



---

# **AusNet Gas Services Pty Ltd**

## **Gas Access Arrangement Review 2018–2022**

### **Revised Access Arrangement Proposal**

#### **Appendix 2A: Update of Demand Forecasts**

**Submitted: 11 August 2017**



8 August 2017

Nick Cimmins, Finance Data Analytics Manager, AusNet Services  
Level 32, 2 Southbank Boulevard  
Southbank Victoria 3006 Australia

Dear Nick

## UPDATE OF 2018-2022 GAAR CONSUMPTION AND CUSTOMER FORECASTS

In 2016, AusNet Services commissioned The CIE to provide forecasts of demand for its Victoria gas distribution network for 2018 to 2022. AusNet Services has now commissioned The CIE to update those forecasts using the most recent data available for customer numbers, consumption and driver variables.

This briefing sets out the updates that have been made to the forecasting models and compares the results of the updated models to the previous models.

### *Updates to the 2016 models*

We have made updates to the forecasting models in six main ways:

- 1 the starting point for customer number projections has been updated based on actual customer numbers and disconnections for 2016,
- 2 projections of actual customer numbers for 2017 and onwards have been updated using the dwelling approvals, commencements and completions data available from the ABS for the 2016/17 financial year to-date and Census 2016,
- 3 the starting point for usage per customer forecasts has been updated from 2016 to 2017, and
- 4 forecasts of usage per customer have been updated to account for the 2017 observations of gas prices and weather (using the Effective Degree Days metric),
- 5 post-modelling adjustments for appliance switching have been updated using AEMO's projections of the impact of appliance switching from the 2016 National Gas Forecasting Report (NGFR), and
- 6 projections of Tariff D usage have been updated using AEMO's projections of Industrial gas demand in Victoria from the *National Gas Forecasting Report 2016 (NGFR 2016)*.<sup>1</sup>

---

<sup>1</sup> See AEMO, 2016, *National Gas Forecasting Report*, available at: [https://www.aemo.com.au/-/media/Files/Gas/National\\_Planning\\_and\\_Forecasting/NGFR/2016/2016-National-Gas-Forecasting-Report-NGFR-Final.pdf](https://www.aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/NGFR/2016/2016-National-Gas-Forecasting-Report-NGFR-Final.pdf)

#### SYDNEY

GPO Box 397  
Sydney NSW  
Australia 2001

T +61 2 9250 0800  
F +61 2 9250 0888  
E [ciesyd@TheCIE.com.au](mailto:ciesyd@TheCIE.com.au)

Suite 1, Level 16  
1 York Street  
Sydney NSW 2000

#### CANBERRA

GPO Box 2203  
Canberra ACT  
Australia 2601

T +61 2 6245 7800  
F +61 2 6245 7888  
E [cie@TheCIE.com.au](mailto:cie@TheCIE.com.au)

Ground Floor  
11 Lancaster Place  
Canberra Airport ACT 2609

## *Differences between updated and previous forecasts*

### *Residential and commercial customer numbers*

The updated forecasts of customer numbers are higher than previous forecasts. This reflects two main changes to our modelling:

- the starting point for the forecasts has been updated, with actual total residential customer numbers in 2016 of 649 518 being 0.6 per cent higher than our previous projection,
- the starting point of penetration rates is estimated more accurately by replacing projections of occupied private dwellings in 2016 with Census 2016 data of occupied private dwellings by postcode/LGA, and
- projections of actual customer numbers for 2017 and onwards have been updated using the dwelling approvals, commencements and completions data available from the ABS for the 2016/17 financial year to-date.

### **1 Difference between previous and updated forecasts**

Class	2015	2016	2017	2018	2019	2020	2021	2022
	Number	Number	Number	Number	Number	Number	Number	Number
Residential	0	3 880	5 568	7 180	8 844	10 567	12 356	13 720
Commercial	0	- 22	- 191	- 175	- 157	- 139	- 120	- 105

Note: Positive differences indicate that the updated forecasts are higher than the previous forecasts.

Source: CIE.

