FINAL DECISION

Energex
Distribution Determination
2020 to 2025

Attachment 3
Rate of return

June 2020

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: EnergyQueensland2020@aer.gov.au

AER reference: 62727

Note

This attachment forms part of the AER's final decision on the distribution determination that will apply to Energex for the 2020–25 regulatory control period. It should be read with all other parts of the final decision.

The final decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 12 – Classification of services

Attachment 13 – Control mechanisms

Attachment 14 – Pass through events

Attachment 15 – Alternative control services

Attachment 18 – Tariff structure statement

Attachment A – Negotiating framework

Contents

3 Rate of return

The return each business is to receive on its regulatory asset base (RAB), known as the 'return on capital', continues to be a key driver of proposed revenues. We calculate the regulated return on capital by applying a rate of return to the value of the RAB.

We estimate the rate of return by combining the returns of the two sources of funds for investment: equity and debt. The allowed rate of return provides the business with a return on capital to service the interest on its loans and give a return on equity to investors.

An accurate estimate of the rate of return is necessary to promote efficient prices in the long-term interests of consumers. If the rate of return is set too low, the network business may not be able to attract sufficient funds to be able to make the required investments in the network and reliability may decline. Conversely, if the rate of return is set too high, the network business may seek to spend too much and consumers will pay inefficiently high tariffs.

We also make an estimate of inflation expected over the next ten years, which sits alongside our nominal estimate of the rate of return. Together these determine the effective real return that will be provided to investors over time.

3.1 Final decision

The 2018 Rate of Return Instrument (2018 Instrument) specifies how we will estimate the return on debt, the return on equity, and the overall rate of return.[1] In this final decision, we apply the binding 2018 Instrument and estimate an allowed rate of return of 4.73 per cent (nominal vanilla) as required under NEL.[2]

Energex has accepted the application of the 2018 Instrument. [3]

We apply the binding 2018 instrument to calculate the rate of return. The value, in Table 3.1, will apply to the first year of the 2020–25 regulatory control period. A different rate of return will apply for the remaining regulatory years of the period. This is because we will update the return on debt component of the rate of return each year in accordance with the 2018 Instrument, which uses a 10-year trailing average portfolio return on debt that is rolled-forward each year.

---

1 AER, *Rate of return instrument*, December 2018. See https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/rate-of-return-guideline-2018/final-decision.

2 The legislative amendments to replace the (previous) non-binding Rate of Return Guidelines with a binding legislative instrument were passed by the South Australian Parliament in December 2018. See, Statutes Amendment (National Energy Laws) (Binding Rate of Return Instrument) Act 2018 (SA). NGL, Chapter 2, Part 1, division 1A; NEL, Part 3, division 1B.

3 Energex, *2020–25 Revised Regulatory proposal*, December 2019, p. 39.

Table 3.1 Final decision on Energex's rate of return (% nominal)

	AER draft decision (2020–25)	Energex's revised Proposal (2020–25)	AER final decision (2020–25)	Allowed return over regulatory control period
Nominal risk free rate	1.32%[a]	0.90%	1.03%[b]	
Market risk premium	6.1%	6.1%	6.1%	
Equity beta	0.6	0.6	0.6	
Return on equity (nominal post–tax)	4.98%	4.56%	4.69%	Constant (%)
Return on debt (nominal pre–tax)	4.79%	4.75%	4.76%[c]	Updated annually
Gearing	60%	60%	60%	Constant (60%)
Nominal vanilla WACC	4.87%	4.67%	4.73%	Updated annually for return on debt
Expected inflation	2.45%	2.37%	2.27%	Constant (%)

Source: AER analysis; Energex, *Revised regulatory proposal 2020–25*, December 2019, p. 39.

[a] Calculated using a placeholder averaging period of 20 business days ending 31 July 2019.

[b] Calculated using an averaging period of 20 business days ending 20 February 2020.

[c] We use the proposed debt averaging period.. The return on debt has been updated for this averaging period.

We note that the final decision return on equity is lower than the return on debt in Table 3.1. This is because our return on equity is based on the most recent averaging period and our return on debt is estimated using a 10 year trailing average. The trailing average approach entails 10 per cent of the return on debt being calculated from the most recent averaging period with 90 per cent from prior periods. This can lead to the return on debt being higher that of equity if the prior returns on debt have been higher than the return on equity as is the case presently. The trailing average reflects the interest costs facing a network that spreads its debt issuance across time.

We note that Energex's proposed risk free rate[4] and debt averaging periods were submitted with its initial regulatory proposal and complied with the conditions set out in the 2018 Instrument.[5] Therefore, we are required to apply these averaging periods to estimate its rate of return for the upcoming regulatory period per our application of the 2018 Instrument. We specify these periods in confidential Appendix A.

[4] This is also known as the return on equity averaging period.

[5] AER, *Rate of return instrument*, December 2018, cll. 7–8, 23–25, 36; AER, *Final decision, Energex distribution 2020 to 2025, Attachment 3—Rate of return confidential appendix A: Equity and debt averaging periods*, April 2020.

3.2 Expected inflation rate

Our estimate of expected inflation is 2.27 per cent (detailed in Table 3.2). It is an estimate of the average annual rate of inflation expected over a 10 year period. We estimate expected inflation over this 10 year term to align with the term of the rate of return. Our estimate of expected inflation is estimated in accordance with the method set out in the post-tax revenue model (PTRM). The rules set out how we are to apply the PTRM and the inflation estimation method in the model in our electricity determinations, which is binding on us and network businesses. Our method for estimating expected inflation uses forecasts of short-term inflation published by the Reserve Bank of Australia (RBA) and a return to the mid-point in years 3 to 10. Based on the information currently before us, we remain of the view that our approach is likely to result in the best estimate of expected inflation in the circumstances of this decision.

Table 3.2 AER Expected Inflation (per cent)

Expected Inflation	2020–21	2021–22	2022–23 to 2029–30	Geometric average
AER draft decision	2.00	2.50	2.50	2.45
AER final decision update	1.25	1.50	2.50	2.27

Source: RBA, *Statement on Monetary Policy*, August 2019, Appendix: Forecasts; RBA, *Statement on Monetary Policy*, May 2020, Appendix: Forecasts.

In making this decision we have addressed a range of issues that have arisen in the months leading up to this decision. We address these by discussing:

- Our approach to estimating expected inflation and response to COVID-19 impacts; and
- Whether we should substantially delay our decisions.
- We then respond to specific issues raised by Energex and other network businesses in Appendix B.

3.2.1 Our approach to estimating expected inflation and response to COVID-19 impacts

Energex's initial proposal was for our existing inflation approach to apply, which we accepted in our draft decision.[6] In its revised regulatory proposal, Energex adopted our inflation approach but also proposed that we conduct a review into the method for estimating expected inflation and then apply the result of that review to its final decision.

[6] Energex, *Regulatory Proposal 2020–25*, January 2019, pp. 100-101.

We ran a short consultation process on the proposal to delay our final decision and use the RBA's May 2020 forecasts of short-term expected inflation rather than its February forecast. We expected the RBA's May forecast would reflect recent changes arising from the impact of COVID-19. Energex supported the delay and the use of forecasts from the RBA's May Statement on Monetary Policy (SMP), although it maintained its position that there were a number of other deficiencies in our method for estimating expected inflation.[7]

After the release of the RBA's 8 May 2020 SMP, Energex made a further submission, stating that we should use the year-to-December CPI forecasts, rather than the year-to-June CPI.[8] Energex submitted that the series date needed to align with series used to index the RAB,[9] and the year-to-June 2021 CPI forecast was 'distorted' by the Federal Government's short-term childcare subsidy.

For this final decision, we estimate expected inflation in a manner that is consistent with the method specified in the PTRM.[10] In applying this method we have made two adjustments to our usual practice:

- We use inflation forecasts from the most recent RBA SMP released on 8 May 2020. The SMP is released quarterly. Our usual approach is to use the RBA's February SMP in the PTRM in April final decisions for network businesses with regulatory years starting 1 July (that is, the regulatory period is based on financial years).[11] However, we delayed our decision to allow us to use the RBA's May forecast as we expected it would be a more accurate reflection of the economic outlook for the next regulatory control period.
- We use the RBA's trimmed mean inflation (TMI) forecasts for the first two regulatory years (year-to-June 2021, and year-to-June 2022).[12] Our usual implementation is to use the (headline) consumer price index (CPI) forecasts for these periods.[13] In the current circumstances of COVID-19, we consider that the TMI series better reflects expectations of core inflation as set out in the RBA's May SMP. Further, the TMI smooths the transient volatility in the CPI forecasts in the RBA's May SMP.

