Attachment 9.3

Response to Draft Decision:
Inflation

2016/17 to 2020/21 Access Arrangement Information
Response to Draft Decision

Australian Gas Networks

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1 Response to Draft Decision on Inflation

1.1 Introduction

In its Initial Access Arrangement (AA) Proposal, AGN had proposed the current Australian Energy Regulator (AER) method for forecasting inflation, which resulted in a forecast of inflation of 2.5%, subject to a review of the approach for forecasting inflation if current market conditions persisted. The low inflation environment has indeed persisted, and AGN has therefore, as advised, reviewed and altered its approach to inflation in order to procure a more accurate inflation forecast.

AGN's Revised AA Proposal is to adopt a market-based forecast of inflation, which forecast is derived from the difference between yields on nominal and inflation indexed commonwealth government securities (CGS). The AER had previously used the Fisher equation method to forecast inflation, but changed from this approach in 2008 as a result of the scarcity of CGS at that time. A scarcity of CGS no longer exists, therefore enabling a reversion to the Fisher equation method.

AGN considers a reversion to the Fisher equation is warranted as it provides for a more accurate forecast of inflation. This outcome is consistent with the National Gas Law (NGL) because it is:

- consistent with the requirement in Section 24(2) that a service provider be provided with a reasonable opportunity to recover at least efficient costs; and
- consistent with the National Gas Objective (NGO) as the above will better promote the long-term interests of consumers.

1.2 AER Draft Decision

The AER's Draft Decision proposed the continued use of its approach to forecasting inflation, which approach relies on a combination of the Reserve Bank of Australia's (RBA's) short term forecast and the mid-point of the longer term target range of 2% to 3%. It also stated that the AER would consider a change to inflation forecasting if it was "*endorsed by stakeholders as part of a comprehensive consultation process*", but that it was satisfied that its current approach was the appropriate approach for this determination. The AER Draft Decision forecast of inflation is 2.5%.

1.3 AGN Response to the Draft Decision

As advised in its Initial AA Proposal, AGN has reviewed its approach to forecasting inflation in light of the continued low actual inflation environment. The AER forecast inflation of 2.5% is materially higher than current actual inflation, with most recent September quarter Consumer Price Index (CPI) delivering an annual inflation of 1.5%.[1] AGN has therefore adopted a methodology that produces a more accurate forecast of inflation to ensure that AGN has a reasonable opportunity to recover its efficient costs.

Under the AER's current practice, forecast inflation plays a role in determining the amount to be deducted from the annual revenue requirement for indexation of the capital base. If the forecast of inflation is too high – that is, if actual inflation turns out to be materially lower than had been forecast – this deduction will be too large. This will lead to under-recovery of costs, since the amounts deducted from the annual revenue requirement will be larger than the amount by which the capital base is increased by actual inflation at the end of an AA period.

The forecast of inflation also bears an interrelationship with the allowed rate of return. The reason why there needs to be a deduction from the annual revenue requirement for indexation of the capital base is because,

[1] ABS 2015, "*Consumer Price Index Catalogue Number 6401.0*", September 2015, pg. 1.

under the AER's current practice, a nominal rate of return is used[2] in combination with an indexed capital base. Without the deduction, service providers would be compensated twice for the effects of inflation – once through the rate of return, and again through indexation of the capital base. It is therefore important that the forecast of inflation used to calculate the revenue deduction be:

- accurate (i.e. as close as possible to actual inflation, which is used to roll forward the capital base at the end of an AA period); and
- consistent with the implied forecast of inflation in the nominal rate of return.

1.3.1 Shortcomings of the AER Method in Current Market Conditions

In the Draft Decision, the AER adopted an inflation forecast of 2.5% for the next (2016/17 to 2020/21) AA period. This is based on the methodology that has been adopted by the AER since 2008, which involves:[3]

- for the first two years of the next AA period, taking the mid-point of the RBA *forecast* range for CPI inflation. For these two years, the RBA has published a forecast range of 2% to 3%, with a mid-point of 2.5%;[4] and
- for the following eight years, taking the mid-point of the RBA *target* range for CPI inflation, being 2.5% (as this range is 2% to 3%).

As RBA forecasts are only used for the first two years of the next AA period, the inflation forecast derived using this methodology is primarily determined by the mid-point of the RBA's target range. This approach is reasonable where investors expect monetary policy to return inflation to—and maintain it at—the mid-point of the RBA's target range.

In its Initial AA Proposal, AGN had adopted the current AER method for forecasting inflation, as described above, however indicated that it intended to adopt a market based estimate of inflation if the June 2015 quarter inflation outcome did not materially increase from the March 2015 quarter inflation outcome (which it did not).

