



**FINAL DECISION**  
**Evoenergy**  
**Access Arrangement**

**2021 to 2026**

**Attachment 12**  
**Demand**

April 2021

© Commonwealth of Australia 2021

This work is copyright. In addition to any use permitted under the Copyright Act 1968, all material contained within this work is provided under a Creative Commons Attributions 3.0 Australia licence, with the exception of:

- the Commonwealth Coat of Arms
- the ACCC and AER logos
- any illustration, diagram, photograph or graphic over which the Australian Competition and Consumer Commission does not hold copyright, but which may be part of or contained within this publication. The details of the relevant licence conditions are available on the Creative Commons website, as is the full legal code for the CC BY 3.0 AU licence.

Requests and inquiries concerning reproduction and rights should be addressed to the:

Director, Corporate Communications  
Australian Competition and Consumer Commission  
GPO Box 4141, Canberra ACT 2601

or [publishing.unit@acc.gov.au](mailto:publishing.unit@acc.gov.au).

Inquiries about this publication should be addressed to:

Australian Energy Regulator  
GPO Box 520  
Melbourne Vic 3001

Tel: 1300 585 165

Email: [AERInquiry@aer.gov.au](mailto:AERInquiry@aer.gov.au)

AER reference: 65197

## Note

This attachment forms part of the AER's final decision on the access arrangement that will apply to Evoenergy for the 2021–26 access arrangement period. It should be read with all other parts of the final decision.

The final decision includes the following documents:

Overview

Attachment 2 – Capital base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 7 – Corporate income tax

Attachment 12 – Demand

Attachment 13 – Capital expenditure sharing scheme

# Contents

<b>Note</b> .....	<b>2</b>
<b>Contents</b> .....	<b>3</b>
<b>12 Demand</b> .....	<b>4</b>
<b>12.1 Final decision</b> .....	<b>4</b>
<b>12.2 AER consultation with Evoenergy</b> .....	<b>5</b>
<b>12.3 Evoenergy’s revised proposal</b> .....	<b>5</b>
12.3.1 Summary .....	5
12.3.2 Forecast methodology .....	8
<b>12.4 Assessment approach</b> .....	<b>13</b>
<b>12.5 Reasons for final decision</b> .....	<b>14</b>
12.5.1 Minimum, maximum and average demand .....	14
12.5.2 Forecast pipeline capacity and utilisation .....	14
12.5.3 Demand forecast of Tariff VI and Tariff VB .....	14
12.5.4 Demand forecasts for Tariff D .....	27
<b>Shortened forms</b> .....	<b>28</b>

## 12 Demand

This Attachment sets out our assessment of the demand forecasts for Evoenergy for the 2021–26 access arrangement period. Demand is an important input into the derivation of Evoenergy's reference tariffs. It also affects operating expenditure (opex) and capital expenditure (capex), which are linked to network growth via new connections.<sup>1</sup>

### 12.1 Final decision

Based on the information before us, we do not accept Evoenergy's Tariff VI demand forecasts (residential and commercial demand) for the 2021–26 period. We have substituted our forecast of Tariff VI demand. We accept all other aspects of Evoenergy's demand forecast.

We acknowledge there is significant uncertainty with demand forecasting in Evoenergy's service area. In particular, the effect of decarbonisation policies, electrification incentive schemes and changes to connections policy for new greenfield and urban infill developments will put downward pressure on gas demand. This downward pressure is unlikely to be captured in standard historical trend driven demand forecasts, and it is reasonable to make adjustments to capture the effect of these changes.

While we consider Evoenergy's base forecasting model is sound, we do not consider the additional adjustments outside of the model (post-model adjustments) were arrived at on a reasonable basis or represent the best forecast possible. In particular:

- Evoenergy relied on a customer survey (the Sagacity customer survey) to derive forecast demand – we do not consider the survey is fit for the purpose of forecasting gas demand and customer numbers
- neither Evoenergy nor its consultants have adequately addressed the key concerns expressed by the survey participants.

We have provided an alternative estimate based on long-term observed trends (i.e. Evoenergy's base model) in combination with post-model adjustments derived from short-term observed trends. This forecast is based on the advice of our consultant, ACIL Allen. We consider our alternative approach to be more robust and reliable as it is less speculative than Evoenergy's revised proposal.

Given the unique situation in the ACT, we are open to Evoenergy submitting an application mid-period to vary its 2021–26 access arrangement if the trajectory of its demand significant differs to our final decision.<sup>2</sup> This is in line with submissions from

---

<sup>1</sup> Our final decisions on Evoenergy's capex and opex are set out in Attachment 5 and the Overview, respectively.

<sup>2</sup> NGR r.65.

Energy Consumers Australia (ECA) and the Consumer Challenge Panel (CCP24) to allow for the potential revisit of Evoenergy's demand forecast.<sup>3</sup>

Our final decision accepts the following elements of Evoenergy's demand forecast:

- The base model, which has been derived by The Centre for International Economics (CIE) and takes into account of weather normalisation, price elasticity, historical trends and projections in line with the Australian Energy Market Operator's (AEMO) demand forecasting approach.
- The updated demand and customer impacts associated with 2019–20 actual usage and customer data.
- excluding greenfield developments from its connection forecast from 1 July 2021, driven by existing ACT Government policy.
- excluding all infill (brownfield) developments from its connection forecast from 1 January 2023, driven by the latest ACT Government policy.
- The demand and customer numbers forecast for volume boundary consumers (Tariff VB).
- The demand and customer numbers forecast for industrial and large government consumers (Tariff D).

The reasons for our final decision are discussed in section 12.4.

## 12.2 AER consultation with Evoenergy

AER staff consulted extensively with Evoenergy throughout the review process, and particularly in the period between receipt of the revised proposal and the publication of this decision. Staff met with Evoenergy and organised a discussion between ACIL Allen and CIE about demand.

## 12.3 Evoenergy's revised proposal

### 12.3.1 Summary

Evoenergy engaged CIE to prepare demand forecasts for its network across the ACT and NSW in its revised proposal. A summary of the key aspects of Evoenergy's demand forecasts is set out in Table 12.1 (Tariff VI – residential and commercial and Tariff VB) and Table 12.2 (Tariff D – industrial or large government)<sup>4</sup>.

---

<sup>3</sup> CCP24, *Advice to the AER on Evoenergy revised gas network 21 plan for Evoenergy (ActewAGL) ACT, Queanbeyan and Palerang access arrangement July 2021–June 2026*, February 2021, p. 35; Energy Consumers Australia, *Response to Evoenergy and Australian Gas Networks (SA) revised proposals 2021–26*, February 2021, p. 7.

<sup>4</sup> Tariff D is gas consumers who consume more than 10,000 gigajoule (GJ) per annum.