In response to Energex's submission of 11 May 2020, we do not consider that it is appropriate to use year-to-December CPI because:

- The expected inflation estimate should align with the regulatory control period, which is on a financial year basis. In particular, the estimate of expected inflation

---

7 Energy Queensland, *Delay of 2020–25 Final Decisions for Energex and Ergon Energy*, 24 April 2020.

8 Energy Queensland, *EQL Letter to AER – 2020–25 Final Decisions Inflation Forecast Update*, 11 May 2020.

9 Energy Queensland, *EQL Letter to AER – 2020–25 Final Decisions Inflation Forecast Update*, 11 May 2020

10 NER, cl. 6.4.1.

11 The PTRM method specifies that we will use the *latest available* RBA SMP.

12 We have consistently used the TMI inflation forecasts from the May RBA SMP in other related areas of our decision, in particular our opex assessment (see attachment 6).

13 The PTRM method specifies that we will use RBA SMP inflation forecasts for the first two years, but does not specify the series used.

should not include forecasts from the six months prior to 1 July 2020, as this period does not fall in the regulatory period.

- The regulatory asset base (RAB) is indexed for actual inflation outcomes. We do this by consistently using a lagged series of CPI outcomes through time. The consistent use of this lagged series means that all past movements in CPI are captured in the RAB. By contrast, switching to a year-to-December 2019 or year-to-December 2020 forecast would mean we would either skip a six month period included in the RAB roll forward or double count a six month period.
- Our decision to use the TMI series addresses Energex's concern about transient volatility affecting CPI forecasts.

During COVID-19 we have also been monitoring other methods to estimate expected inflation. We note the RBA stated that market measures during this time have been more difficult to interpret as the functioning in the markets for these instruments has been significantly impaired recently.[14] We also note these market measures also performed poorly during the global financial crisis.[15]

Whilst recognising the uncertainty caused by the COVID-19 pandemic we consider that, on the information currently before us, our decision on the estimate of expected inflation is the best possible in the circumstances.

3.2.2 Whether we should substantially delay our decision

Throughout late-2019 to May 2020, Energex submitted material to us that it considered demonstrated that our current approach does not produce a reasonable estimate of expected inflation.[16] It also proposed that we conduct a review into the method for estimating expected inflation and then apply the result of that review to its final decision. It then subsequently proposed that we should substantially delay our decision so that any impacts arising from the COVID-19 pandemic could be incorporated into our decision as well as any change arising from our 2020 review of inflation.

Having regard to the material submitted by Energex, we do not agree that we should change our approach at this time, nor delay our decision substantially. Much of the material submitted by Energex reiterated material we considered extensively in the 2017 inflation review, where we adopted the current approach. We have engaged with this material extensively, in the working group and also in this decision. We have also used forecasts of expected inflation developed and published by the RBA on 8 May 2020 that factor impacts of the COVID-19 pandemic.

We do not consider that it is appropriate to further delay making this regulatory determination to wait for the conclusion our inflation review. Leaving the decision open

---

[14] For current commentary see: RBA, *Statement on Monetary Policy May 2020*, 8 May 2020, p. 82.

[15] For information during the global financial crisis see: Letter to ACCC, (2007), *Reserve Bank of Australia. The Treasury Bond Yield as a Proxy for the CAPM Risk-free Rate*, (2007), Australian Treasury.

[16] Energex, *Revised Regulatory Proposal 2020–25 — December 2019,* 10 December 2019, p. 40.

for an extended time creates uncertainty for all. With an extended delay, Energex would not have clear parameters for guiding its decision making and customers would not have certainty of prices, thereby impacting their operation and investment decisions.

3.3 Capital raising costs

In addition to compensating for the required rate of return on debt and equity, we provide an allowance for the transaction costs associated with raising debt and equity. We include debt raising costs in the operating expenditure (opex) forecast because these are regular and ongoing costs which are likely to be incurred each time service providers refinance their debt.

On the other hand, we include equity raising costs in the capital expenditure (capex) forecast because these costs are only incurred once and would be associated with funding the particular capital investments.

Our final decision forecasts for debt and equity raising costs are included in Attachment 6 (opex) and Attachment 5 (capex), respectively.[17] In this section, we set out our assessment approach and the reasons for those forecasts.

3.4 Equity raising costs

Equity raising costs are transaction costs incurred when a service provider raises new equity. We provide an allowance to recover an efficient amount of equity raising costs.

We apply an established benchmark approach for estimating equity raising costs. This approach estimates the costs of two means by which a service provider could raise equity—dividend reinvestment plans and seasoned equity offerings. It considers whether a service provider's capex forecast is large enough to require an external equity injection to maintain the benchmark gearing of 60 per cent.[18]

Our benchmark approach was initially based on 2007 advice from Allen Consulting Group (ACG).[19] We amended this method in our 2009 decisions for the ACT, NSW and Tasmanian electricity service providers.[20] We further refined this approach in our 2012 Powerlink decision.[21]

Our benchmark approach is implemented in the PTRM to estimate equity raising costs. Other elements of our decision act as input to this assessment, particularly the level of

---

17 See Attachment 5 for capex and Attachment 6 for opex of this final decision.

18 AER, *Final decision Amendment Electricity distribution network service providers, Post-tax revenue model handbook*, 29 January 2015, pp. 15, 16 & 33. The approach is discussed in AER, *Final decision, Powerlink Transmission determination 2012-13 to 2016-17*, April 2012, pp. 151–152.

19 ACG, *Estimation of Powerlink's SEO transaction cost allowance-Memorandum*, 5 February 2007.

20 For example, see AER*, Final decision, ACT distribution determination 2009–10 to 2013–14*, April 2009, appendix H.

21 AER, *Final decision, Powerlink Transmission determination 2012–13 to 2016–17*, April 2012, pp. 151–152.

approved capex and the return on equity. It also requires an estimate of the dividend distribution rate (sometimes called the payout ratio) as an input into calculating equity raising costs. The dividend distribution rate is also estimated when we estimate the value of imputation credits. We consider that a consistent dividend distribution rate should be used when estimating both the value of imputation credits and equity raising costs.

Energex's revised proposal proposed zero equity raising costs and accepted our decision to apply the benchmark approach to estimate equity raising costs.[22] We determine zero equity raising costs for this distribution determination based on the benchmark approach, using updated inputs.

3.5 Debt raising costs

Debt raising costs are the transaction costs incurred each time debt is raised or refinanced as well as the costs for maintaining the debt facility. These costs may include underwriting fees, legal fees, company credit rating fees and other transaction costs. We provide an allowance in opex to recover an efficient amount of debt raising costs.

We note that Energex's revised proposal has adopted the total opex allowance in our draft decision including our approach to estimate debt raising costs.[23] Therefore, as discussed in Attachment 6 (opex), our final decision is to accept Energex's revised opex proposal including debt raising costs.

3.5.1 Current assessment approach

Our current approach to forecasting debt raising costs is based on the approach in a report from the Allen Consulting Group (ACG), commissioned by the Australian Competition & Consumer Commission (ACCC) in 2004.[24] This approach compensates for the direct cost of raising debt.

It uses a five year window of bond data to reflect the market conditions at that time. Our estimates were updated in 2013 (based on a report by PricewaterhouseCoopers (PwC), which used data over 2008–2013) and most recently in 2019 by Chairmont.[25]

The ACG method involves calculating the benchmark bond size, and the number of bond issues required to rollover the benchmark debt share (60 per cent) of the RAB. This approach looks at how many bonds a regulated service provider may need to issue to refinance its debt over a 10 year period. Our standard approach is to amortise the upfront costs that are incurred in raising the bonds using the service provider's nominal vanilla weighted average cost of capital (WACC) over a 10year amortisation

---

22 Energex, *2020–25 Revised Regulatory Proposal,* December 2019, p. 44.

23 Energex, *Revised regulatory proposal,* December 2019, pp. 34 & 44.

24 PricewaterhouseCoopers, *Energy Networks Association: Debt financing costs*, June 2013.

25 Chairmont, *Debt Raising Costs*, 29 June 2019.

period. This is then expressed in basis points per annum (bppa) as an input into the post-tax revenue model (PTRM).

This rate is multiplied by the debt component of the service provider's projected RAB to determine the debt raising cost allowance in dollar terms. Our approach recognises that part of the debt raising transaction costs such as credit rating costs and bond master program fees can be spread across multiple bond issues, which lowers the benchmark allowance (as expressed in bppa) as the number of bond issues increases.