Two additional postcodes had customers in 2017. These were 3003 (Melbourne) and 3358 (Winter Valley). Customer numbers for these postcodes have been forecast using the rate of growth in Occupied Private Dwellings. The assumed growth rate is based on the Victoria in Future (2016) forecasts of occupied dwellings for each LGA (Melbourne and Ballarat for 3003 and 3358 respectively). Postcode 3003 (Melbourne) is in the Central AusNet Services network area and 3358 is in the West area.

### *Residential and commercial usage*

The updated forecasts of residential usage are higher than previous forecasts while forecasts of commercial usage are lower. This mainly reflects

- a lower starting point for residential usage,
- a higher starting point for commercial usage,
- colder actual weather conditions than projected, with actual EDD in 2016 of 1650 compared to projected EDD of 1607
- a downward revision to the estimated EDD trend (see Chart 5 below) from -8.4 EDD/year to -7.2 EDD/year

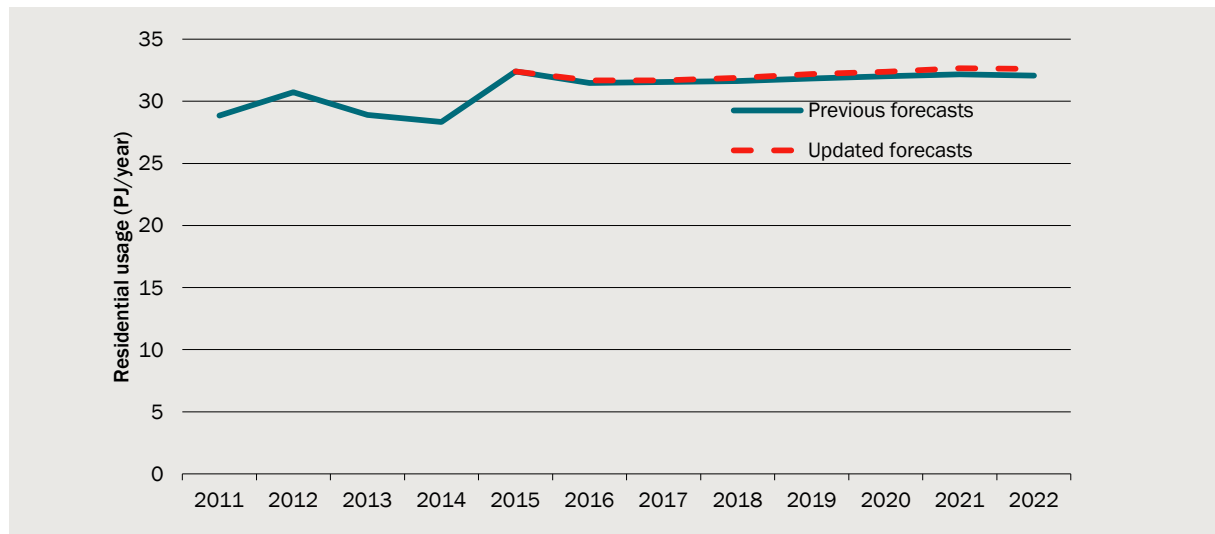
Table 2 and charts 3 and 4 show the differences between the forecast outcomes. Chart 5 shows the EDD trend estimated with the addition of the 2016 EDD data point.

## 2 Comparison of updated and previous forecasts of residential and commercial usage

	2015	2016	2017	2018	2019	2020	2021	2022
	GJ	GJ	GJ	GJ	GJ	GJ	GJ	GJ
<b>Updated forecasts</b>								
Residential	32.40	31.69	31.67	31.89	32.20	32.38	32.65	32.59
Commercial	6.22	6.13	6.06	6.08	6.19	6.17	6.26	6.32
<b>Previous forecasts</b>								
Residential	32.40	31.47	31.54	31.62	31.82	32.01	32.16	32.06
Commercial	6.22	6.29	6.24	6.20	6.28	6.36	6.40	6.46
<b>Difference (Per cent)</b>								
Residential	0.0	0.7	0.4	0.9	1.2	1.1	1.5	1.7
Commercial	0.0	-2.5	-2.8	-1.9	-1.5	-2.9	-2.2	-2.2

