Zincara

From strategy to action

Review of AGN Unaccounted for Gas
Public Summary

Prepared for

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Unaccounted for Gas

Public Summary

Introduction

In July 2020, Australian Gas Network (AGN) submitted its revised Access Arrangement (AA) for its gas distribution network in South Australia. The AER engaged Zincara P/L (Zincara) to assist in the review of the Unaccounted for Gas (UAFG).

Before preparing this report, Zincara has examined a number of confidential documents provided by AGN. For guidance on how to assess the reasonableness of AGN's UAFG, Zincara has applied Part 9 Div 2 and Div 7 of the National Gas Rules.

AGN's UAFG Proposal

UAFG is the difference between the gas injected into the distribution system at the custody transfer meter and the gas withdrawn by the customers at the customer's meters. The annual cost of the UAFG[1] is calculated by multiplying the annual volume of UAFG by the cost of gas purchased. In SA, AGN is responsible for the supply of gas for UAFG purposes.

AGN proposes to incorporate renewable/carbon neutral gas to provide up to 20% of the total volume required. 87% of customers that had participated in AGN's customer and stakeholder engagement supported the proposal with 84% of the customers also supporting an increase of $1.50-$5.50 in their annual gas bill.

For the next AA period, AGN proposes that the forecast annual volume of UAFG should be based on the actual data for the current AA period. The forecast annual UAFG volume is calculated by the average of three years data, 2015/16, 2016/17 and 2017/18. AGN also proposes` the forecast annual UAFG volume should be constant for the five years period in next AA period.

AGN has estimated the average price of gas for the next AA period based on current market conditions. AGN expects to be able to replace the estimated market price by the actual price after it has negotiated the price with a third-party gas supplier. It expects to finalise this before the AER's draft decision.

This paper focuses on the reasonableness of the UAFG volume only.

[1] AGNSA_AGIG_Final Plan_20200701_Public

Analysis

The factors that contribute to the UAFG volume can be consolidated into two categories: measurement errors and fugitive emissions.

Measurement error incorporates a number of factors such as accuracy of meters, timing of meter reading, billing error, theft of gas etc. Fugitive emissions are mainly from leaks in the high pressure, medium pressure and low pressure networks. It is difficult to accurately estimate how much each factor contributes to the UAFG volume which makes it difficult to adopt a bottom up approach to forecasting UAFG volumes. Therefore, AGN's approach of using actual UAFG volumes to forecast the annual UAFG volumes is reasonable.

The key issues arising from adopting this top down approach are:

- what are the representative years;
- how many years data should be used; and
- are there future changes in the UAFG factors that can affect the forecast UAFG.

AGN had provided UAFG volumes for the period 2013/14 to 2019/20.

The annual UAFG volumes for the period, 2013/14 to 2016/17 show a sharp decline year on year, varying from 12% to 28%. A major contributor to the decline in UAFG is AGN's low pressure and medium pressure mains replacement program which reduces the number of leaks in the network. Priority to areas where the networks are in the worst conditions will have achieved significant reduction in UAFG volumes. It is therefore not appropriate to use any of the UAFG data in this period, given the rapid decline in UAFG volume year on year.

The annual UAFG volumes for the second period 2016/17 to 2019/20 only changes by 2% to 3% except for 2018/19 to 2019/20 which changes by 10%. This plateauing of UAFG volumes in this period could be due to leaks in the low pressure and medium pressure networks not playing such a major part in the overall UAFG volumes.

As the UAFG volumes have plateaued in the 2016/17 to 2019/20 period, it should be more reflective of future UAFG volumes. However, there are a number of factors worth noting. The 2019/20 data has not been agreed upon between AGN and its gas supplier and as such the data is deemed "unsettled[2]". AGN classified this data has estimate and not actual. The data for 2018/19 is also unsettled data but it is noted that it is has passed its settlement period of 425 days. 2017/18 UAFG volume is still not settled but AGN advised that it is currently undergoing settlement.

AGN proposed that the forecast annual UAFG volume be calculated by the average of three years data, 2015/16, 2016/17 and 2017/18. 2015/16 is not considered appropriate for the reasons stated above. To include 2018/19 data as the third year would mean that unsettled data has been used.

As such, a comparison between calculating the forecast UAFG using two years data (2016/17 and 2017/18) and three years data (2016/17, 2017/18 and 2018/19) was carried out and

[2] Retail Market Procedures (South Australia) Section 8.6 Allocation, referring to the definition of 'settlement period' as 425 days from the end of the each period.

found that there is only 1% difference between the two approaches. It is therefore recommended that the two years data should be used for forecasting UAFG.

In relation to the profile for the UAFG for the next AA period, it is difficult to forecast with any degree of certainty the extent of any decline in UAFG due to the vagaries of calculating the benefit of any program focusing on improving UAFG. A flat profile for the five year period is reasonable.

It is also not expected that any future changes to the UAFG factors could offset the UAFG improvements achieved in the current AA period for the following reasons:

- The network expansion is constructed using industry standard material of steel and polyethylene (PE) pipes.
- The mains replacement program will continue reducing leaks
- Meters are purchased to perform within a $\pm 2\%$[3] accuracy which means that the measured volume of gas should not have a material bias.

[3] Gas Metering Code Clause 2.6.1