Shortened forms

Shortened form	Extended form
ACCC	Australian Competition & Consumer Commission
AER	Australian Energy Regulator
ACG	Allen Consulting Group
bppa	Basis points per annum
capex	capital expenditure
CPI	consumer price index
Instrument/2018 instrument	2018 rate of return instrument
NEL	National Electricity Law
NER	National Electricity Rules
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
SMP	*Statement on Monetary Policy*
TMI	trimmed mean index
WACC	weighted average cost of capital

A Confidential Appendix (Averaging Period)

B Additional information on expected inflation

In this appendix we respond to specific issues raised by Energex and other network businesses. The topics we address are:

- details on our review of the regulatory treatment of inflation (section B.1)
- background on the existing inflation framework (section B.2)
- details on the binding nature of the PTRM (section B.3)
- a description of recent stakeholder engagement on inflation (section B.4)
- consideration of submissions on our treatment of inflation (section B.5)
- monitoring of methods to estimate expected inflation (B.6).

B.1 Initiation of our review of inflation

We last ran a comprehensive review of inflation in 2017. Our final position at the conclusion of that review was that we would maintain our existing inflation approach. We indicated that we would continue to monitor inflation related data. Our ongoing monitoring through to early 2020 indicated broadly consistent observations in the key information we relied on in 2017.

Based on the information currently before us, we remain of the view that our approach (adjusted for the use of trimmed-mean inflation) is likely to result in the best estimate of expected inflation in the circumstances of this decision. However, we have recently observed some movements across the spectrum of data and information we monitor. In the context of the broader evidence in front of us, including the factors listed below, we considered it prudent to seek input from all stakeholders about whether any change is warranted.

No individual piece of evidence was determinative in our decision to consult with stakeholders. Our decision was prompted by recent changes in the evidence, combined with an existing body of information that has gradually evolved. When considered in aggregate, together with submissions from some network businesses, these supported the commencement of broader consultation.[26] We initiated the review on 7 April 2020.[27]

While not an exhaustive list, some of the changes in recent months included:

- A shift in tone in RBA commentary compared to previous statements:

[26] Commencing in April 2020 also means that, if necessary, any recommendations from the inflation review will feed into development of the 2022 rate of return instrument.

[27] All documents associated with the 2020 inflation review, including the initiation notice, are available at www.aer.gov.au.

> The global outbreak of the coronavirus is expected to delay progress in Australia towards full employment and the inflation target.[28]

- Some recent forecasts of the survey measures we monitor have been returning to the mid-point at a slower rate than previously.

This was in conjunction with a series of CPI outcomes below 2.5 per cent (the midpoint of the RBA target band). Also forecasts of inflation from the RBA for the next 2.5 years in its February 2020 SMP were lower than previously. Consulting with stakeholders will allow us to consider any potential impact on longer term inflation expectations.

We will apply any changes arising from our inflation review prospectively to subsequent gas and electricity regulatory determinations. Applying our existing method for estimating expected inflation in this final decision is consistent with the requirement to calculate regulated revenues using the inflation method in the current PTRM.[29] We note that the 2020 inflation review could not be completed, having regard to the consultation processes required by the rules and the complexity of the topic for this final decision.

The application of our estimate of expected inflation in our regulatory framework is complex with a range of interrelationships. In particular, it is critical that the rate of return and inflation are estimated contemporaneously and consistently because of their relationship. Our estimate of expected inflation must correspond with the approach incorporated in our 2018 Rate of Return Instrument. Further, each potential indicator of expected inflation has strengths and weaknesses and require careful assessment, as we did in 2017. This review will allow us to transparently and comprehensively revisit the assessments we made in 2017 in consultation with all stakeholders.

Further, most stakeholders have not yet had the opportunity to fully engage on this issue, as Ergon Energy adopted our current approach in its revised proposal. The outcomes of the inflation review will feed into development of the 2022 rate of return instrument. There are many interrelationships between inflation and the rate of return instrument and this allows us to take them into account.

B.2 Background on inflation and expected inflation in our framework

In our existing framework we incorporate inflation in the PTRM, annual pricing process and the Roll Forward Model (RFM). Inflation also affects many of the inputs to these models. These effects are individually accounted for in the current methodology. This section explores the existing methodology and the issue of appropriately accounting for inflation.

---

[28] RBA, *Statement by Philip Lowe, Governor: Monetary Policy Decision*, 3 March 2020.

[29] NER, r. 6.4.2(a) and (b)(1); NER, cl 6.3.1(c)(1) and cl 6.12.3(d).

B.2.1 Outline of our current approach

Inflation is a general measure of an increase in prices and fall in the purchasing value of money. Inflation refers to changes in the general or overall price level, rather than prices for particular products. The most common measure of inflation is the Consumer Price Index (CPI) published by the Australian Bureau of Statistics (ABS). The treatment of inflation is an important component of our regulatory framework.

Under our framework, we set the maximum revenue that network businesses can recover from customers. We do this in a regulatory determination process in consultation with a wide range of stakeholders.

We set the maximum revenue allowance with reliance on many different inputs of inflation.[30] We can summarise the key inflation aspects of the current regulatory framework as follows:

- In the PTRM:
    - Include expected inflation (embedded in the nominal rate of return) in the return on capital building block
    - Deduct expected inflation from the return of capital building block
    - Include expected inflation in the projected RAB roll forward (consistent with the deduction from the return of capital building block)
    - Generate first year nominal revenue and X factors consistent with the estimate of expected inflation, where the NPV of unsmoothed revenues equate to the NPV of smoothed revenues.[31]
- In the annual pricing process:
    - Adjust smoothed revenue to reflect actual inflation (CPI outcomes) within the regulatory period—effectively replacing the estimate of expected inflation for within-one regulatory period cash flows.[32]
- In the RFM:
    - Include actual inflation in the RAB roll forward—effectively replacing the estimate of expected inflation for all subsequent regulatory period cash flows.

Combined, this framework:

---

[30] We included detailed descriptions of the operation of the PTRM, RFM and annual pricing process in our April 2017 inflation review discussion paper. For further details, see: AER, *Regulatory treatment of inflation, Discussion paper*, April 2017, pp. 9–16.

[31] The X factors can be interpreted as the change in real revenue each year—that is, before the adjustment of revenue for inflation. They are expressed in negative terms by convention (so a negative X factor results in a real revenue increase).

[32] This describes the 'complete' pricing adjustment (implemented for APA VTS); the standard approach introduces a first year pricing effect.

- derives an initial real rate of return from the initial nominal rate of return and estimate of expected inflation[33]
- delivers the initial real rate of return plus ex-post inflation outcomes.

When we calculate revenues in the PTRM, we must use an estimate of expected inflation as actual inflation is not yet available. Debt and equity investors similarly must make assessment of expected inflation, and seek nominal returns that recover expected inflation on top of their required real returns. We set our ex ante estimates of nominal rate of return and expected inflation to align with these investor expectations.

Then, as the regulatory period progresses and actual inflation becomes known, the annual pricing process replaces the estimate of expected inflation used in the PTRM. During the annual pricing process, tariffs are varied using actual inflation to set the allowed revenue for the coming year. In this way the prices faced by consumers and the revenues received by the networks change by actual inflation, but are constant in real terms (while ignoring other non-inflation factors).

At the end of the regulatory period, the RFM process rolls forward the regulated asset base using actual inflation. In effect the network business has its revenue adjusted by actual inflation in each annual revenue adjustment and its asset base is adjusted only at the end of each regulatory period.

Investors receive the initial real rate of return, derived from the initial nominal rate of return and the estimate of expected inflation, plus actual inflation outcomes.

This type of regulatory framework is referred to as 'CPI minus X' incentive regulation. It is important to note that our allowed revenue for the five year period is only ever used at the time of our determination to provide stakeholders with an indication of the prices that will occur over the regulatory period. Once we commence the regulatory period we start with our allowed revenue in the first year and then escalate this each year with actual inflation less the X factors we set in step one. This is the CPI minus X mechanism in action.

The consequence of this approach is that as we progress through the regulatory period we effectively displace the estimate of expected inflation that was built into our allowed revenue with the actual inflation outcome in each year as it becomes known:

- From the customer perspective, purchasing power is preserved under this approach. At the beginning of the regulatory period they receive an estimate of the bills they will receive across the five year period. During the period, if actual inflation differs from the initial estimate of inflation, the bills they will receive may be higher or lower than initially expected.
- From the network and investor perspective, this preservation of purchasing power applies equally to the rate of return that is incorporated in our allowed revenue.