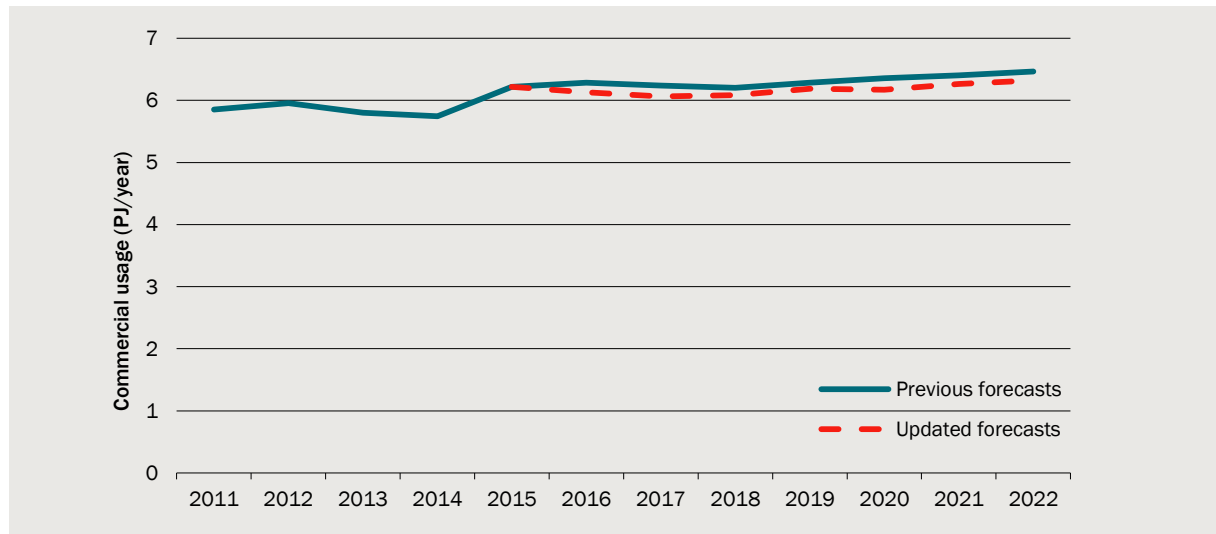
Source: CIE.

## 3 Comparison of forecasts of residential usage



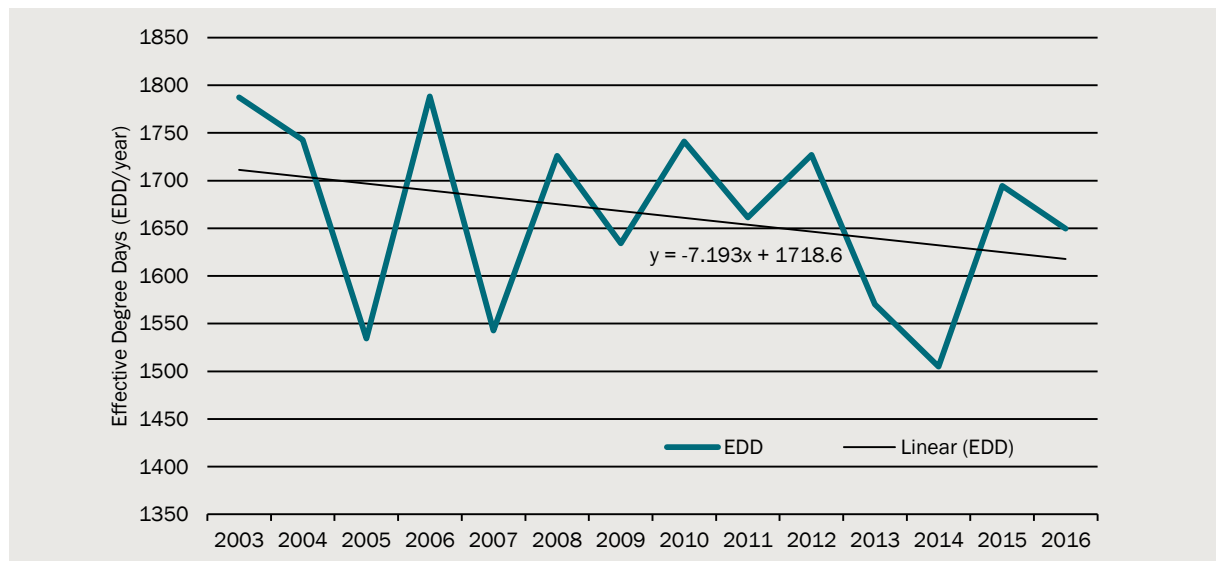
Data source: CIE.