**Table 12.1 Evoenergy revised demand forecasts for Tariff VI and Tariff VB for the 2021–26 access arrangement period**

	2021–22	2022–23	2023–24	2024–25	2025–26
Residential and Commercial Connections <sup>a</sup>	145,872	143,621	140,719	137,351	133,975
Residential and Commercial Demand (TJ)	6,118	5,901	5,657	5,400	5,151
Volume Boundary Connections	13	13	13	13	13
Volume Boundary Demand (TJ)	4	4	4	4	4

Source: Evoenergy, *Attachment 8.2 – CIE, Revised demand forecasting model*, January 2021 (Confidential).

Notes: a. Average financial year numbers.

**Table 12.2 Evoenergy revised demand forecasts for Tariff D for the 2021–26 access arrangement period**

	2021–22	2022–23	2023–24	2024–25	2025–26
Number of connections	39	39	39	39	39
Usage per connection (TJ)	28.1	27.2	26.5	25.8	25.2
Total Usage (TJ/annum)	1,096	1,062	1,033	1,007	984
Total chargeable demand (GJ/day)	6,331	6,154	6,001	5,868	5,751

Source: Evoenergy, *Attachment 8.2 – CIE, Revised demand forecasting model*, January 2021 (Confidential).

In our draft decision, we did not accept Evoenergy's Tariff VI demand forecasts. In its initial proposal, Evoenergy adjusted the findings of CIE to arrive at its forecast of demand. We were concerned that these adjustments were made without quantitative analysis of the type conducted by CIE, and without independent expert assurance. We also requested Evoenergy incorporate any tangible changes to reflect the ACT Government's latest commitments to achieve net zero emission in its revised proposal.<sup>5</sup>

<sup>5</sup> AER, *Draft Decision, Evoenergy access arrangement 2021–26, Attachment 12 – Demand*, November 2020, p. 4.

Evoenergy has undertaken the following work to address the concerns in our draft decision:<sup>6</sup>

- updating the demand forecast based on latest available customer numbers and usage data, up to October 2020
- commissioning expert market research consultants Sagacity Research to undertake a survey of ACT residential customers on their energy fuel preferences, future gas usage intentions, and responsiveness to electrification incentives
- analysis of specific policy targets set out in the *Parliamentary and Governing (P&G) Agreement*<sup>7</sup> to achieve net zero emission in the ACT by 2045, including the goal of no new gas connections to future infill developments from 2023; and
- review of gas demand by major gas customers on Tariff D, including commitments to transition away from natural gas.

Evoenergy provided the above information to CIE to develop a revised demand forecast for the 2021–26 period. Unlike the initial proposal, the demand forecast only includes post-model adjustments from CIE’s analysis, that is, Evoenergy has not sought to make further adjustments beyond those made by CIE.

CIE made a number of changes to its base model in its revised demand forecast. It:

- removed new residential and commercial connections in four ACT postcodes with significant forecasted greenfield developments from 2021–22
- removed new residential and commercial connections for the rest of ACT from January 2023
- reduced the gas consumption of ACT residential owner-occupier customers by 22.3 per cent by 2025–26
- increased ACT residential customer exits by a further 15,329 by 2025–26
- reduced consumption and chargeable demand for ACT Government and Australian National University (ANU) customers.

In addition to CIE’s input, Evoenergy engaged Core Energy and Resources (CORE) to undertake an independent assessment of the expected impact of recent developments in the ACT’s energy and planning policy. This analysis was based on a ‘top-down’ approach of ACT Government targets and provides a point of comparison to CIE’s forecast.

---

<sup>6</sup> Evoenergy, *Revised GN21 plan – Response to the draft decision, ACT and Queanbeyan-Palerang gas network 2021–26*, January 2021, pp. 39–40.

<sup>7</sup> ACT Government, *Parliamentary and Governing Agreement*, 10<sup>th</sup> Legislative Assembly for the Australian Capital Territory, November 2020: [https://www.cmtedd.act.gov.au/\\_\\_data/assets/pdf\\_file/0003/1654077/Parliamentary-Agreement-for-the-10th-Legislative-Assembly.pdf](https://www.cmtedd.act.gov.au/__data/assets/pdf_file/0003/1654077/Parliamentary-Agreement-for-the-10th-Legislative-Assembly.pdf).



## Summary of Evoenergy's forecast

Evoenergy forecast the following for the 2021–26 period:

- total residential and commercial demand to decrease by around 3.8 per cent per year. This compares to a decrease of 1.1 per cent per year in the 2016–21 period.<sup>8 9</sup>
- residential and commercial consumption per connection to decrease by 1.5 per cent per year. This compares to a decrease of 2.8 per cent per year in the current 2016–21 period.<sup>10 11</sup>
- residential and commercial connections to decrease by 2.3 per cent per year. This compares to an increase of 1.8 per cent per year in the current 2016–21 period.<sup>12 13</sup>
- annual usage of industrial and large government demand to decrease by 2.7 per cent per year. This compares to a decrease of 0.6 per cent per year in the 2016–21 period.
- chargeable demand to decrease by 2.4 per cent per year. This compares to a decrease of 1.1 per cent per year in the current 2016–21 period.<sup>14 15</sup>

### 12.3.2 Forecast methodology

CIE's revised forecast methodology remain similar to its initial proposal, with one significant difference. In the revised forecast, CIE used the results of a customer preference survey to estimate its post-model adjustments. This takes the place of the observed data from the ACT Energy Efficiency Improvement Scheme (EEIS) that was used in the initial proposal.

---

<sup>8</sup> Noting that any comparison between the 2021–26 access arrangement period and the current period is a comparison between two forecasts, as 2020–21 are estimates.

<sup>9</sup> AER analysis using Evoenergy, *Attachment 8.2 – CIE, Revised demand forecasting model*, January 2021 (Confidential).

<sup>10</sup> Noting that any comparison between the 2021–26 access arrangement period and the current period is a comparison between two forecasts, as 2020–21 are estimates.

<sup>11</sup> AER analysis using Evoenergy, *Attachment 8.2 Revised demand Forecasting model prepared by CIE*, January 2021 (Confidential).

<sup>12</sup> Noting that any comparison between the 2021–26 access arrangement period and the current period is a comparison between two forecasts, as 2020–21 are estimates.

<sup>13</sup> AER analysis using Evoenergy, *Attachment 8.2 Revised demand Forecasting model prepared by CIE*, January 2021 (Confidential).

<sup>14</sup> Noting that any comparison between the 2021–26 access arrangement period and the current period is a comparison between two forecasts, as 2020–21 are estimates.

<sup>15</sup> AER analysis using Evoenergy, *Attachment 8.2 Revised demand Forecasting model prepared by CIE*, January 2021 (Confidential).

The forecasts for Tariff VI and Tariff VB gas demand were derived by multiplying the forecast of net customer numbers by the forecast consumption per connection.<sup>16</sup> This methodology was applied for both residential, commercial and volume boundary customer groups, albeit with different drivers.