---

[33] In other words, the initial real rate of return is the expected (*ex ante*) real rate of return on equity at the start of the regulatory period.

This approach means that network businesses and their investors ultimately receive a revenue allowance with the same purchasing power as initially targeted. This is known as a real rate of return and we describe this overall approach as targeting the initial real rate of return on capital.

In our view, this illustrates why a CPI minus X incentive regime that targets the real rate of return is desirable. Having revenue move with CPI preserves the purchasing power of the network business and its investors, no matter the inflation outcome. Similarly, consumers pay prices that are constant in real terms and so their purchasing power is also preserved.

Our approach works symmetrically in the event of deflation—prices and asset values decline in line with actual inflation and purchasing power is preserved.

The overall trend of inflation revealed by the RBA's estimates, and supported by the commentary provided in the May SMP, is that, following the commencement of the restrictions required to address COVID-19, there will be a rapid and severe economic contraction, which will see significant deflation to the year ended 30 June 2020. The RBA then sees that there will be very little inflation to 31 December 2020, followed by a significant increase in inflation in the first six months of 2021.

We note that this expected deflation does not occur during the forthcoming regulatory control period that commences on 1 July 2020. However, if deflation does occur in any regulatory control period, the CPI minus X mechanism and RFM model will adjust revenue and the RAB for investors to receive the initial real rate of return, derived from the initial nominal rate of return and the estimate of expected inflation, plus actual inflation outcomes (which would be negative in this case).

B.2.2 Appropriately accounting for inflation

In the regulatory framework, inflation has an effect on revenues, costs and regulated asset bases (RAB).[34]

- The return on capital building block applies a nominal rate of return to the RAB. As the nominal rate of return includes expected inflation, part of that building block is the result of expected inflation.
- The return of capital building block removes expected inflation of the RAB from forecast depreciation. This avoids compensation arising from the effects of inflation being double counted by including it in the return on capital building block and also as a capital gain (through the indexation of the RAB).[35] The approach provides for the same total annual revenue and RAB value as if a real rate of return is used in combination with an indexed asset base.

---

[34] For more information see SAPN [2016] ACompT 11 (the SAPN Decision) at [553]–[557] and Re ActewAGL Distribution [2017] ACompT 2 (the ActewAGL Decision) at [355]-[359].

[35] The NER requires the RAB to be indexed and maintained in real terms. See: NER, cll. S6.2.3(c)(4) and S6A.2.4(c)(4).

- Other building blocks (such as operating expenditure or opex) include an inflation component, as the costs forecast in real dollar terms are escalated to nominal dollars using expected inflation in determining the required nominal revenues.

B.2.3 Risk and return (interaction between treatment of inflation and the instrument)

The networks expect to receive a set real rate of return on the overall regulated asset base, but inflation-related risks may still be present.[36] However, network businesses are likely to be compensated for these risks through our current approach to setting the rate of return.

The rate of return instrument is used to set a 10 year nominal rate of return for regulatory revenue determinations, and was set with full knowledge of the 2017 inflation review (which left the existing approach unchanged). The 2018 Rate of Return Instrument is designed to work together with the current inflation approach to deliver the intended inflation compensation package (real rate of return). To calculate the real rate of return, the 10 year annualized expected inflation is deducted from the nominal return, and both have the same time horizon.

B.3 Binding PTRM

We and the electricity network businesses must apply the inflation estimation method specified in PTRM.

Under clause 6.4.1, the AER must, in accordance with the distribution consultation procedures,[37] prepare and publish a PTRM[38] and it must ensure that a PTRM is in force at all times.[39] The PTRM must set out the manner in which the network business's annual revenue requirement for each regulatory year of a regulatory control period is to be calculated.[40]

Importantly, under clause 6.4.2(b), the contents of the PTRM are expressly required to include (but are not limited to) the following:

1. a method that the AER determines is likely to result in the best estimates of expected inflation; and
2. the timing assumptions and associated discount rates that are to apply in relation to the calculation of the building blocks referred to in clause 6.4.3; and

---

36 These inflation-related risks include the first year pricing effect and inflation lags and (for equity holders) the effect fixed nominal debt issuance.

37 The distribution consultation procedures are those procedures set out in Pt G of Ch 6. Broadly, they require consultation with stakeholders, including time periods applicable to particular steps in the consultation process, the use of explanatory materials and the requirement to seek and take into account comments from interested parties before making a decision.

38 NER, cl. 6.4.1(a).

39 NER, cl. 6.4.1(c).

40 NER, cl. 6.4.2(a).

3. the manner in which working capital is to be treated; and
4. the manner in which the estimated cost of corporate income tax is to be calculated.

Clause 6.3.1(c)(1) stipulates that a network business must prepare its building block proposal in accordance with the PTRM. Clause 6.12.3(d) provides:

> The AER must approve the total revenue requirement for a Distribution Network Service Provider for a regulatory control period, and the annual revenue requirement for each regulatory year of the regulatory control period, as set out in the Distribution Network Service Provider's current building block proposal, if the AER is satisfied that those amounts have been properly calculated using the post-tax revenue model on the basis of amounts calculated, determined or forecast in accordance with the requirements of Part C of this Chapter 6.

It follows that the PTRM—including the method for estimating expected inflation set out in the PTRM—is binding on both network businesses and the AER and not to be changed in the revenue determination process.

In Application by SA Power Networks [2016] ACompT 11, the Australian Competition Tribunal considered whether the AER was bound to apply whatever method for estimating expected inflation had been predetermined in the PTRM.

The Tribunal held:[41]

> "… the PTRM is binding on SAPN and the AER such that AER cannot consider inflation outside the PTRM, as proposed by SAPN."

B.4 Stakeholder engagement since September 2019

Over the past year we have continued our ongoing monitoring of data and information and held two workshops in which we arranged for stakeholder input to help us consider whether existing analysis remains valid and to assess the ongoing suitability of the PTRM.

We have analysed whether submissions contain new evidence, particularly whether there is evidence to demonstrate there may be better alternatives available than the current method, conducting ongoing analysis of relevant data as it becomes available, opening issues up to discussion in appropriate sector wide forums, and providing ongoing updates to stakeholders about our views and intentions.

Below sets out our recent engagement with networks and their submissions about our approach to inflation.

We have been monitoring inflation on an ongoing basis since the 2017 inflation review (the last major review). In the 2017 review we stated that we would continue to monitor

[41] At [619].

inflation, in particular through the Consensus Economics (CE) survey of long term inflation expectations.[42]

In January 2019, we received initial proposals from SA Power Networks, Ergon Energy and Energex in which our existing approach to inflation would apply. We then accepted this in our draft decisions.

On 5 September 2019, we held a working group on 'expected inflation and low CGS yields'. This was an AER staff led meeting attended by a cross-section of stakeholder representatives (networks, consumers, investors and retailers). In the working group meeting, Energy Networks Australia (ENA) raised concerns about our approach to inflation including that outturn inflation has been lower than recent RBA forecasts.

On 20 September 2019, SA Power Networks wrote to us requesting that we open a new review into our method for estimating expected inflation. Jemena Gas Networks (JGN) also wrote to us requesting that the gas financial model development include consultation on how the expected inflation assumption is applied.

We reviewed SA Power Networks' letter and considered the then most recent data on inflation expectations. We considered the working group was the appropriate forum to continue exploring the issues raised in SA Power Networks' letter. We wrote to SA Power Networks on 7 November 2019 to inform them of our approach.

On 11 November 2019, we received a second letter from SA Power Networks regarding its concern with our approach to inflation. In this letter, SA Power Networks quoted commentary made by the RBA around expected inflation. SA Power Networks stated that the remarks made by the RBA indicated that long term inflation expectations had changed — unanchored from the RBA's mid-point of 2.5 per cent. However, when we considered the RBA commentary in full, we found there was no indication that the RBA was stating that long term inflation expectations had become unanchored.

On 28 November 2019 we held a second working group meeting with a range of stakeholder representatives. We discussed our response to the September inflation material. There was also initial discussion of further ENA material from early November. Following the meeting, Queensland Treasury Corporation (QTC) submitted a further note on a number of matters it raised during the meeting.

In December, SA Power Networks, Ergon Energy and Energex submitted their revised regulatory proposals for the 2020–25 regulatory period. In their revised regulatory proposals, they all adopted our current method for estimating expected inflation, but raised a number of concerns with our approach. SA Power Networks expanded on its previously raised concerns in its revised proposal.

---

[42] AER, *Regulatory treatment of inflation, Final position*, December 2017, p. 48.