Recent market evidence demonstrates that the AER's current forecasting method is currently over-estimating inflation. In particular, the most recent ABS data shows that actual CPI inflation is well below the RBA's forecasts and target range – year-end CPI inflation for the June and September 2015 quarters was 1.5% per annum, while for the March quarter it was 1.3%.

TABLE 1.1: COMPARISON OF ACTUAL INFLATION WITH RBA AND AER FORECASTS

Year Ended	Actual Inflation	RBA Forecast (as at May of the prior year)	Forecast Based on AER Method (as at May of the prior year)
June 2013	2.4%	2% to 3%	2.5%
June 2014	3.0%	2% to 3%	2.5%
June 2015	1.5%	2.5% to 3.5%	2.55%

With RBA cash rates at record low levels and with near term rate cuts priced into financial markets, the RBA cash rate is close to the 'zero lower bound', with the result that the potential for monetary policy to stimulate economic activity and return inflation to the RBA's target range for CPI inflation is diminished.

The consequence of this is that:

2 National Gas Rule 87(4)(b).

3 AER 2015, "*Attachment 3: Rate of return | Draft decision: Australian Gas Networks Access Arrangement 2016-21*", November 2015, pg. 3-262.

4 RBA 2015, "*Statement on Monetary Policy*", November 2015, Table 6.1.

- the AER's method is likely to result in an inflation forecast that is above market expectations of inflation over the next AA period;
- the inflation forecast used to make adjustments to cash flows (based on the AER inflation forecast) is likely to be inconsistent with the forecast of inflation implied in the nominal rate of return (which reflects market expectations);
- the downward adjustment to depreciation cash flows is expected be too large—because the inflation forecast derived using the AER's method is expected to be higher than the actual inflation used to roll forward the capital base from 2016/17 to 2020/21—thus artificially depressing the overall return to investors, and
- AGN will not be able to recover its capital costs.

1.3.2 Return to a Market-Based Method

As foreshadowed in its Initial AA Proposal, in this Revised AA Proposal AGN has adopted an alternative forecasting method based on market data. The alternative method is referred to as the 'Fisher equation' method, or the 'breakeven inflation' forecasting method. Under this method, an estimate of expected inflation is derived using a simplified version of the Fisher equation, based on the difference in yields on nominal and inflation indexed CGS of the same maturity.[5]

The Fisher equation method was used by the AER prior to 2008. The AER only changed to its current method in 2008 as a result of market conditions at that time causing a scarcity of CGS. In its decision to move away from the Fisher equation method, the AER agreed with stakeholders that a market-based estimate of forecast inflation would be preferable, but concluded that due to market conditions at that time its market-based measure was likely to be unreliable.

The AER therefore departed from its method for forecasting inflation (the Fisher equation method) and sought an alternative method that it considered would provide the best estimate of expected inflation. The AER concluded:

> *"The AER's approach to forecasting inflation in this final decision has been in response to an acceptance that the previously ubiquitously used Fisher equation may not currently produce realistic inflation forecasts at this time, due to a bias in indexed CGS yields caused by the scarcity of these bonds.* ***The AER considers that a market based estimate derived from a robust methodology would be preferred to any other alternative method*** *[emphasis added], as the former typically results in a greater degree of certainty and objectivity, however, it is not possible to use such a method at this time…*
>
> *The AER has determined that a methodology that is likely to result in the best estimates of expected inflation is to reference the RBA's short term inflation forecasts, that currently extend out two years, and to adopt the mid-point of the RBA's target inflation band beyond that period (i.e. 2.5%)."*[6]

AGN agrees with the AER that a market-based estimate of inflation is preferable to an estimate based on the RBA forecasts and target range. A market-based estimate is more likely to be consistent with expectations of inflation reflected in the nominal rate of return, and more likely to be reflective of actual inflation over the next AA period.

Further, the limitations that applied to the Fisher equation method in 2008 no longer apply. Dr Hird notes that during the period from 2006 to late 2008 the indexed CGS market was much smaller than today, and

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5 CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, pg. 10 (Provided as Attachment 9.1 to AGN's Initial AA Proposal). See also CEG 2015, "*Measuring risk free rates and expected inflation: A report for United Energy*, April 2015. CEG refers to this as the 'breakeven inflation' forecasting method. CEG notes that the equation it uses is a simplified version of the Fisher equation.