As part of its forecast methodology, CIE has taken into account the impact of weather and price elasticities, and has adjusted connection numbers due to historical abolishments, electricity-to-gas (E2G) conversion, suspended connections and adjustments to reflect the impacts of the ACT Government's climate change strategy.<sup>17</sup>

### 12.3.2.1 Customer preference survey

Evoenergy engaged Sagacity Research to conduct an online survey to better understand its customers' energy fuel preferences, future gas use intentions, and responsiveness to ACT Government incentives to switch away from natural gas.<sup>18</sup>

In November 2020, a 10 minute online survey was distributed to a random sample of approximately 30,000 Evoenergy residential customers. A total of 1,886 responses were received, a response rate of 6.3 per cent. Of these, 1,755 identified themselves as owner-occupiers.

The 6.3 per cent participant response to the survey indicates:

- customer preferences are skewed towards electric appliances, for all major appliance categories except cooktops (with gas cooktops preferred by around 50 per cent of customers)
- just over a third of major gas appliances in the ACT are at an age when replacements are more likely (10+ years old), and about a third are flagged for replacement in the next five years
- about one in five customers have shown a very strong preference to move away from gas when they replace each of their major gas appliances
- around 20 per cent of customers are aware of rebates for switching from gas to electric home heating. Of those customers who were not previously aware, 40 per cent stated they were much more likely to consider changing to an electric appliance when prompted with information about the rebate.

Based on the survey responses, CIE estimated the likelihood that 17 per cent of existing owner-occupier ACT customers would not have gas appliances in the next five years.

---

<sup>16</sup> Evoenergy, *Attachment 7 – Demand forecasts, Access arrangement information, ACT and Queanbeyan-Palerang gas network 2021–26*, June 2020, p. 7-4.

<sup>17</sup> Ibid.

<sup>18</sup> Evoenergy, *Revised GN21 plan – Response to the draft decision, ACT and Queanbeyan-Palerang gas network 2021–26*, January 2021, pp. 42–43.

### 12.3.2.2 Forecasting of Tariff VI and Tariff VB connection numbers

The steps undertaken by CIE to forecast residential customer numbers is consistent with its initial forecast, except for the following additions and changes to inputs and post model adjustments:

- the removal of all new ACT connections from 1 January 2023 in addition to the removal of greenfield development in the ACT from 2021–22, consistent with the P&G agreement.<sup>19 20</sup>
- increasing the exit of ACT residential owner-occupier customers' by a further 15,329 in 2021–26. The reduction is comprised of 2,795 abolished, 12,534 zero consuming and 2,100 suspended connections. The adjustments were based on Sagacity's survey responses.<sup>21</sup> This replaces CIE's previous approach of forecasting changes in abolishment trends based on EEIS driven switching from gas heaters to reverse cycle air conditioning.<sup>22</sup>

---

<sup>19</sup> Evoenergy, *Attachment 8.1 Update to forecast demand report prepared by CIE*, January 2021, p. 7.

<sup>20</sup> ACT Government, *Parliamentary and Governing Agreement*, 10<sup>th</sup> Legislative Assembly for the Australian Capital Territory, November 2020.

<sup>21</sup> Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 8.

<sup>22</sup> *Ibid.*, p. 10.

**Table 12.3 Evoenergy residential and commercial customers forecasts  
Tariff VI and Tariff VB**

	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26
Opening Connections	154,050	146,903	144,841	142,401	139,037	135,665
ACT detached dwellings	1,486	425	210	0	0	0
ACT medium density/high rise	1,432	784	668	0	0	0
NSW detached dwellings	269	225	226	226	226	226
NSW medium density/ high rise	38	31	31	31	31	31
Electricity-to-Gas (E2G) Conversion	50	50	31	11	11	11
Commercial	65	62	35	8	8	8
Volume Boundary Tariff	4	3	0	0	0	0
Abolishments	-677	-685	-693	-701	-709	-717
Suspended Connections	-9,809	-2,954	-2,948	-2,939	-2,939	-2,939
<b>Net Connections</b>	<b>-7,147</b>	<b>-2,062</b>	<b>-2,441</b>	<b>-3,364</b>	<b>-3,372</b>	<b>-3,379</b>
Closing Connections	146,907	144,844	142,401	139,037	135,665	132,285

Source: AER analysis using Evoenergy, *Attachment 8.2 – CIE, Revised demand forecasting model*, January 2021, Confidential.

### 12.3.2.3 Forecasting of Tariff VI and Tariff VB consumption per connection

The steps undertaken by CIE to forecast residential customer numbers is similar to its initial forecast, except for the following additions and changes to its post-model adjustments:

- adjusting the average usage of ACT residential owner-occupier customers, as set out in Table 12.4, to account for the expected changes in the number of gas appliances (based on Sagacity survey responses). This replaces CIE’s previous approach of forecasting changes in usage trends based on customer responses to the EEIS scheme.<sup>23</sup>
- reducing ACT Government and ANU Tariff V connections demand, based on linear progress towards the ACT Government target of phasing out fossil-fuel gas in the

<sup>23</sup> Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 10.

ACT by 2045. This leads to a reduction by 4 per cent from the current baseline usage each year.<sup>24</sup>

- adjusting ACT commercial customers.<sup>25</sup>

**Table 12.4 Evoenergy adjustment to average usage by existing ACT residential connections**

Financial year ending 30 June	Adjustment (%)
2021	-3.6
2022	-7.1
2023	-10.8
2024	-14.5
2025	-18.3
2026	-22.3

Source: Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 10.

Note: Abolished connections excluded from base, but suspended and zero consuming connections included in base

#### 12.3.2.4 Top down assessment by CORE

As noted earlier, Evoenergy engaged CORE to undertake an independent assessment of ACT Government energy policy on its gas connections and demand.

The approach adopted by CORE is largely top down, and focuses its assessment on two principal classes of customer:<sup>26</sup>

- existing Tariff VI customers
- new Tariff VI customers.

CORE has analysed the available data to estimate the number of connections expected to be impacted by Government policy. Customers have been segmented as follows:<sup>27</sup>

- Larger consuming households – multiple water heaters and ducted gas heating and/or multiple stand-alone systems and cooking
- Low-mid consuming households – lower capacity of water heating and lower capacity of room heating (excluding lower income and priority households)

---

<sup>24</sup> Ibid., p. 13.

<sup>25</sup> Ibid., p. 13.

<sup>26</sup> Evoenergy, *Attachment 8.4 – CORE, Assessment of impact of climate change initiatives*, January 2021, p. 4.

<sup>27</sup> Ibid., p. 16.

- Lower income and priority households – as defined by legislation under the Priority Household Target (PHT).