In early March 2020, we received two further letters from SA Power Networks and JGN regarding a review of inflation. SA Power Networks' letter contained similar concerns on inflation as its revised regulatory proposal, but incorporated more recent data and statements from the RBA. JGN's inflation concerns were similar to those it raised in the Review of Regulatory Gas Financial Models. We have considered these concerns when making our decision.

Further, SA Power Networks stated that we should reconsider our inflation approach in light of 'the outbreak of coronavirus and the effect of this on global financial markets'.[43] Other network businesses also made a number of recent submissions to us on inflation, and in particular the inflation approach that would be applied to final decisions for Energex, Ergon Energy and JGN (prior to the completion of the inflation review).[44] We considered these when making our adjustments in response to COVID-19 detailed above.

B.5 Response to submissions from network businesses

In SA Power Networks, Ergon Energy and Energex's revised regulatory proposals, a number of submissions were raised about our existing approach to inflation. These submissions are addressed in this section below, with most being previously considered in the 2017 inflation review.

B.5.1 Actual inflation below expected inflation causes under-compensation.

SA Power Networks, Ergon Energy and Energex raised that there is under-compensation with the existing approach to inflation if outturn inflation is below expected inflation.[45]

In the 2017 inflation review we detailed how networks will not be undercompensated if actual inflation is below expected inflation.[46] The nominal rate of return incorporates the ex-ante expectation of inflation, and not the ex-post outcome (actual inflation). Thus, the fact ex-post outcomes are different to forecasts does not mean the network

---

43 SA Power Networks, *Letter re: SA Power Networks - Determination 2020–25*, 4 March 2020; see also SA Power Networks, *SA Power Networks 2020–25 distribution determination in light of COVID-19*, 8 April 2020, SA Power Networks, *Email re: URGENT SA Power Networks 2020–25 Revised Proposal, Covid-19*, 14 April 2020, SA Power Networks, *Letter re: Proposal to delay final decisions for SA Power Networks, Energex, Ergon Energy, Directlink and Jemena Gas Networks*, 28 April 2020, SA Power Networks, *Inflation forecast for SA Power Networks 2020–25 revenue determination*, 11 May 2020.

44 Energy Queensland, *Inflation forecast for Energex and Ergon Energy's 2020–25 final decisions*, 11 May 2020. JGN, Letter re: *Inflation forecast for JGN 2020–25 access arrangement*, 11 May 2020; JGN, JGN Inflation forecast for 2020–25 *Access Arrangement - Further submission to the AER*, 15 May 2020.

45 SA Power Networks, *Revised Regulatory Proposal 2020–25*, *Attachment 3 Rate of Return,* December 2019, p. 10. Ergon Energy, *Revised Regulatory Proposal 2020–25,* December 2019, p. 42. Energex, Revised Regulatory Proposal 2020–25*,* December 2019, p. 40.

46 AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 14–16 & 64–75.

business is incorrectly compensated. Network businesses' compensation is determined on an ex-ante basis rather than an ex-post basis. Where actual inflation is different to expected inflation, network businesses will receive more or less than what was expected (ex-ante expected real rate of return). However, regardless of the outcome, network businesses will receive their ex-ante expected real rate of return.

B.5.2 Five year vs 10 year inflation expectations

Similarly, network businesses will not be undercompensated if a 10 year horizon rather than a five year horizon is used in estimating expected inflation. A five year horizon is not used because it is inconsistent with the 2018 Rate of Return Instrument.

The instrument is used to set a 10 year nominal rate of return for regulatory revenue determinations, and was set with full knowledge of the 2017 inflation review. The 2018 Rate of Return Instrument is designed to work together with the existing inflation approach to deliver the intended inflation compensation package (real rate of return). To calculate the real rate of return, the 10 year annualized expected inflation is deducted from the nominal return, and both must have the same time horizon. The NER also prescribes this arrangement, including the indexation adjustment to reflect inflation on RAB.

B.5.3 Cash flow analysis

SA Power Networks, Ergon Energy and Energex submitted cash flow analysis that showed the combination of RAB indexation and fixed nominal debt meant the network businesses were in a loss making position and unable to pay dividends to equity holders.

We consider that the cash flow analysis presented does not consider all relevant cash flows and financing effects, and so reaches incorrect conclusions. As we established in the 2017 inflation review, it is necessary to consider the inflation interactions across the entire set of regulatory models (PTRM, RFM and annual pricing process) to understand the delivery of the targeted real rate of return plus outturn inflation.[47] The network businesses' calculations focussed only on the PTRM's return on capital building block and one component of the PTRM return of capital building block (that is, the reduction in this building block due to indexation). The calculations do not include the full return of capital building block (cash flow to equity investors) and the issuance of debt to maintain the benchmark gearing (also freeing up cash flow for equity investors). The correct analysis has already been undertaken:

Scenario A: outturn inflation equals expected inflation: The electricity PTRM (and now gas revenue model) already includes a correctly constituted analysis of cash flows to equity holders in this scenario, which shows the availability of annual cash returns (and

[47] AER, *Review of expected inflation, Final position*, December 2017, p. 64.

the delivery of the correct overall return across time).[48] Further, the PTRM also includes calculation of available dividends (as this is required for the calculation of benchmark equity raising costs), accounting for the relevant financing effects (increase in debt for existing assets and debt/equity financing of capex).[49]

Scenario B: outturn inflation differs from expected inflation. We agree with the network businesses that there will be inflation-related changes to equity returns; but do not agree with the calculation presented or the conclusion it made. This scenario requires consideration of the set of regulatory models (PTRM, RFM and annual pricing) but the NSPs' calculation does not appear to do so. The correct exposure for equity holders was already derived (in both algebraic and spreadsheet form) in the 2017 inflation review.[50] The 2017 review also found that there was appropriate compensation for this equity exposure to inflation outcomes already included in the calculation of the appropriate rate of return.

B.5.4 Potential bias in the current method and comparison to indexed CGS

Ergon Energy stated that to the extent that the AER overestimates expected inflation its target real return will be too low. We agree with this. Likewise, if we underestimate expected inflation the real return will be too high.

Ergon Energy also compared the real rate of return provided by indexed bonds to the nominal rate of return adjusted to real using our expected inflation rate measure. Ergon Energy suggested that this difference is cause for concern.

We find a difference between the implied real return using nominal CGS and our estimate of forecast inflation and the real return on indexed CGS does not demonstrate an issue. The difference is likely to be driven by a risk premium reflected in the YTM on indexed CGS (due to differences in secondary market liquidity, etc.). As found in our 2017 inflation review, the risk premiums in indexed CGS can be substantial and time varying.[51]

B.5.5 Short term RBA forecasts

There was also criticism of RBA's short term measure forecasts of inflation since 2014. However, SA Power Networks, Energex and Ergon Energy do not provide any comparison to how other forecasting methodologies have performed in the same period. The RBA has done analysis over the same period and shown that market

---

48 See rows 105 to 115 of Analysis' worksheet in the distribution PTRM.

49 See rows 27 to 36 of 'Equity raising costs' worksheet in the distribution PTRM.

50 AER, *Review of expected inflation, Final position*, December 2017, pp. 64, 89–98; Sapere, *Efficient allocation and compensation for inflation risk, Report prepared for the Australian Energy Regulator*, 25 September 2017, pp. vi, 16–20, 25–26.

51 AER, *Review of expected inflation, Final position*, December 2017, pp. 57-62.

economists have made similar inflation expectation estimations as the RBA.[52] Effectiveness of RBA short term forecasts was also discussed as part of the 2017 review. In particular we referenced Tulip and Wallace (2012) who analysed short term RBA forecasts effectiveness and Tawadros (2013) who analysed RBA forecasts compared to three other private sources.[53]

B.5.6 RBA statements on inflation

SA Power Networks, Ergon Energy and Energex referenced an RBA statement as below:

> The central scenario remains for inflation to pick up, but to do so only gradually. In both headline and underlying terms, inflation is expected to be close to 2 per cent in 2020 and 2021.
>
> Given global developments and the evidence of the spare capacity in the Australian economy, it is reasonable to expect that an extended period of low interest rates will be required in Australia to reach full employment and achieve the inflation target.[54]

We note that the RBA's 1 to 2 year forecasts have decreased over the past 6 months as these forecasts change with economic conditions. Given we use these RBA short term forecasts, the decrease is reflected in our 1 and 2 year inflation estimates (these cover financial years 2020–21 and 2021–22).

B.5.7 Expected inflation from RBA table G03 at historic lows

SA Power Networks, Ergon Energy and Energex provided a table which detailed that measures of inflation expectations provided by the RBA in table G03 are at historical low points.