6 AER 2008, "*Final decision: SP AusNet transmission determination 2008-09 to 2013-14*", January 2008, pg.105-106.

this shortage of supply combined with high demand were pushing up indexed CGS prices and pushing down real yields, with the effect that Fisher equation estimates were overstated.[7] However Dr Hird explains that since that time the supply of indexed CGS has increased considerably, thus alleviating concerns regarding the accuracy of the breakeven forecasting method:

> *"At that time the Australian Office of Financial Management [AOFM] was not issuing new indexed linked securities and there were doubts about its commitment to maintain a supply of these bonds into the future. However, since then the AOFM has recommenced issuance of these bonds and the stock of bonds have increased by more than 400% and the number of different maturity dates have more than doubled from 3 to 7. The AOFM has also announced the imminent issuance of a new 2040 or 2045 CPI indexed bond.*
>
> *On this basis I consider that the shortage of supply of these bonds which led to breakeven inflation overstating expected inflation prior to 2009 is no longer a material concern. In any event, to the extent that it this was a material concern it would imply that breakeven inflation would be overestimating expected inflation which, if true, would suggest the AER's methodology (which forecasts higher inflation than breakeven inflation currently) was overestimating by even more."* [8]

In recent years, the current AER method has delivered similar outcomes to the Fisher equation method, because market expectations have been broadly in line with the RBA's forecasts and target range. Therefore, until now, there has been no pressing need for the AER to change its inflation forecasting method.

However there is now a material divergence between the RBA forecasts/targets and market-based measures of inflation expectations. There has also been a material divergence between the RBA forecasts/targets and out-turn inflation over the past year, as shown in Table 1.1 above.

During the development of the 2013 Rate of Return Guideline, forecasts produced using the Fisher equation were close to those produced by the AER's methodology (see Table 9). Therefore, at that time, it was unsurprising that stakeholders endorsed the continuation of the current approach when asked their views. The situation has since changed materially and the AER should not rely on outdated stakeholder support for its approach. It is also worth noting that those views where never incorporated into the final Guideline.

The evidence demonstrates that over the past year, actual inflation has been significantly lower than RBA forecasts and well below the RBA's target band (Figure 1.1).

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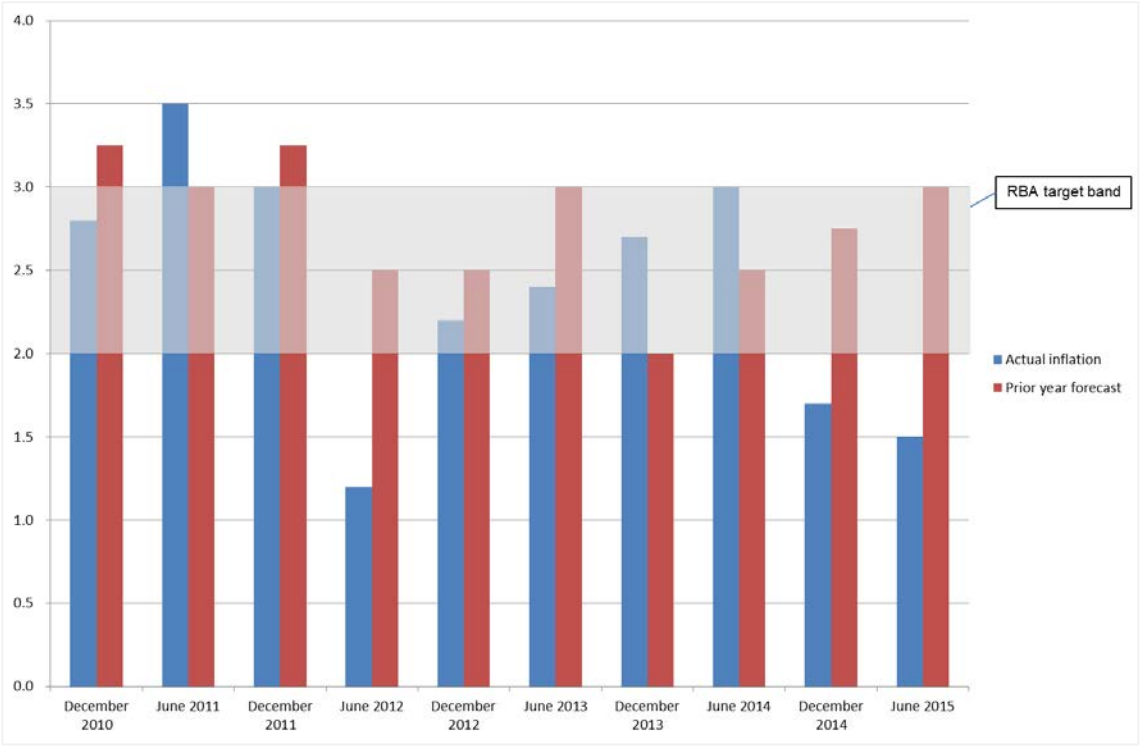
7 CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, pg. 7. Provided as Attachment 9.1 to AGN's Initial AA Proposal. See also CEG, *Measuring expected inflation for the PTRM*, January 2016, pg. 8-9 (Provided as Attachment 9.4 to this Revised AA Proposal).