In summary, CORE estimated existing tariff VI demand will fall by 263 TJ in 2022 and 1,323 TJ in 2026, with an average annual reduction of 7,500 connections. This represents a 20 per cent reduction by 2026 from the 2020 level (or 4 per cent per annum).<sup>28</sup>

### 12.3.2.5 Forecasting of Tariff D

The steps that CIE undertook to forecast industrial customer demand is consistent with its initial forecast, except for the following additions and changes to post model adjustments:

- applying a 4 per cent reduction on current baseline usage each year, in line with linear progress towards the target of phasing out fossil fuel gas in the ACT by 2045.<sup>29</sup>
- for ANU Tariff D sites, applied an annual growth rate of negative 18 per cent, in line with the reduction of approximately 70 per cent envisaged in the Acton Campus Energy Management Plan.<sup>30</sup>
- the removal of one Tariff D site that is set to be demolished and replaced with a mixed use development.<sup>31</sup>

## 12.4 Assessment approach

Rule 74(2) of the NGR requires forecasts in access arrangement proposals to be arrived at on a reasonable basis, and to represent the best forecast possible in the circumstances. Based on all the information before us, we are not satisfied that forecasts in Evoenergy's revised proposal for Tariff VI demand are consistent with rule 74(2) of the NGR.

For our final decision, we have separately assessed Evoenergy's demand forecasts based on these key components:

- CIE's base model
- CIE's post-model adjustments.

With respect to Tariff D, we are satisfied that the demand forecasts for these tariff classes are consistent with rule 74(2) of the NGR.

The reasons for our decision are discussed further below.

---

<sup>28</sup> Ibid., pp. 19–20.

<sup>29</sup> Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 13.

<sup>30</sup> Ibid., p. 13.

<sup>31</sup> Ibid., pp. 13–14.

## 12.5 Reasons for final decision

### 12.5.1 Minimum, maximum and average demand

Under the NGR, Evoenergy's access arrangement must include minimum, maximum and average demand for the earlier access arrangement period.<sup>32</sup> Evoenergy's access arrangement information and its response to our Regulatory Information Notice (RIN) satisfy these requirements.<sup>33</sup>

### 12.5.2 Forecast pipeline capacity and utilisation

The NGR require that to the extent practicable, the access arrangement information should include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period.<sup>34</sup>

Evoenergy did not provide this information in its access arrangement information. However, Evoenergy's distribution network is a meshed network made up of interconnected pipes, and there are a number of practical considerations that mean that calculating forecast capacity and utilisation is not practicable.

### 12.5.3 Demand forecast of Tariff VI and Tariff VB

As noted earlier, Evoenergy's forecast demand is materially different to the forecast presented in its initial proposal. Evoenergy has maintained the approach of estimating a long-term trend driven forecast (the base model), then adjusting the outcomes to account for factors not captured by the base model (post-model adjustments). Evoenergy's approach to calculating its post model adjustments is materially different to the approach in its initial proposal.

Based on the information before us, we are not satisfied that Evoenergy's demand forecasts for Tariff VI for both consumption per connection and connection numbers, was arrived at on a reasonable basis or represents the best forecast possible. As a result, we have provided an alternative estimate based on our assessment of the information available and advice from ACIL Allen.

#### 12.5.3.1 CIE's Base model

CIE's base model follows AEMO's demand forecast approach. This includes weather normalisation, same price elasticity, historical trends and projections.<sup>35</sup> We accepted

---

<sup>32</sup> NGR, r. 72(1)(a)(iii)(A).

<sup>33</sup> Evoenergy, *Attachment 7 – Demand forecasts, Access arrangement information, ACT and Queanbeyan-Palerang gas network 2021–26*, June 2020, p. 7-13.

<sup>34</sup> NGR, r. 72(1)(d).

<sup>35</sup> Evoenergy, *Appendix 7.1 – CIE, Final Report Forecast demand for natural gas*, 19 June 2020, pp. 47, 52, 54, 57 and 63.

this approach in our draft decision, as it is in line with our recent decisions and a number of reputable forecasters' approach to demand forecasting.

In our draft decision, we accepted the removal of greenfield developments from 2021–22 under existing ACT Government policy. The latest *Parliamentary and Governing Agreement* confirms that our draft decision remains reasonable stating:

“Legislate to prevent new gas mains network connections to future stages of greenfield residential development in the ACT in 2021–22. Future stages of Jacka and Whitlam will be all-electric.”<sup>36</sup>

In its revised proposal, Evoenergy has also removed new residential and commercial connections for the ACT from January 2023 based on the latest *P&G Agreement* which states:

“Commence a transition project, working with industry and other stakeholders, to advance all-electric infill developments, with a goal of no new gas mains network connections to future infill developments from 2023.”<sup>37</sup>

While the process and timing on the removal of infill developments appears to be less firm than for greenfield developments, our analysis shows that the impact to overall demand would be similar, even if the timing is slightly earlier than the 1 January 2023 date proposed by Evoenergy.

As such, we accept the exclusion of all new ACT connections from 1 January 2023. We have accepted this as a reduced input to the base model, rather than a post model adjustment. This is likely to deliver a more accurate demand forecast and is consistent with advice from our consultant, ACIL Allen.<sup>38</sup>

### 12.5.3.2 CIE's Post-model Adjustments

As noted above, CIE modified the outcomes of its model using a different approach from the initial proposal. CIE has applied the following post-model adjustments:

- based on Sagacity survey responses, added 15,329 ACT residential owner-occupier customers' exits by 2025–26 (compared to the base model, consisting of 2,795 abolished, 12,534 zero consuming connections and 2,100 suspended connections).<sup>39</sup>
- adjusted the average usage of ACT residential owner-occupier customers, to account for the expected change in the number of gas appliances, based on its interpretation of the Sagacity survey responses.

---

<sup>36</sup> ACT Government, *Parliamentary and Governing Agreement*, 10<sup>th</sup> Legislative Assembly for the Australian Capital Territory, November 2020.

<sup>37</sup> Ibid.

<sup>38</sup> ACIL Allen, *Review of Evoenergy's gas demand forecasts*, April 2021, p. 5.

<sup>39</sup> Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 8.



- adjusted ACT Government and ANU Tariff V connections, based on linear progress towards the ACT Government’s target of phasing out fossil-fuel gas in the ACT by 2045. This results in a reduction of 4 per cent of the current baseline usage each year.<sup>40</sup>
- adjusted the number of ACT commercial customers.<sup>41</sup>

Given the reliance on the Sagacity survey results in deriving the post model adjustments, and its significant impact on Tariff VI demand, we engaged ACIL Allen to provide independent expert advice. We sought advice on the reliability of the survey results and the reasonableness of CIE’s interpretation of the survey results for the purpose of demand forecasting.