#### 4 Comparison of forecasts for commercial usage



Data source: CIE

#### 5 Forecast of Effective Degree Days

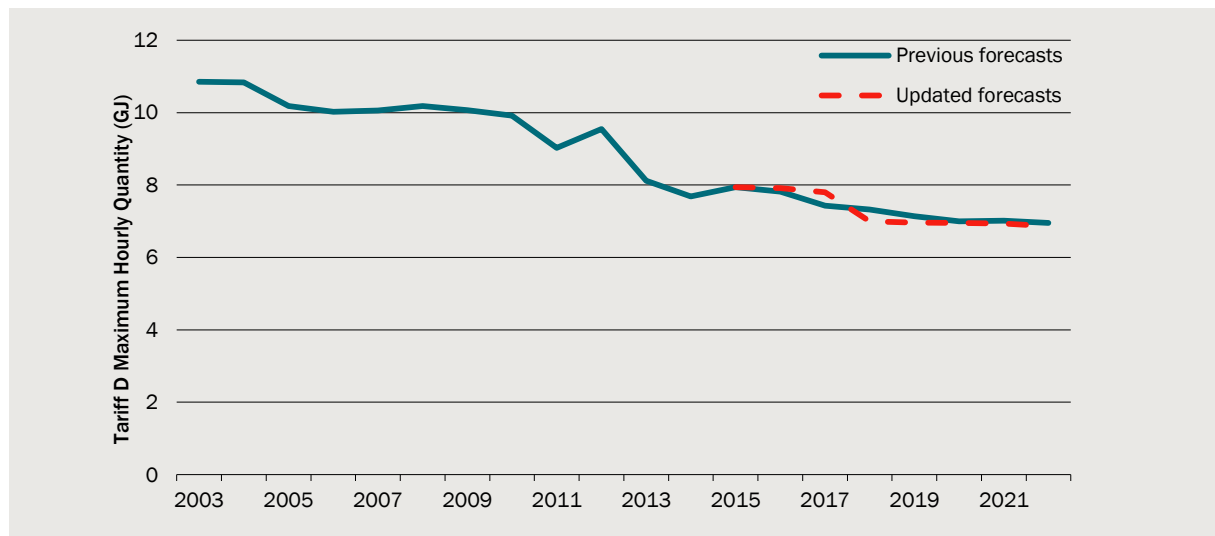


Data source: CIE.

#### *Tariff D*

Forecasts of Tariff D Maximum Hourly Quantity (MHQ) have been also updated using actual tariff D MHQ for 2016. Additionally, the forecasts for 2017 and onwards have been updated using AEMO's projections of system-level industrial demand from *NGFR 2016*. Tariff D MHQ is forecast to remain relatively constant in most years, except for a significant fall of approximately 1 gigajoule in 2018.

## 6 Forecasts of Tariff D Maximum Hourly Quantity



Data source: CIE.

### *Appliance switching adjustment*

Our previous forecasts included a post-modelling adjustment to account for the increase in appliance switching from gas to electricity. This adjustment was based on AEMO's *NGFR 2015*.<sup>2</sup>

We have updated the appliance switching adjustment using the *NGFR 2016* projected impact of fuel switching. The adjustment made in *NGFR 2016* is relatively smaller than the adjustment made in *NGFR 2015*. *NGFR 2016* states<sup>3</sup> that:

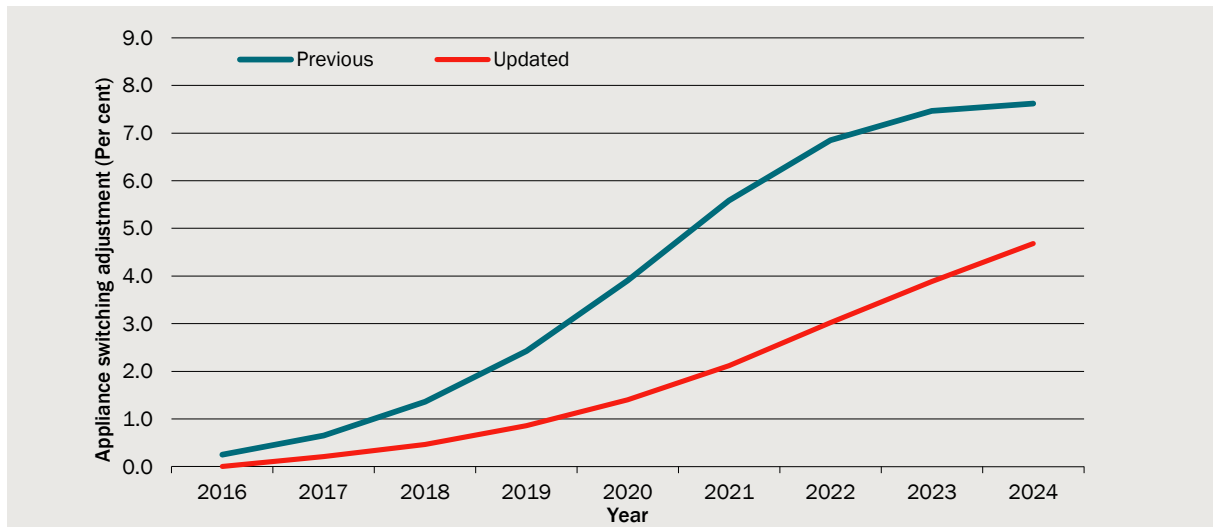
“forecast appliance switching rates are lower than the forecasts in the 2015 NGFR as a result of transferring the previously reported fuel switching impact to energy efficiency savings associated with conversion of gas storage to gas instantaneous hot water units.”

Chart 7 compares the appliance switching adjustment applied to the updated forecasts to the adjustment applied to the previous forecasts. Note that the base year differs between each adjustment from being a 0 per cent adjustment in 2016 (*NGFR 2015*) to 2017 (*NGFR 2016*).

<sup>2</sup> AEMO, 2015, *National Gas Forecasting Report*, available at: <https://www.aemo.com.au/media/Files/Gas/Planning/Reports/NGFR/2015/2015%20National%20Gas%20Forecasting%20Report.pdf>

<sup>3</sup> See AEMO, 2016, *National Gas Forecasting Report*, p.34.

## 7 Comparison of updated and previous appliance switching adjustment

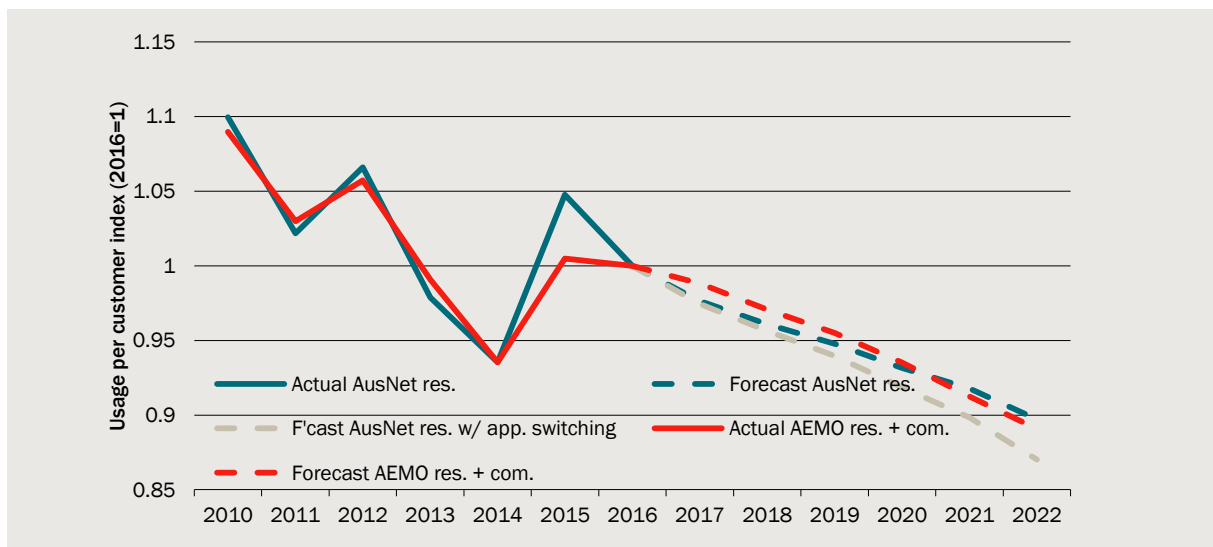


Note: The appliance switching adjustment is shown as a proportion of total residential and commercial demand.