8 CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, pg. 7 (Provided as Attachment 9.1 to AGN's Initial AA Proposal). See also CEG, 2016, "*Measuring expected inflation for the PTRM*", January 2016, pg. 8-9 (Provided as Attachment 9.4 to this Revised AA Proposal).

FIGURE 1.1: ACTUAL INFLATION VS PRIOR YEAR RBA FORECAST AND RBA TARGET BAND[9]



Further, Dr Hird explains that over the medium term, it is more likely that actual inflation will be below the mid-point of the RBA's target range. Dr Hird notes that, with the RBA cash rate at record low levels, the power of monetary policy to spur economic growth and increases in the inflation rate is now more limited. Dr Hird concludes:

> *"In this context, it is reasonable to expect that investors perceive an asymmetry in the probability that inflation will be above/below the RBA's target, at least in the medium term. This means that, even if the 'most likely' estimate is for expected inflation to average 2.5% in the medium to long term, this is not the mean (probability weighted) estimate. That is, there is more downside than upside risk to inflation."* [10]

This implies that it is no longer reasonable to expect inflation to revert to the middle of the RBA target range over the medium term. Accordingly, in current market conditions, a methodology that assumes medium term inflation would be at or around the mid-point of the RBA target range (as the current AER method does) is likely to over-estimate forecast inflation.

AGN therefore considers that now is an appropriate time for the AER to revert to the Fisher equation method for forecasting inflation as the better forecast method. Since the Fisher equation method provides a market-based estimate of inflation, use of this method will:

- promote consistency between the inflation forecast used to make adjustments to cash flows and the forecast of inflation implied in the nominal rate of return;

[9] Actual inflation data reflects the annual change in CPI over the year to June/December (as relevant), as reported by the ABS. The prior year forecast for each December and June quarter is the RBA forecast for the relevant quarter, as set out in the RBA's Statement on Monetary Policy for May of the prior financial year (e.g. for the December 2014 and June 2015 quarters, the prior year forecast is as set out in the RBA's Statement on Monetary Policy for May 2014).

[10] CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, pg. 10. Provided as Attachment 9.1 to AGN's Initial AA Proposal.

- provide for an inflation forecast that is more likely to be reflective of actual inflation over the next AA period; and

- provide AGN with a reasonable opportunity to recover its efficient costs over the long-term, since the inflation forecast used to calculate deductions from the revenue allowance will be more consistent with actual inflation, which is used to roll forward the capital base over time.

AGN proposes to use the CEG implementation of the Fisher equation method, which places 60% weight on a five-year inflation forecast and 40% weight on a 10-year forecast.[11] CEG explains that a five year forecast should be used for indexation of the portion of the capital base that is assumed to be debt financed, since the business' debt financing obligations over the five-year AA period are in nominal terms. However for indexation of the equity-financed component of the capital base, a 10-year forecast should be used in order to effectively convert the 10-year nominal return on equity to a real return on equity.[12]

AGN also adopts CEG's recommendation to substitute actual inflation into the five year forecast used for indexation of the debt-financed portion of the capital base, where actual observations are available.[13]

AGN therefore proposes to apply an inflation forecast of 2.01%, based on an application of the Fisher equation method over the period 1 to 31 October 2015.[14]

1.3.3 AER Proposal for Separate Consultation on the Inflation Forecasting Method

In the Draft Decision the AER states that, going forward, it would consider a change to inflation forecasting if it was endorsed by stakeholders as part of a comprehensive consultation process. The AER also suggests that the next rate of return guideline review may be a suitable process for also reviewing the inflation forecasting method.[15]

It is not clear to AGN why a change to the inflation forecasting method could only be considered as part of a separate consultation process (if that is what the AER is suggesting) or why it could not be considered by the AER as part of the stakeholder consultation process undertaken in making its distribution determination for AGN. AGN notes that stakeholders have until 4 February 2016 to comment on this Revised AA Proposal.