### *Customer preference survey*

ACIL Allen reviewed the survey questions and participants’ responses in detail. ACIL Allen expressed concern about the use of the Sagacity survey to quantify the impact of existing customers’ intentions to switch appliances from gas to electricity. These concerns include:<sup>42</sup>

- stated preferences are not the same as revealed preferences
- a response rate of 6.3 per cent may be indicative of a non-representative sample.

ACIL Allen considers a participant’s stated intention and final decision might differ significantly due to hypothetical bias. Hypothetical bias arises when participants have little or no market experience of the question being asked. Decisions to switch from gas to electric appliances do not occur frequently, and ACIL Allen considers there is a tendency for a participant’s stated intentions to be upwardly biased towards new products.

ACIL Allen also considers the hypothetical bias is exacerbated by several aspects of the survey. These aspects make it more challenging for participants to make informed decisions or reliably estimate their intentions. The aspects identified by ACIL Allen are:

- the questionnaire was long, leading to respondent fatigue. Participants were forced to answer questions quickly, without carefully considering the key factors in each decision.
- questions relating to the likelihood and timing of appliance changes did not mention any costs that would be incurred in switching from gas to electric appliances.
- the questions did not provide the response option of ‘Don’t know’ or ‘Don’t care’, forcing the participant to commit to an answer when they may be unable or unwilling to provide a well-considered response.

---

<sup>40</sup> Ibid., p. 13.

<sup>41</sup> Ibid., p. 13.

<sup>42</sup> ACIL Allen, *Review of Evoenergy’s gas demand forecasts*, April 2021, pp. 6–7.

While a 6.3 per cent response rate might be an adequate result under some circumstances, ACIL Allen does not consider a response rate at this level to be suitable for the purposes to which the survey was applied.

A low response rate raises the probability of a non-representative sample in two ways:

- it attracts individuals that are biased towards environmental issues
- it attracts individuals that are disgruntled towards the gas businesses for high bills or poor services.

Both cases result in a bias that overstates the likelihood that respondents would reduce or terminate their reliance on gas. While Sagacity offered respondents a chance of winning a \$100 cash prize for their participation, ACIL Allen do not consider this is enough to overcome the selection bias towards groups with strong feelings against gas.

### *Survey participant feedback*

Out of the 1,886 participants that completed the survey, 391 owner-occupiers (20 per cent) provided optional written feedback. On closer inspection, a number of the participants expressed similar concerns on the survey to those highlighted by ACIL Allen. Examples include:

- Respondent number 1465 – “Survey was too long”
- Respondent number 1439 – “That the survey is too long and would be more accurately answered if there were less questions.”
- Respondent number 2325 – “No information on the cost of converting from gas to electric major oversight”
- Respondent number 307 – “A consideration for me in replacing appliances is the cost. Your survey doesn’t really factor this as a consideration. If cost were no impediment, I would switch to electric soon.”
- Respondent number 808 – “For a survey to be usable it needs to be balanced. Many questions were loaded leading to responses that may not necessarily be appropriate or accurate. Increase options for NA/Not Sure or like answers will assist.”
- Respondent number 806 – “There are too many questions which are black or white, when in reality there should be more “don’t know” or “don’t care” responses. Biased survey design!”

There were also a number of strong views expressed about the environment and gas businesses, which supports ACIL Allen’s findings on the probability of a non-representative sample.

We are concerned that the key issues highlighted by many of the survey participants were not adequately addressed by Evoenergy or its consultants prior to their application in the demand forecast.

### *CIE's interpretation of the survey results*

For the purpose of deriving its Tariff VI forecast, CIE took the Sagacity Research survey responses and converted them into a post model adjustment that was deducted from the base model forecast.

The calculations were based on three questions from the survey that combined participants timing of replacement and the likelihood of switching their appliances against an assigned probability of occurrence.

ACIL Allen expressed concerns that the probabilities used by CIE to estimate the likelihood of switching were not reliable, as the uncertainty associated with participants' responses cannot be objectively measured or quantified.<sup>43</sup> For example, CIE expects each participant to accurately measure the probability of events such as changing appliances, when many participants will only change their appliance when it needs replacing.

### *Survey acceptance*

While we do not disagree with a service provider using a customer survey to inform and support its regulatory proposal, we expect a survey to meet a number of key criteria if it is to be used as a primary input to our decision:

- participants are provided with sufficient information to make informed decisions
- efforts are made to identify and mitigate potential bias to the best extent possible
- stakeholders are engaged on survey design
- key stakeholders support the survey
- the application in the regulatory proposal is reasonable.

A number of stakeholders, including the ECA and CCP24 have raised concerns over the use of the Sagacity survey for demand forecasting.<sup>44</sup>

It is our understanding that Sagacity's primary objective was to better understand customer preferences, and future uncertainty about gas demand. While it might have achieved these objectives, we do not consider the results of this survey adequate for the purpose of demand forecasting.

For the reasons stated above and in line with ACIL Allen's advice, we do not accept the use of the Sagacity Research survey for the purpose of demand forecasting.

---

<sup>43</sup> ACIL Allen, *Review of Evoenergy's gas demand forecasts*, April 2021, p. 8.

<sup>44</sup> CCP24, *Advice to the AER on Evoenergy revised gas network 21 plan for Evoenergy (ActewAGL) ACT, Queanbeyan and Palerang access arrangement July 2021–June 2026*, February 2021, p. 9; Energy Consumers Australia, *Response to Evoenergy and Australian Gas Networks (SA) revised proposals 2021–26*, February 2021, pp. 7–8.

### *Top-down assessment*

ACIL Allen has reviewed the top-down assessment by CORE, and finds that the estimate of impacted households does not appear to be based on data, but rather professional judgement. While CORE's has considerable experience in and understanding of gas markets and networks, the current unique circumstances in the ACT makes it very difficult to predict the trajectory of switching from gas to electricity.

Despite its best estimates, CORE has stated the following in its report:<sup>45</sup>

- "...notes the challenge, for forecasting purposes, in distinguishing between appliance switching or dwelling disconnection..."
- "...notes the uncertainty relating to certain inputs used to derive estimates of future demand..."
- "...used a significant degree of professional judgement in undertaking this assessment..."

We see value in the CORE report as a secondary top-down supporting document, which can provide insight on the direction of future demand. However, we do not accept the results of CORE report as a primary input for the purpose of demand forecasting.

#### **12.5.3.3 AER Alternative Demand Forecast for Tariff VI and Tariff VB**

Given the information before us, including ACIL Allen's advice, we have provided an alternative estimate of demand which is based on a similar methodology to Evoenergy's initial demand forecast. That is, we accept the long-term trend driven base model, and adjustments based on recent EEIS rebate data.

