29 June 2017

Mr Warwick Anderson
General Manager, Network Finance and Reporting
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

570 George Street
Sydney NSW 2000
All mail to GPO Box 4009
Sydney NSW 2001
T +61 2 131 365
www.ausgrid.com.au

Dear Warwick,

Thank you for the opportunity to comment on the Australian Energy Regulator's (AER) regulatory treatment of inflation discussion paper. There are two key issues highlighted in the discussion paper:

1. The best estimate of expected inflation.
2. The compensation for inflation within the regulatory framework.

Ausgrid fully supports Electricity Networks Australia's submission on issue 1, the best estimate of inflation. The AER's current method for forecasting inflation in regulatory determinations calculates a 10 year geometric average that uses the Reserve Bank of Australia's (RBA) forecasts of inflation for 2 years and then assumes the mid-point of the RBA's target range for the following 8 years. We consider that over the long term that the RBA has significant influence over the prevailing rate of inflation within the Australian economy. However, the RBA does not and cannot guarantee inflation will be at the mid-point of its target range (i.e. 2.5%). At times inflation could track well above or well below the mid-point of the RBA's target range for an extended period of time, certainly longer than 2 years. For example, at present there is a low inflationary environment globally and a number of central banks around the world have been struggling to spur economic growth and inflation since the 2008 global financial crisis. For these reasons, we think it is important to look at additional sources of information such as market expectations of inflation rather than assuming that inflation will revert to 2.5% within 2 years and remain at that level for a further 8 years.

We think that it is important to address issue 1, the best estimate of inflation, because there is currently an inconsistency of inflation treatment within the regulatory framework. This inconsistency relates to the second key issue highlighted in the AER's inflation discussion paper and can cause electricity distributors' returns on capital to under/over-perform allowed returns on capital, this becomes a significant issue when there are sustained differences between forecast and actual inflation.

If there is a sustained difference between forecast and actual inflation, the impacts of the current inconsistency of inflation treatment in the regulatory framework will start to show up in lower returns achieved by electricity distributors (low inflation environment) or higher returns (high inflation environment). Sustained deviations from expected returns would increase the risk rating applied by investors to these sorts of investments, raising the long term cost of capital.

This submission aims to simply set out the existing inconsistency of inflation treatment within regulatory framework and we encourage the AER to conduct further analysis on issue 2. We note that improving the forecast of inflation at the start of a regulatory period could to a large extent reduce the inflation risks posed by the current inconsistency in the regulatory framework, but further analysis is required.

Inconsistency between regulatory models

There is currently an inconsistency between the inflation used to set building block revenue allowances in the Post-Tax Revenue Model (PTRM) and the inflation used to index the regulatory asset base (RAB) in the RAB roll forward model (RFM). This is highlighted below – indexation of the RAB in the PTRM is calculated using forecast inflation (in red) and indexation of the RAB in the RFM is calculated using actual inflation (in blue).

PTRM - Building Block Revenues

+ Return on Capital (Nominal WACC x RAB)

Regulatory Depreciation:
+ Economic/Straight-Line Depreciation
– Indexation of RAB (Forecast Inflation x RAB) → Effectively Converts Nominal Return on Capital in Revenues (Cash) into a Real Return

+ Opex
+ Tax
+ Incentive Payments

RFM - Return for inflation component of Nominal WACC

Indexation of RAB (Actual Inflation x RAB) ← Inflation compensated for through increases in the value of the RAB (Non-Cash)

As illustrated above, the revenue allowance for depreciation costs (recovery of capital expenditure outlays) is equal to straight line depreciation ***minus*** expected indexation of the RAB. This revenue allowance is called the "regulatory depreciation" allowance. However, if we assume that Ausgrid is fully compensated for economic depreciation (full recovery of allowed capital expenditure outlays) as required under the National Electricity Rules (clause 6.5.5 (b)(2)), the indexation adjustment to regulatory depreciation effectively converts the nominal return on capital into a real return on capital 'within revenues'. The inflation component of the nominal rate of return is recovered in non-cash terms through indexation of the RAB in the RFM. Effectively, the nominal return on capital determined as efficient by the regulator is split between cash revenues (real component of returns) and non-cash RAB value increases (inflation component of returns).