Data source: CIE.

Our forecasts of AusNet consumption per customer are compared to the *NGFR 2016* forecasts of residential and commercial usage per customer in chart 8. The incorporation of this post-modelling adjustment to account for appliance switching produces forecasts of consumption per customer with a trend that aligns more closely to AEMO's forecasts. The trend rate of decline in usage per customer of usage per customer including the adjustment (shown in grey) is more similar to AEMO's forecast (red) than the forecast without adjustment (teal). Note that the fall in usage from 2016 to 2017 is mainly due to weather normalisation. During the GAAR forecasting period (2017–2022) the trend in the unadjusted forecasts is significantly weaker than the trend in *NGFR 2016* forecasts.

## 8 Comparison of AusNet and NGFR 2016 forecasts of consumption per customer

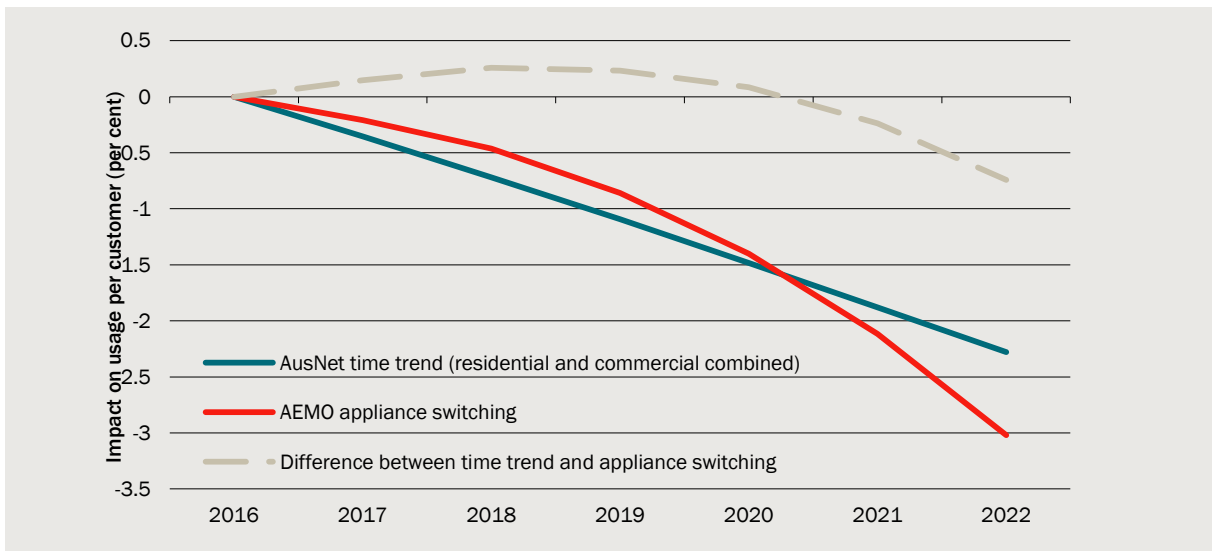


Data source: CIE, AEMO NGFR 2016.

Accounting for appliance switching with this post-modelling adjustment allows the forecasts to account for the acceleration in appliance switching over the forecast period, which the time trend in our model of usage per customer cannot account for. Chart 9 compares the magnitude of the appliance switching adjustment and estimated time trend in terms of per cent impact on forecast

usage per customer. It shows that the time trend does not account for the non-linearity in AEMO’s projection of appliance switching over the forecast period. This suggests that an appliance switching adjustment will better account for the most recent information available from *NGFR 2016* about the future impact of appliance switching.

**9 Comparison of appliance switching adjustment and estimated time trend**



Data source: CIE, AEMO NGFR 2016.

Regards,

Phil Manners  
Director