In July 2019, the EEIS introduced a new rebate of up to \$5,000 for upgrading a ducted gas heater to reverse cycle air conditioning, and up to \$2,500 for upgrading a room heater. Based on initial data from the EEIS over the period August 2019 to January 2020, 315 rebates were paid for replacement of ducted gas systems. This was used to estimate an annual rebate volume of 630. CIE also estimated the impact of this to be a reduction of 2.8 per cent of existing ACT residential customer average usage by 2025–26.<sup>46</sup>

In our draft decision, we indicated that this approach has merit, but considered the six-month observation period insufficient to forecast demand seven years into the future. However, we noted that we were open to accepting this type of adjustment in our final decision if longer term data was available for consideration.

---

<sup>45</sup> Evoenergy, *Attachment 8.4 – CORE, Assessment of impact of climate change initiatives*, January 2021, p. 4.

<sup>46</sup> Evoenergy, *Appendix 7.1 – CIE, Final Report Forecast demand for natural gas*, 19 June 2020, pp. 65 and 67.

Subsequently, Evoenergy provided 19 months of EEIS rebate data for consideration.<sup>47</sup> Over the period provided, rebates paid under this scheme have risen to 1,157 which is 842 higher than CIE’s initial analysis.

ACIL Allen considers this additional data sufficient for the purpose of demand forecasting under the circumstances, and makes an allowance for its growth over the next regulatory period. While this is a simplistic approach, based on only 19 months of data, it is based on actual behaviour and does allow for an increase in the take up of the scheme (or other potential new schemes) over the 2021–26 period. ACIL Allen projected the number of rebates to increase from 774 in 2020–21 to 1,116 in 2025–26, and recommended the post model adjustments to the average usage of existing ACT residential connections as set out in table 12.5.

**Table 12.5 ACIL Allen adjustment to average usage by existing ACT residential connections**

Financial year ending 30 June	Adjustment (%)
2021	-0.7
2022	-2.2
2023	-3.9
2024	-5.7
2025	-7.7
2026	-9.8

Source: ACIL Allen, *Review of Evoenergy’s gas demand forecasts*, April 2021, p. 12.

In addition, ACIL Allen made post model adjustments to abolished, zero consuming and suspended connections using a similar approach to CIE’s initial forecast.<sup>48</sup>

**Table 12.6 ACIL Allen adjustment to abolished, zero consuming and suspended connections**

Financial year ending 30 June	Adjustment (no)
Abolishment	-1,035
Zero consuming	-4,653
Suspended (temp disconnections)	-779

Source: AER, *Review of Evoenergy’s gas demand forecasts model prepared by ACIL Allen*, April 2021, Confidential

<sup>47</sup> Evoenergy, *Response to IR023*, 15 March 2021.

<sup>48</sup> ACIL Allen, *Review of Evoenergy’s gas demand forecasts*, April 2021, p. 10.

Based on CIE’s review of ACIL Allen’s proposed adjustment to its demand forecasting model, ACIL Allen have confirmed the following demand forecast for the 2021–26.<sup>49</sup>

**Table 12.7 AER demand forecasts for Tariff VI and Tariff VB for the 2021–26 access arrangement period**

	2021–22	2022–23	2023–24	2024–25	2025–26
Residential and Commercial Connections <sup>a</sup>	149,268	149,271	148,614	147,485	146,339
Total Residential and Commercial Demand (TJ)	6,275	6,115	5,926	5,720	5,522
Volume Boundary Connections	13	13	13	13	13
Total Volume Boundary Demand (TJ)	4	4	4	4	4

Source: AER, *Review of Evoenergy’s gas demand forecasts model prepared by ACIL Allen*, April 2021, Confidential

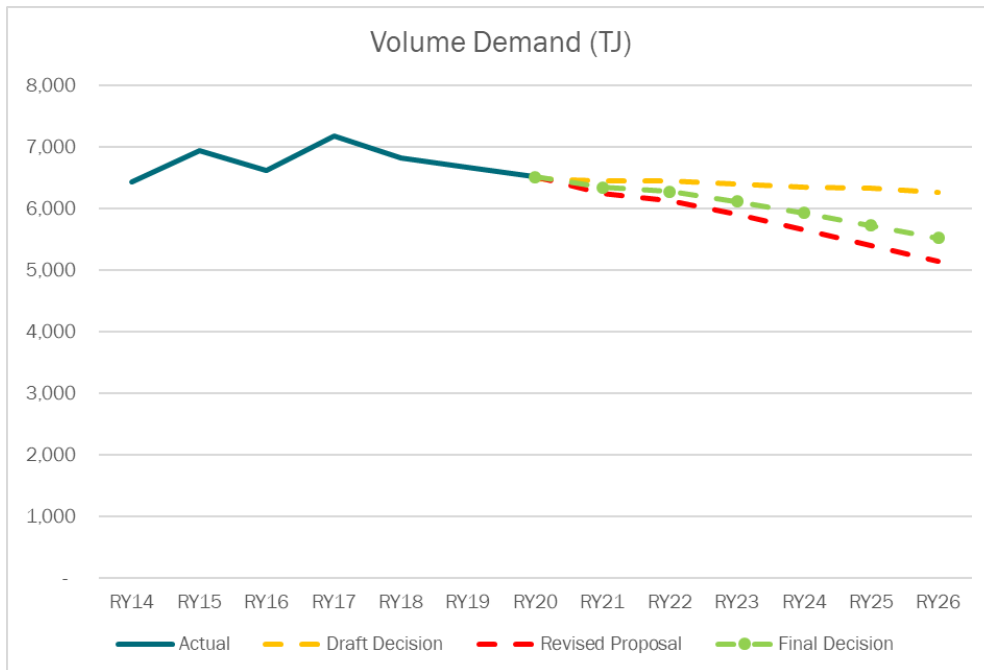
Notes: a. Average financial year numbers.

Figures 12.1 and 12.2 show a comparison of our final decision and Evoenergy’s revised proposal:

---

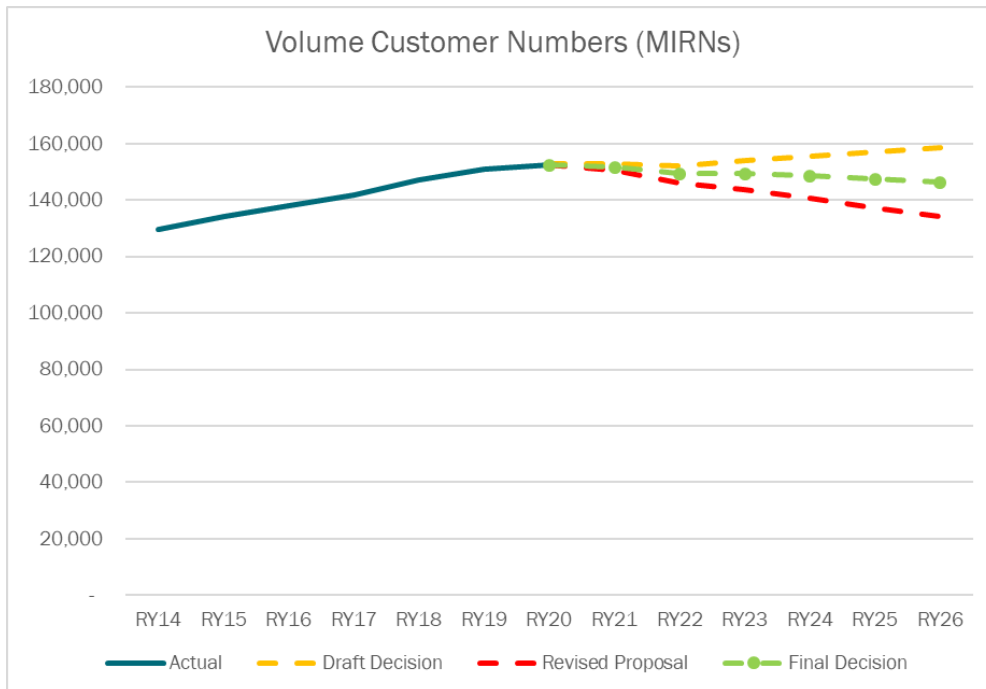
<sup>49</sup> CIE, *AER gas demand forecast review*, April 2021

**Figure 12.1 AER final decision on Evoenergy’s revised forecast demand (Tariff VI and Tariff VB) for the 2021–26 period**



Source: AER analysis. Includes commercial, NSW residential and volume boundary demand. 2013–14 to 2019–20 years represents non-weather corrected actuals.

**Figure 12.2 AER’s final decision on Evoenergy’s revised forecast customer numbers (Tariff VI and Tariff VB) for the 2021–26 period**



Source: AER analysis. Includes commercial, NSW residential and volume boundary numbers.

On balance, we consider the forecasts proposed by ACIL Allen, represent a preferable forecast of future demand than post model adjustments proposed by Evoenergy in its revised proposal. Consequently, we consider our alternative forecast has been derived on a reasonable basis, and is the best possible forecast. However, we note the significant uncertainty in the trajectory of natural gas usage in the ACT, and respond to this in the next section.

Given the unique situation in the ACT, we are open to Evoenergy submitting an application mid-period to vary its 2021–26 access arrangement if the trajectory of its demand significant differs to our final decision.<sup>50</sup> This is in line with submissions from ECA and CCP24 to allow for the potential revisit of Evoenergy’s demand forecast.<sup>51</sup>

#### 12.5.3.4 Demand risk consideration

A key concern we share with many stakeholders is that, given the changing policy environment in the ACT, there is a high degree of uncertainty in the way customers might use natural gas in the 2021–26 period.

<sup>50</sup> NGR r.65.

<sup>51</sup> CCP24, *Advice to the AER on Evoenergy revised gas network 21 plan for Evoenergy (ActewAGL) ACT, Queanbeyan and Palerang access arrangement July 2021–June 2026*, February 2021, p. 35; Energy Consumers Australia, *Response to Evoenergy and Australian Gas Networks (SA) revised proposals 2021–26*, February 2021, p. 7.



Evoenergy's tariffs are derived using a weighted average price cap. That is, the total amount of revenue set by this determination is divided by the amount of gas forecast to be delivered in the period to arrive at a price for customers for use of the network. Consequently, an under-estimation of demand will result in a higher revenue collection for Evoenergy, while an over-estimation will result in a lower revenue collection. Under-estimation places the forecast demand risk on consumers via higher consumption charges. Conversely, an over-estimation of demand will result in a lower revenue collection for Evoenergy and places the forecast demand risk on Evoenergy via lower consumption charges.

Evoenergy and its consultants have reiterated that, given the current direction of ACT Government policy, post model adjustments are required to provide a better estimate of future demand. We also acknowledge that the use of post model adjustments are reasonable given the unique circumstance in the ACT. However, we do not accept Evoenergy's post model adjustments are better in terms of accuracy or allocation of demand risk to consumers compared to our alternative estimate.

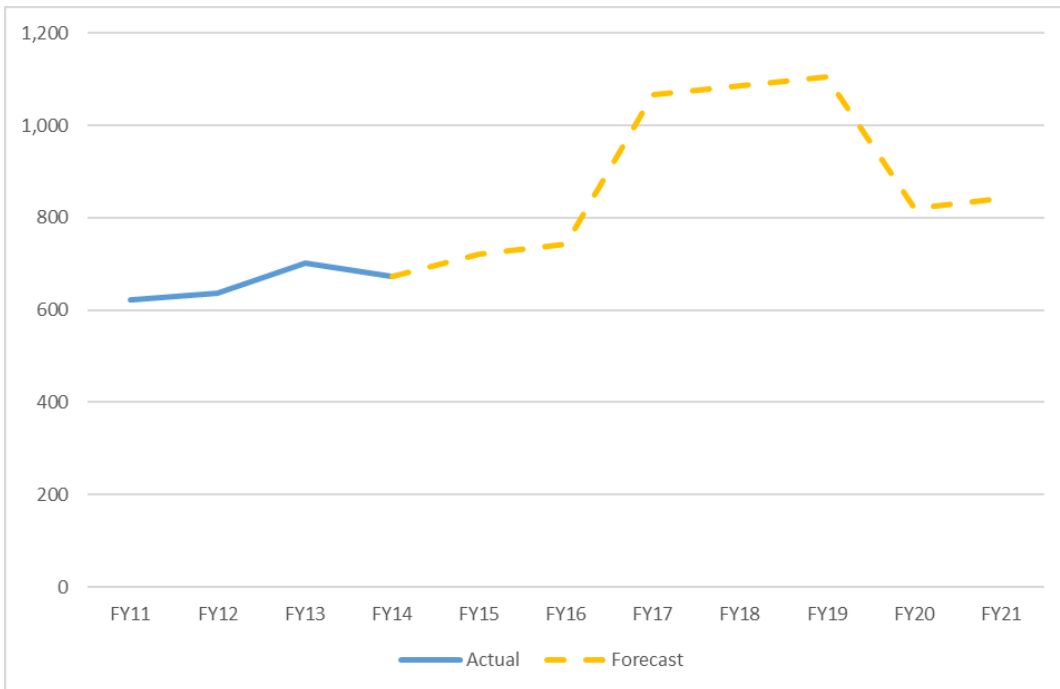
We considered the reasonableness of our demand forecast in the context of the following:

- The impact of ACT Asbestos Response Taskforce (also known as Mr Fluffy home demolition scheme) has on demand forecasting
- The impact to customer behaviours given the recent electricity price increase proposed by Evoenergy for 2021–22
- The longevity of the existing EEIS rebate scheme and the impact of future schemes
- COVID-19 and the path to normality.