Impact of inflation inconsistency

The current inconsistency between the PTRM and RFM means that the total nominal return on capital actually received by a distributor can be different to what is determined as efficient by the regulator at the start of each regulatory determination. The degree of difference is determined by how much actual inflation varies from the AER's forecast of inflation at the start of a regulatory period.

The impact of inflation varying from the AER's forecast of inflation is ultimately borne by equity investors. This is because, in practice, a distributor's debt costs are fixed in nominal terms (CPI-linked debt is inefficiently expensive for Australian corporates and inflation swap instruments are also very costly). The practice of issuing nominal debt on a staggered portfolio basis has also been recognised as benchmark efficient practice by the AER. Holding other factors constant, the impact of the difference between forecast and actual inflation on nominal equity returns is described by the following equations:

Forecast Return on Equity =	+ Nominal Return on Equity	Revenues (Cash)
	– Forecast RAB Indexation	
	+ Forecast RAB Indexation	RAB value (Non-Cash)
Actual Return on Equity =	+ Nominal Return on Equity	Revenues (Cash)
	– Forecast RAB Indexation	
	+ Actual RAB Indexation	RAB value (Non-Cash)

The simplified example below shows the impact of actual inflation varying from forecast in the current regulatory framework. The example assumes 60% gearing, no capex and a remaining asset life of 25 years down to 21 years by Year 5.

		Year 1	Year 2	Year 3	Year 4	Year 5
Forecast Inflation		**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Actual Inflation		**3.0%**	**2.0%**	**1.5%**	**1.0%**	**2.0%**
Forecast Closing RAB	**1,000**	**985**	**969**	**951**	**931**	**910**
Equity Component	400	394	387	380	372	364
Debt Component	600	591	581	570	559	546
Nom Return on Capital =	**7.3%**	**73**	**72**	**71**	**69**	**68**
+ Nom Return on Equity	8.5%	34	33	33	32	32
+ Nom Return on Debt	6.5%	39	38	38	37	36
Reg Depreciation =		**15**	**16**	**18**	**19**	**21**
+ Economic Depreciation		40	41	42	43	44
- Forecast RAB Indexation		(25)	(25)	(24)	(24)	(23)
Actual Closing RAB	**1,000**	**990**	**964**	**941**	**917**	**905**
Actual RAB Indexation		30	20	15	9	18

From this example, we can see that the actual nominal return on equity from the combination of revenues and RAB value increases varies significantly from the forecast/allowed nominal return on equity.

In summary, if actual inflation is higher than initially forecast, the distributor will receive a total nominal return on equity higher than expected (Year 1). If actual inflation is lower than initially forecast, the distributor will receive a total nominal return on equity lower than expected at the start of a regulatory period (Years 2 – 5).

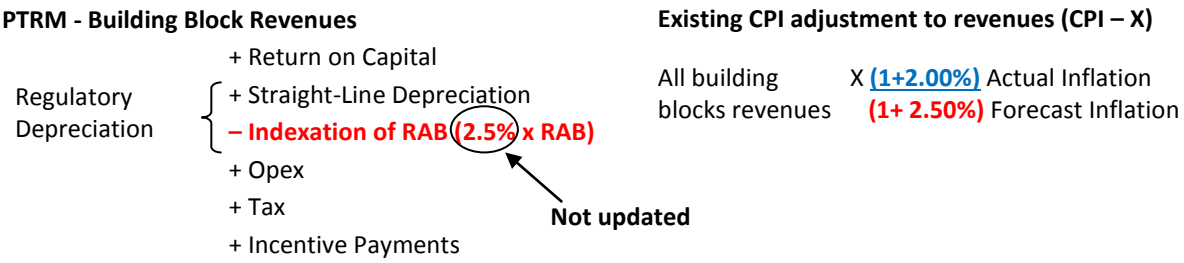
	Year 1	Year 2	Year 3	Year 4	Year 5
Forecast Return on Equity (%)	**8.5%**	**8.5%**	**8.5%**	**8.5%**	**8.5%**
Forecast Return on Equity ($) =	**34**	**33**	**33**	**32**	**32**
+ Nominal Return on Equity	34	33	33	32	32
- Forecast RAB Indexation	(25)	(25)	(24)	(24)	(23)
+ Forecast RAB Indexation	25	25	24	24	23