AGN considers that the AER must consider the appropriateness of the inflation forecasting method as part of its Final Decision. This is because:

- under the AER's current approach to determining total revenue, there is an adjustment made for indexation of the capital base.; it is therefore necessary for the AER to determine a forecast of inflation in order to determine total revenue; and

- as with any forecast or estimate, the AER's forecast of inflation must be arrived at on a reasonable basis, and must represent the best forecast or estimate possible in the circumstances;[16] the current best estimate of forecast inflation is 2.01%, which inflation is materially different to the AER's forecast of 2.5%.

The AER has not previously expressed any reservation about considering a change to the inflation forecasting method as part of a revenue determination process. On the contrary:

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11 CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, Section 3 (Provided as Attachment 9.1 to AGN's Initial AA Proposal); CEG 2015, "*Measuring expected inflation for the PTRM*", January 2016 (Provided as Attachment 9.4 to this Revised AA Proposal).

12 CEG 2015, "*Measuring expected inflation for the PTRM*", January 2016, pg. 21-22 (Provided as Attachment 9.4 to this Revised AA Proposal).

13 CEG 2015, "*Measuring expected inflation for the PTRM*", June 2015, pg. 24-25 (Provided as Attachment 9.1 to AGN's Initial AA Proposal).

14 CEG 2015, "*Measuring expected inflation for the PTRM*", January 2016, pg. 15. (Provided as Attachment 9.4 to this Revised AA Proposal).

15 AER 2015, "*Attachment 3: Rate of return | Draft decision: Australian Gas Networks Access Arrangement 2016-21*", November 2015, pg. 3-263.

16 National Gas Rule 74(2).

- During the 2013 Rate of Return Guideline process, the AER deferred consideration of the inflation forecasting method on the basis that it would be considered in upcoming determinations. The AER stated in its explanatory statement:

> *"As discussed with stakeholders, the final guideline does not cover our position on transactions costs or forecast inflation. These issues will need to be considered in upcoming determinations."* [17]

- As noted above, the AER has previously adopted an inflation forecasting methodology that was different to that set out in its Post Tax Revenue Model (PTRM) and applied in previous determinations. In its January 2008 determination in respect of SP AusNet the AER did not apply the Fisher equation method, even though the Fisher equation method had been applied up until that time, and was the method included in the PTRM at the time SP AusNet submitted its revenue proposal.[18] The AER stated that in considering SP AusNet's revised proposal, it was guided by the principle that the appropriate approach to forecasting inflation should be a methodology that the AER determines is likely to result in the best estimates of expected inflation.[19]

AGN considers that, in light of the evidence that the AER's current method is not producing accurate forecasts of inflation, the AER must review its inflation forecasting method as part of making its Final Decision for AGN. This would be consistent with the AER's message to stakeholders during the 2013 Rate of Return Guideline process.

1.3.4 Interrelationships with the Rate of Return

Forecast inflation is used to adjust the cash flows to maintain a real rate of return framework.[20] It thus has an important interrelationship with the rate of return, and impacts on the overall return to investors—it is akin to capital gains earned on an investment. If inflation is not correctly forecasted, the adjustment to cash flows may be too large (or too small) and thus investors may receive an overall return that is too low (or too high). This interrelationship with the rate of return is discussed in Attachment 10.26 to this Revised AA Proposal.

1.4 Summary

For reasons set out above, AGN proposes that an alternative forecasting method, based on market data, be adopted. The alternative method is referred to as the 'Fisher equation' method where an estimate of expected inflation is derived using a simplified version of the Fisher equation, based on the difference in yields on nominal and inflation indexed CGS of the same maturity.

Based on this alternative method, the current best estimate of forecast inflation is 2.01%.

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17 AER 2013, "*Explanatory Statement: Rate of Return Guideline"*, December 2013, pg. 21.

18 AER 2008, "*Final decision: SP AusNet transmission determination 2008-09 to 2013-14"*, January 2008, pg.105-106. As noted by the AER, the first PTRM (which applied until September 2007) used the Fisher equation to estimate inflation (in the 'WACC' worksheet, cell F9).

19 AER 2008, "*Final decision: SP AusNet transmission determination 2008-09 to 2013-14"*, January 2008, pg. 102.

20 While the PTRM is a nominal model in that it has nominal inputs including for the rate of return (as required by NGR 87(4)(b)), the PTRM is properly understood as embodying a real rate of return framework in that it derives a real revenue path for the AA period, expressed in terms of the real X factor for each regulatory year of the AA period, that includes compensation for a real rate of return (effectively derived by the PTRM by taking a nominal input for the cost of debt and equity and deducting forecast inflation).