy Portfolio Optimisation

- Portfolio Optionality Monetisation
- Asset & Contract Flexibility Evaluation
- Portfolio Intrinsic Valuation
- Hedging & Optimisation Strategies
- Modelling Capability
- System Selection & Implementation
- Risk Management Analytics & Advisory

Technology Transformation

- System Selection & Implementation
- IT Strategy & Target Architecture
- System Health Check
- Energy / Commodity Trading & Risk Management Systems

We advise on the development and use of gas infrastructure, including a focus on policy and regulation around the future of gas demand.

Gas demand projections

Electricity distribution and gas demand advisory

Asset POWERCO

Client QIC

- QIC sought a review of current and historical electricity and gas demand and preparation of independent electricity and gas demand forecasts for Powerco's distributor's service area, to support the partial sale of its holding.
- We produced demand forecasts for the distributor's network based on several future state scenarios and a range of outcomes that support further electrification and decarbonisation of the network, our analysis also included alternative gas transition scenarios and alternative use cases for the gas network.
- Our findings were consolidated into a report for a transaction process that considered: adjustments and changes to government policies to reflect global initiatives and knock on effect that they have and from consumer and industrial users, economic forecasts, population growth, technological advancement and impacts from energy substitution.

Regulatory impact assessment

New gas connections

ACT Government – Environment, Planning and Sustainable Development

- The ACT Government needed to decide on an implementation strategy which defines the timeline, transitional arrangements, and the territory zones subject to the proposed regulation to prohibit new gas connections in prescribed circumstances.
- We were engaged to conduct a high-level qualitative and quantitative analysis of the impact that the proposed regulation could have on a range of ACT consumers and stakeholders, and the Territory's emission reduction targets.
- This assessment concluded that the likelihood of this regulation causing an increase in electricity costs is low, mainly due to the relatively small additional electricity load (around 7 GWh/yr) when compared to the overall electricity demand in ACT (2,772 GWh/yr demand in 20221). However, it would contribute to increasing gas costs to consumers.

Gas utility business plan

Develop a long-term business plan

Confidential: *A natural gas and LPG distribution and supply business, providing to 40,000 domestic, commercial and industrial customers*

- Our client needed a business plan that demonstrated the enduring value in the business, reflective of all of 'business as usual' activities, market developments and policy commitments towards net zero. To inform the business plan, we developed a model of the client's gas network, to understand future changes in gas demand.
- We undertook a detailed review of the regulatory/policy landscape, and the size of the clients existing business, including understanding existing infrastructure (gas/LPG supply points, distribution network, customer connections etc.).
- We developed a model to estimate the change in the client's customer base at a connection level, and used this model to understand the changes that the business could experience across a range of decarbonisation scenarios. This analysis was used to inform an investment plan and overview of anticipated costs.

GB Gas demand forecasting

Commercial vendor due diligence

Asset Grain LNG

Client national grid

- National Grid, was selling Grain LNG, one of Europe's largest LNG regasification terminals. Baringa undertook a full sell-side commercial due diligence to support the successful sale of the asset (sold for £1.5bn in summer 2025).
- To assess asset value, we used our Global Gas Model to create long-term scenarios of future gas demand in GB and Europe, as well as modelling gas supply into the region. To understand future uncertainty and risks, these scenarios covered a wide range of climate and market trajectories.
- Using outputs from our Global Gas Model, we undertook stochastic modelling, based on the option value of regasification, to estimate the future value of regasification capacity at Grain LNG.
- Our modelling formed the basis of a comprehensive CVDD report and was relied upon by both the seller, prospective buyers and lenders.