	Year 1	Year 2	Year 3	Year 4	Year 5
Actual Return on Equity (%)	**9.8%**	**7.2%**	**6.0%**	**4.8%**	**7.3%**
Actual Return on Equity ($) =	**39**	**29**	**23**	**18**	**27**
+ Nominal Return on Equity	34	33	33	32	32
- Forecast RAB Indexation	(25)	(25)	(24)	(24)	(23)
+ Actual RAB Indexation	30	20	15	9	18

The National Electricity Rules set out that a benchmark efficient nominal rate of return (clause 6.5.2(d)(2)) is applied to the regulatory asset base to give the allowed return on capital. As set out above as it currently stands, where there is a bias within an inflation forecast, it is likely that the allowed nominal rate of return will not meet the requirements of the National Electricity Rules. If inflation is higher than forecast, the actual return on equity achieved will be higher and if inflation is lower than forecast, the actual return on equity will be lower.

Existing annual adjustment for inflation (CPI – X)

There is currently an annual update for changes in inflation embedded within the regulatory (CPI–X) control mechanism. This adjustment reverses out an assumed forecast of inflation and substitutes it for actual inflation throughout the regulatory period. However, the adjustment does not substitute the forecast inflation used to calculate regulatory depreciation (i.e. the assumed indexation of the RAB used to calculate regulatory depreciation revenue allowances) with actual inflation. This is illustrated in the diagram below.



From the diagram, if we assume a RAB of $1,000 forecast inflation of 2.5% and actual inflation of 2.0%. The indexation adjustment to the regulatory depreciation allowance in the PTRM would move from being **$250** = 2.5% x $1,000 to being **$249** = $250 x (1+2.0%)/(1+2.5%). At the end of the regulatory period the RAB would be rolled forward in the RFM with an indexation of **$200 = 2.0% x $1,000.** Thus the annual CPI update within the CPI – X control mechanism does not address the inconsistency between the inflation used in the PTRM to calculate the regulatory depreciation revenue allowance and the actual inflation applied to index the RAB in the RFM.

Recommendations to the AER

1. Explore improvements that could be made to the forecast of inflation

   Given the current inconsistency in treatment of inflation between the PTRM and RFM, it is imperative to ensure that there is not a systematic bias in the forecast of inflation. Such bias would lead to systematic over/under compensation of distributors if inflation was systematically under/over forecast. Improving the forecast of inflation at the start of a regulatory period mitigates the potential for under/over-compensation of distributors relative to the benchmark efficient nominal return on equity set by the AER. We support ENA's submission on this issue.

2. Conduct further analysis on the treatment of inflation within the regulatory framework and investigate whether changes to the PTRM or RFM are necessary.

   The example outlined in this submission highlights the current inconsistency in the treatment of inflation between the PTRM and the RFM. We note that improvements to the forecast of inflation at the start of a regulatory period could reduce the risks and impact of the inconsistency.

If you have any questions or would like to discuss this submission further, please feel free to contact Iftekhar Omar on (02) 9269 2695, iomar@ausgrid.com.au, or Son Vu on (02) 9269 4360, svu@ausgrid.com.au.

Kind Regards,

Rob Amphlett Lewis
Executive General Manager
Strategy & Regulation
Ausgrid