We agree that measures of expected future inflation published by the RBA are at (or close to) all-time lows. However, most of the measures are short term (between 3 months and two years) and these low expected short term inflation would be considered by the RBA when making its inflation forecasts for the next 2 to 3 years and hence incorporated into the forecasts we use.

The long term estimate published by the RBA in table G03 is the bond breakeven method (10 years). The recent movements in this estimate is discussed below in 'Movements in market based measures'.

---

52 RBA, *June Quarter 2019 - Explaining Low Inflation Using Models*, June 2019, 143-166.

53 Peter Tulip and Stephanie Wallace (2012), '*Estimates of Uncertainty around the RBA's Forecasts'*, RBA Research Discussion Paper – November 2012, RDP2012-07. George Tawadros (2013), *'The information content of the Reserve Bank of Australia's inflation forecasts*', Applied Economics, 45, pp. 626–627.

54 Statement by Philip Lowe, Governor: *Monetary Policy Decision*, 5 November 2019,

B.5.8 Unanchoring of long term inflation expectations

A chart provided by SA Power Networks, Ergon Energy and Energex showed actual inflation was remained below 2.5 per cent for 21 consecutive quarters.

However, this does not necessarily flow directly to inflation expectations no longer being anchored within midpoint of the RBA's target band. Long periods of inflation below (or above) the mid-point of the RBA band would be expected purely by chance — as shown in Figure B.2. Furthermore, as mentioned above, CE data shows longer term inflation expectation anchored within the RBA target band.

B.5.9 Movements in market based measures

Energex referenced movements in market based measures to suggest that expected inflation may have moved more than our current approach.

In the 2017 inflation review, we found that market based measures are subject to biases and distortions that were time varying and material. We note the commentary around inflation swaps having dropped since the 2017 review. However, it is not clear whether the drop is due to falling inflation expectations or changes in other premia or biases. Therefore, the 20 years inflation swaps shown by Energex in its revised regulatory proposal does not necessarily indicate that the market expects inflation to be below 2 per cent for the next 20 years.

Energex stated that we did not quantify or adjust these biases in the 2017 inflation review. However, these biases were discussed at length in the 2017 inflation review. We referred to academic works where the bias is calculated such as Finlay and Wende (2011) and an updated version of their analysis published by the RBA in 2016.[55] The analysis showed that during some periods a premia (cause of bias) of over 2 percentage points premium was estimated. Such size of bias is consistent with the differences between our existing methodology and the unadjusted bond breakeven approach. We do not attempt to quantify the size of future biases (due to their time varying nature).

In addition, we have considered a number of more recent papers that considered biases in the swaps approach. Cassidy et al (2019) from the RBA found that financial market measures of expected inflation such as bonds and inflation swaps are problematic because of time-varying liquidity and inflation risk premium. Cassidy notes the movements in these measures are difficult to interpret because these markets are not particularly liquid in Australia.[56] There are other papers by central banks that study negative liquidity in swaps include those by the European Central Band (2014, 2017)

---

[55] Richard Finlay and Sebastian Wende (2011), '*Estimating Inflation Expectations with a Limited Number of Inflation indexed Bonds'*, Research Discussion Paper, Reserve Bank of Australia, RDP 2011–01, March, pp. 1-35. RBA, Bulletin - *December Quarter 2016 - Measures of Inflation Expectations in Australia*, December 2016, 23-32.

[56] RBA, *June Quarter 2019 - Explaining Low Inflation Using Models*, June 2019, 143-166.

and the Federal Reserve (2016).[57] These suggest that bias could be the cause of the current observed swap's term structure rather than falling expectations.

B.5.10 Use of Consensus Economics in a monitoring approach

Energex questioned the weighting of the CE survey in checking the soundness of the RBA approach. During the 2017 review we stated our reasoning to rely on CE in a monitoring role and not as an estimate:

> 'We agree with stakeholders' submissions that the RBA method is predicated on the use of the RBA's target band as an anchor for long term inflation expectations. The evidence before us does not indicate long term inflation expectations have deanchored from the RBA's target band at present. We propose to add one additional monitoring process, which is to regularly review survey evidence on long term inflation expectations. If these deviate substantially from the mid-point of the RBA target band (used in the RBA method) we would seek advice from the RBA.
>
> While surveys are good for the monitoring process, we find that they are inappropriate for use as the primary estimate. Inflation expectation surveys that were considered were either for too short a duration or were restrictively proprietary. Short term surveys are already considered by the RBA and information from them should already be in the first two years' forecasts under the current approach.'

B.5.11 ERA's change of expected inflation estimation approach

SA Power Networks, Energex and Ergon Energy referenced ERA's rate of return statement in advocating for a change in our existing approach to inflation. They quoted ERA stating that our method has recently overestimated inflation and that the ERA has changed from the approach. SA Power Networks also noted that this approach was supported by the Independent Panel which reviewed the ERA's approach.[58]

The ERA published its rate of return guidelines in 2018; so this was not directly considered in our 2017 inflation review. Furthermore, it is open to the AER and ERA to arrive at different positions, noting there were other contextual differences (such as the ERA's five year term) at play.

Moreover, in our 2017 inflation review we considered the substantive questions around the accuracy of the bond breakeven approach. The networks appear to overstate the ERA Independent Panel's endorsement of bond breakeven estimation, as it cautioned

---

[57] ECB, Monthly Bulletin July, 2014, p 35. Camba-Mendez and Werner [CW], *The inflation risk premium in the post-Lehman period*, March 2017. Chen et al., Federal Reserve – *Has the inflation risk premium fallen? Is it now negative?*, April 2016.

[58] SA Power Networks, *Revised Regulatory Proposal 2020–25, Attachment 3 Rate of Return,* December 2019, pp. 18-19.

against the potential inefficient pricing of indexed bonds. This goes directly to our expressed concern about the presence of substantial and time varying biases and premiums in this market based measure.

SA Power Networks, Energex and Ergon Energy referred to the following ERA statement as evidence that our approach was inappropriate:[59]

> An expected negative real risk free rate is likely to have adverse regulatory implications, since investors would be unwilling to lend funds with an expected negative real rate of return, when withholding investment offers a zero per cent rate of return.

The zero per cent rate of return on withheld investment is a nominal rate; in the presence of positive inflation this will result in a negative real rate of return. Hence, investors would be willing to invest in a negative real rate of return so long as it was above the withholding alternative.

B.6 Monitoring of indicators of expected inflation

Our existing approach estimates expected inflation using a 10 year geometric average of:

- For year one and two, the latest RBA's short term forecasts of inflation
- For years three to ten, the midpoint of the RBA's inflation target band (that is, 2.5 per cent).

Consistent with our 2017 inflation review, based on the information currently available to us and the analysis we have been able to conduct within the decision timeframe for this distribution determination, we have not identified a better approach to estimating expected inflation. The review we commenced on 7 April 2020 will enable us to test all available information comprehensively, including hearing from all stakeholders.

Below we detail some of our recent research in this area.

[59] ERA, *Final gas rate of return guidelines, Explanatory statement, Meeting the requirements of the National Gas Rules*, 18 December 2018, p. 252.

B.6.1 Recent commentary from the RBA

Table B.1 RBA short term inflation forecasts from the Statement on Monetary Policy

Year to…	Dec 2019	Jun 2020	Dec 2020	Jun 2021	Dec 2021	Jun 2022
November 2019 SMP						
Headline CPI	1.90%	1.90%	1.80%	1.90%	1.90%	NA
Trimmed Mean CPI	1.60%	1.60%	1.80%	1.80%	1.90%	NA
May 2020 SMP						
Headline CPI	1.80%*	-1.00%	0.25%	2.75%	1.25%	1.50%
Trimmed Mean CPI	1.60%*	1.50%	1.25%	1.25%	1.25%	1.50%

Notes: * indicates actual CPI outcome. NA indicates not available (beyond the forecast horizon)

The RBA maintained a cash rate of 0.25 per cent in its 5 May interest rate decision. We note that it has decreased the cash rate from 1.50 per cent to 0.25 per cent in the last 12 months. It has also introduced a yield target on 3-year Australian Government bonds of 0.25 per cent. The RBA stated in its May 2020 interest rate decision:[60]

> The Board will not increase the cash rate target until progress is being made towards full employment and it is confident that inflation will be sustainably within the 2–3 per cent target band.