### *Mr Fluffy homes*

In its 2016–21 access arrangement proposal, Evoenergy proposed a disconnection adjustment beyond its historical trend as a result of the Mr Fluffy home demolition scheme. Our 2016–21 final decision accepted Evoenergy's proposal to remove over 900 connections across the 2016–2019 years in its demand forecast. Figure 12.3 shows Evoenergy proposed disconnections at the time.

**Figure 12.3 Evoenergy proposed disconnections in its 2016–21 Access Arrangement**



Source: AER analysis based on Evoenergy Access Arrangement 2016-21, Appendix 3.02 Core Energy demand forecast model, June 2015, Confidential

While the timing and magnitude differs somewhat, we have observed a similar trend in the actual abolishments in Evoenergy’s current proposal for the 2017–2020 years.

The consequences of the Mr Fluffy home demolition scheme was a one-off removal of older homes with inefficient gas appliances, its inclusion in the historical trend will likely skew the forecast results downwards.

While it might be possible to remove these connections from the base model and adjust for the historical trend, we have chosen not to, recognising there will be some inherent overs and unders in the existing forecast methodology.

### *Cross-price elasticity*

In March 2021, Evoenergy submitted its 2021–2022 network pricing proposal for its ACT electricity network.<sup>52</sup> Evoenergy is proposing a 36 per cent increase in its network and metering charges for an average residential customer in 2021–2022.

While CIE considered cross-price elasticity of demand in its initial report, its conclusion at the time was that electricity prices were not statistically significant across most of the

<sup>52</sup> Evoenergy, *Network pricing proposal 2021/22*, March 2021

models, and accordingly omitted cross-price elasticity adjustments from the base model.<sup>53</sup>

Given the materiality of the price changes, there is a possibility that customers' willingness to switch from gas to electric appliance will be impacted at some level.

While it might be possible to introduce a cross-price elasticity adjustment to the base model, we have chosen not to, recognising its reliability will be questionable given the unique circumstances in the ACT.

### *EEIS schemes*

As indicated above, in using the EEIS rebate data, we are assuming the associated demand impacts will remain in line with the short-term upward trajectory for the next five years. Under normal circumstances, we would not have adopted such an assumption, as a rebate or scheme may have a limited effective life.

However, given the ACT Government's policy direction, using short-term data from recent schemes as a proxy for potential future schemes is a reasonable neutral assumption. In other words, we are assuming that in the next five years, even if the effectiveness of existing schemes plateau, new schemes and rebates may be introduced by the ACT Government to maintain a similar trajectory.

We considered the inclusion of future EEIS schemes as a more tangible alternative, including the recently announced Sustainable Household Scheme which provides ACT households access to zero interest loans between \$2,000 to \$15,000 to reduce emissions and their energy costs. However, Evoenergy has not provided sufficient information on the likely customer numbers to be impacted by the new scheme, or the longevity of the existing schemes for our assessment.

### *COVID-19*

CIE has updated its demand forecast with 2019–2020 actual demand and customer data as requested in our draft decision.<sup>54</sup>

In the 2019–2020, total Tariff V usage was 6.52 PJ, which is 0.9 per cent higher than the estimate in its previous forecast. The higher usage can be explained by colder weather and lower prices than has been assumed in its previous forecast.

Weather-normalised usage was 0.5 per cent higher than has been estimated for residential connections, but 4.7 per cent lower for non-residential connections. CIE noted that the difference is probably due to an increase in the number of people working from home during the last few months of the financial year in response to the COVID-19 pandemic.

---

<sup>53</sup> Evoenergy, *Appendix 7.1 – CIE, Final Report Forecast demand for natural gas*, June 2020, p. 57.

<sup>54</sup> Evoenergy, *Attachment 8.1 – CIE, Update to forecast demand report*, January 2021, p. 4

As Evoenergy gas demand is predominantly residential driven, a prolonged impact of COVID-19 could have an upside impact to demand. While it might be possible to include a path to normality in the forecast, we have chosen not to, recognising that a considerable amount of uncertainty remains.

### *Conclusion*

While we acknowledge that the past is not always the best representation of the future, not all elements of the demand forecast are expected to move in one direction.

In making our decision, we have provided a number of provisions for demand to reduce further under the latest ACT Government policy direction. We consider any further adjustments will not be an appropriate allocation of demand risk to consumers.

However, we are open to Evoenergy submitting an application mid-period to vary its 2021–26 access arrangement if the trajectory of its demand is substantially different to our final decision.<sup>55</sup> This is in line with submissions from ECA and CCP24 to allow for the potential revisit of Evoenergy’s demand forecast.<sup>56</sup> We would expect Evoenergy to engage with its customers if actual demand turns out to be materially higher than our final decision by mid-period.

## **12.5.4 Demand forecasts for Tariff D**

In its revised proposal, Evoenergy has applied post model adjustments in its base model for Tariff D based on the latest *P&G Agreement* that states:

“Ensure all new Government buildings and facilities are fossil-fuel-gas free, including new leases. All retrofitting in Government buildings and facilities will have a goal of net-zero emissions post retrofit.”<sup>57</sup>

We acknowledge that a post-model adjustment to reduce demand for Tariff D is not unreasonable given the latest *P&G Agreement*, and that a number of large customers are considered to be government affiliated. While we have concerns over the linear progression approach to some of the demand reduction, there is no evidence to indicate that the rate of reduction to be either front-loaded or back-loaded. Thus a linear approach is not unreasonable under the circumstances.

Based on the information before us, we are satisfied with Evoenergy’s forecast of Tariff D numbers and demand are consistent with rule 74(2) of the NGR.

---

<sup>55</sup> NGR, r. 65.

<sup>56</sup> CCP24, *Advice to the AER on Evoenergy revised gas network 21 plan for Evoenergy (ActewAGL) ACT, Queanbeyan and Palerang access arrangement July 2021–June 2026*, February 2021, p. 35; Energy Consumers Australia, *Response to Evoenergy and Australian Gas Networks (SA) revised proposals 2021–26*, February 2021, p. 9.

<sup>57</sup> ACT Government, *Parliamentary and Governing Agreement*, 10<sup>th</sup> Legislative Assembly for the Australian Capital Territory, November 2020.

## Shortened forms

Shortened form	Extended form
ACIL Allen	ACIL Allen Consulting Pty Ltd
ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ANU	Australian National University
capex	capital expenditure
CCP / CCP24	Consumer Challenge Panel, sub-panel 24
CORE	Core Energy and Resources
CIE	The Centre for International Economics
COVID-19	2019 novel coronavirus disease
E2G	Electricity-to-gas
EEIS	Energy Efficiency Improvement Scheme
ECA	Energy Consumers Australia
GJ	Gigajoule
G2E	Gas-to-electricity
MIRN	Meter installation registration number
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NSW	New South Wales
opex	operating expenditure
P&G	Parliamentary and Governing
PJ	Petajoule
RIN	Regulatory Information Notice
TJ	Terajoule