The RBA is the expert body in this field. Our use of the 2.5 per cent midpoint reflects the RBA's stated commitment to, and the action it takes to deliver on, its target band for inflation (2 to 3 per cent). The RBA Governor stated in July 2019:

> Whether or not further monetary easing is needed, it is reasonable to expect an extended period of low interest rates. On current projections, it will be some time before inflation is comfortably back within the target range. The Board is strongly committed to making sure we get there and continuing to deliver an average rate of inflation of between 2 and 3 per cent. It is highly unlikely that we will be contemplating higher interest rates until we are confident that inflation will return to around the midpoint of the target range.[61]

We have corresponded with the RBA in the past on this topic and the RBA stated:

> The AER currently estimates inflation expectations by averaging the mid-points of the RBA's published forecast ranges for headline CPI inflation and its target range (i.e. 2½ per cent). Since the RBA adopted inflation targeting in the early 1990s, long-term inflation expectations have been well anchored in line with the

[60] P Lowe, *Statement: Monetary policy decision*, 5 May 2020.

[61] P Lowe, *Speech, Inflation targeting and economic welfare*, 25 July 2019.

> Bank's target. This approach appears to be congruous with the AER's aim for a transparent, replicable and simple measure. However, we recognise that it has some limitations. Firstly, the mid-points of the published forecast ranges are not necessarily the RBA's central forecasts. Secondly, if actual long-term inflation expectations were to move notably for a sustained period, it would not be valid to use the Bank's target as a proxy.[62]

We consider a reasonable reading of the body of RBA statements on inflation supports our use of the midpoint of the target band.[63]

Our use of the 2.5 per cent midpoint does not mean we expect inflation to exactly align with this value every year; but rather that this is the expected value across that time period where the RBA targets the 2 to 3 per cent band. For example, the RBA Governor stated:

> We have never thought of our job as keeping the year-ended rate of inflation between 2 and 3 per cent at all times. Indeed, since June 1993, CPI inflation has been below 2 per cent for 24 per cent of the time, and coincidentally above 3 per cent for 23 per cent of the time. What is important is that we deliver an average rate of inflation consistent with the medium-term target.[64]

We acknowledge that the RBA does not specifically target the midpoint of the 2 to 3 per cent band:

> In Australia, since the early 1990s we have had a flexible inflation target. Our target is to achieve an average rate of inflation, over time, of between 2 and 3 per cent. This means that there is an acceptable degree of variation in inflation from year to year, and we have been prepared to use this flexibility. Our focus is very much on the medium term – hence 'on average' and 'over time'. The Board is seeking to provide a strong nominal anchor that people can rely on when making their decisions.[65]

Further, when inflation departs from the target band, the RBA does not specify a particular time for returning inflation within the target band. This quote from the RBA Governor in 2016 helpfully illustrates the RBA's decision making process:

> Take the current situation [in October 2016] of low inflation as an example. Over recent times, we have considered the impact of our decisions not only on the future path of inflation, but also on the health of the balance sheets in the economy. Achieving the quickest return of inflation back to 2½ per cent would be unlikely to be in the public interest if it came at the cost of a weakening of

---

62 RBA, *Letter re: regulatory treatment of inflation – inflation expectations*, 5 July 2017, p. 2.

63 For example, see RBA Interest rate decision statements from September 2019 to February 2020; Statement on Monetary Policy from August 2019, November 2019 and February 2020; P Lowe, *Speech, Inflation and monetary policy*, 18 October 2016; P Lowe, *Speech, Inflation targeting and economic welfare*, 25 July 2019; P Lowe, *Speech, An economic update*, 24 September 2019; P Lowe, *Speech, Some echoes of Melville*, 29 October 2019; P Lowe, *Speech, Unconventional monetary policy, some lessons from overseas*, 26 November 2019.

64 P Lowe, *Speech, Inflation and monetary policy*, 18 October 2016.

65 P Lowe, *Speech, Some echoes of Melville*, 29 October 2019.

> balance sheets and an unsustainable build-up of leverage in response to historically low interest rates. Conversely, the case for moving more quickly would be strengthened in a world where the labour market was deteriorating and people were having increasing difficulty finding jobs.[66]

The most recent statements from the RBA have suggested that it might take longer for inflation to return its target band than in the past. This was a factor prompting us to commence a review of our approach to inflation. In its March Monetary Policy Decision the RBA stated:

> The global outbreak of the coronavirus is expected to delay progress in Australia towards full employment and the inflation target.[67]

We have therefore tested our use of the mid-point of the target band by reviewing other information.

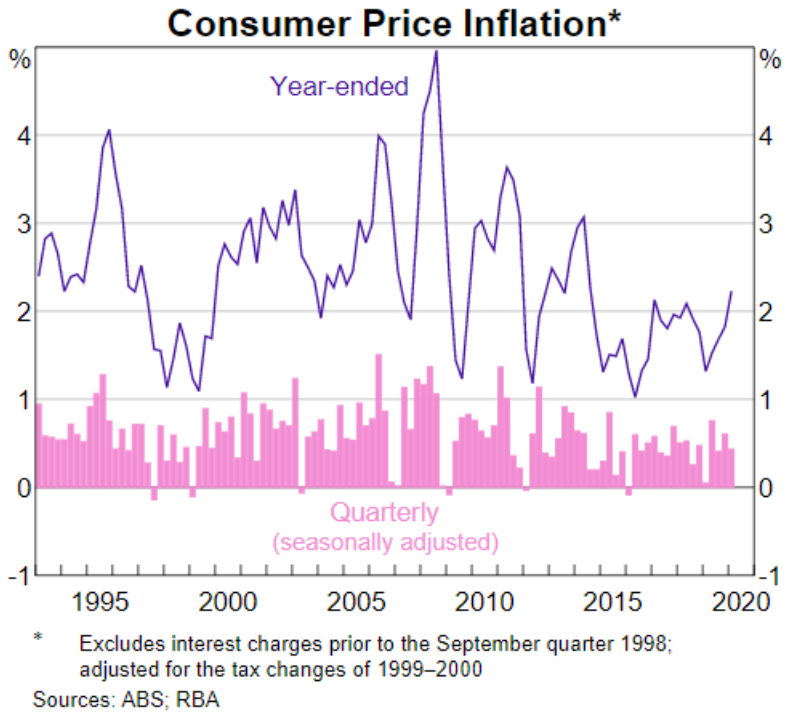
B.6.2 Low out-turn inflation

The catalyst for several recent submissions from networks and investors is the low inflation outcomes in recent years. The Consumer Price Index (CPI) for the year to March 2020 was 2.2 per cent. From the September 2014 quarter to March 2020 quarter, inflation has been below the midpoint of the target band (year on year relative to the prior year corresponding quarter), a period of 23 consecutive quarters. The broader history (since the commencement of inflation targeting) is shown in the RBA graph below.

[66] P Lowe, *Speech, Inflation and monetary policy*, 18 October 2016.

[67] RBA, Statement by Philip Lowe, Governor: Monetary Policy Decision, 3 March 2020.

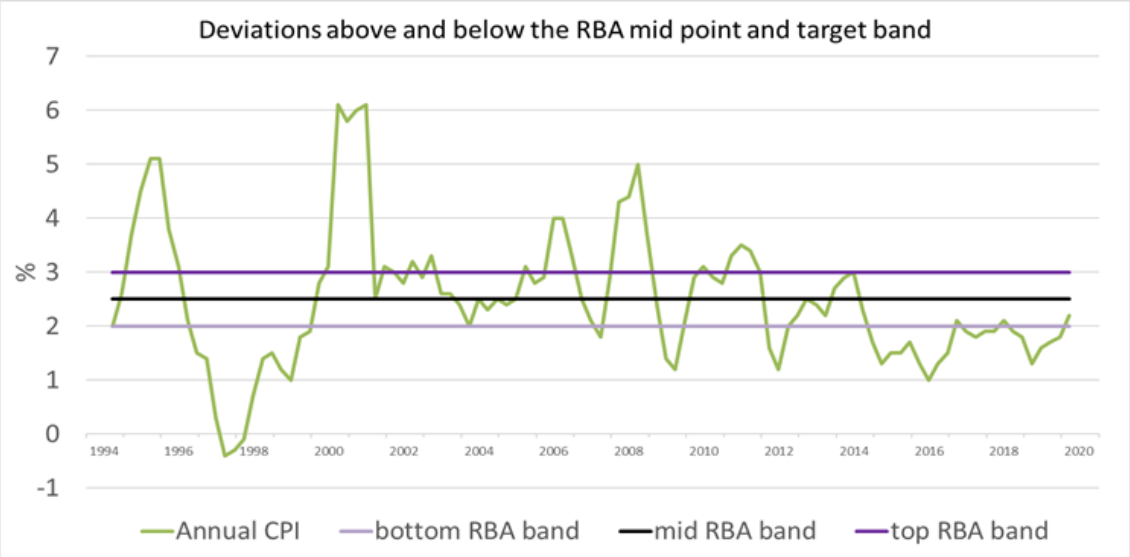
Figure B.1 Graph 4.1 from RBA May 2020 Statement of monetary policy



Since inflation targeting began in the early 1990s inflation has varied above and below the mid-point of the target band. On multiple occasions and for extended periods it has been above or below the target band. The RBA has consistently taken action to move inflation back within its target band. The average inflation outcome across this period is almost exactly 2.5 per cent.[68] Figure B.2 shows CPI outcomes against the upper and lower bounds of the target band and the midpoint.

[68] From Sept 1994 to Mar 2020, CPI rose from 62.3 to 116.6, a geometric average of 2.513% p.a. over 102 quarters.

Figure B.2 Annual outturn inflation over the period from Sep 1994 to Mar 2020



Notes: CPI, all groups, average 8 cities, calculated as per cent change on same quarter prior year

The core implicit assumption in network submissions appears to be that past low inflation outcomes have changed forward looking inflation expectations, and in particular that this means the RBA cannot credibly deliver inflation within the target band in the medium term. We have considered this possibility carefully.

However, it is important to note that there is no under-compensation for regulated networks when outturn inflation is lower than expected.[69] Once we set the initial revenue target in our regulatory determinations, network prices are escalated annually with reference to CPI outcomes. The regulatory asset base (RAB) is also escalated annually with reference to outturn inflation. This means that network revenues and assets are preserved in real terms and not eroded by movements in inflation. Outturn inflation is relevant to the extent that it informs expectations of future inflation. In the review we want to consider whether the inflation outcomes below the mid-point of the target band is impacting expectations.

B.6.3 Consensus Economics survey data

Consistent with the 2017 inflation review, we monitor survey data on long term inflation expectations to assess whether any de-anchoring of expectations from the RBA target band has occurred.[70] With the current information available to us, we consider that the CE quarterly survey is the best available measure of its type.

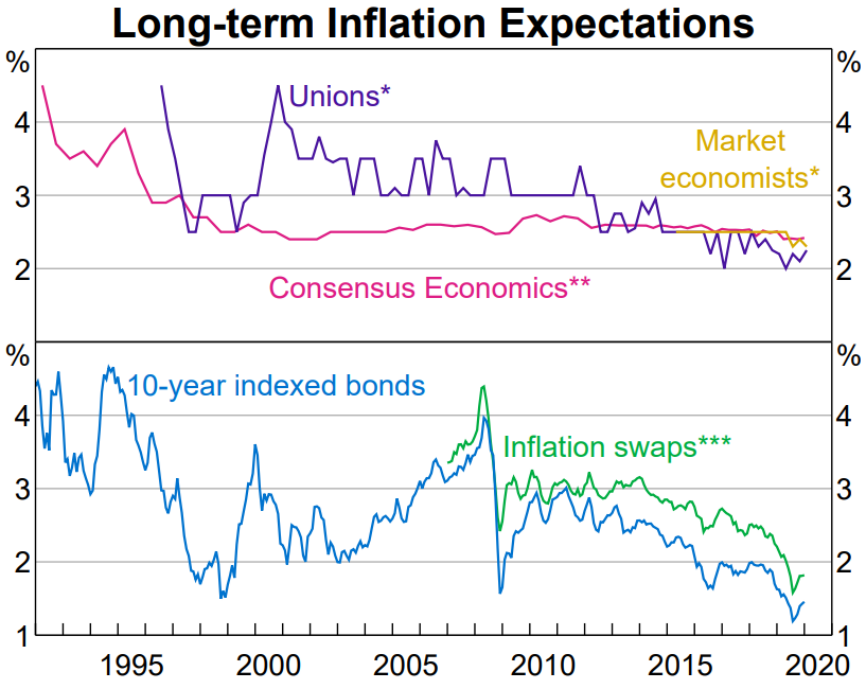
---

69 AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 9–10, 15–16, 65–67.

70 AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 45, 55.

The CE data continues to suggest that long-term inflation expectations are set within the target band and consistent with our use of the midpoint. While the CE survey is proprietary, the RBA publishes a summary figure which shows six to ten year CE inflation expectations (pink line).

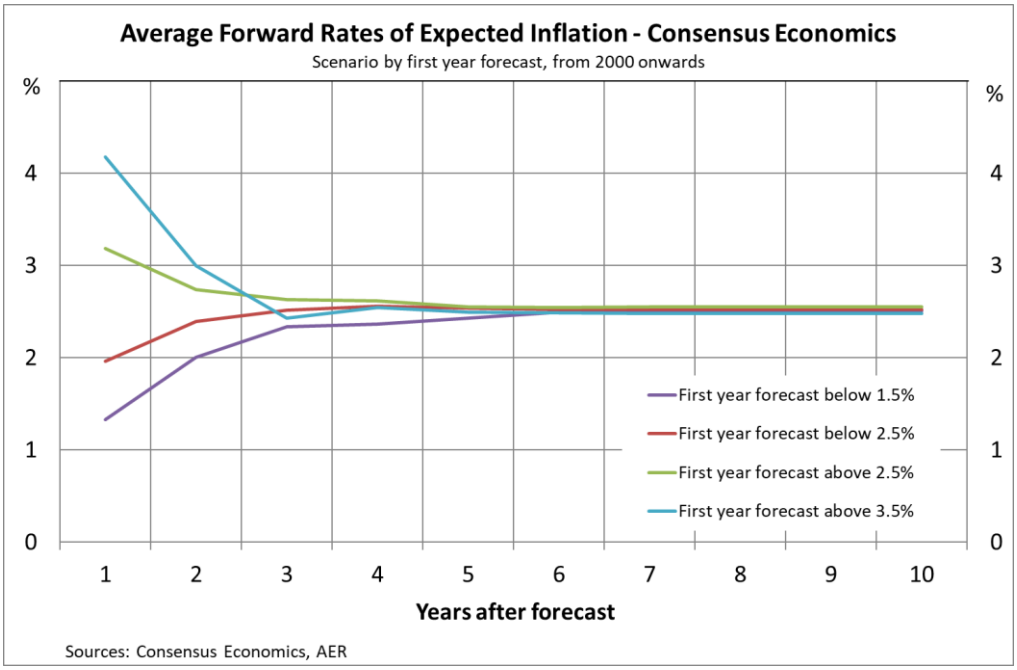
Figure B.3 Graph 4.13 from RBA Feb 2020 Statement of monetary policy[71]



The CE survey data also allows us to observe estimates of the expected rate of reversion back to the mid-point of the target band. This was a particular focus in the 2017 inflation review, and we have updated this analysis as part of our inflation monitoring.

[71] Here we use a chart from February SMP chart of May as it is not available with unadjusted market measures of expected inflation.

Figure B.4 Average forward rates of expected inflation, with groups based on expected inflation in year one (from 2017 inflation review, data updated to Apr 2020)



The updated dataset supports the conclusions in the 2017 inflation review, that even where there are low (or high) inflation expectations for the current year, the path of inflation expectations on average returns back to the midpoint relatively quickly.[72] However, while this is the case on average, it does not apply to forecasts in every period and some recent forecasts return to the mid-point at a somewhat slower rate. This is something we intend to investigate and discuss with stakeholders as part of the inflation review.

B.6.4 Market based measures

Figure B.3 above (from the RBA) includes measures of expected inflation based on the bond breakeven approach and inflation swaps. The advantages and disadvantages of these alternatives were examined in detail during our 2017 inflation review. We found that both bond breakeven and swaps were affected by substantial time varying biases and premiums.[73] The observed pattern of expected inflation from market-based measures since the 2017 review is consistent with that finding. The 2017 review noted that it was difficult to estimate the magnitude of these biases (or limits to that

[72] AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 13–14, 49–52, 110–112.

[73] AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 45–62; see also ACCC/AER Working Paper Series No 11, *Best estimates of expected inflation, A comparative assessment of four methods*, October 2017 version.

magnitude) but referred to empirical analysis which identified premiums of more than 200 basis points at times.[74]

In its 2017 letter to us, the RBA stated:

> As noted in previous correspondence between the Bank and the AER, market-based measures of inflation expectations have several shortcomings that probably make them unviable alternatives to the current method.[75]

More recently the RBA has commented on the difficulty in using these measures:

> Both short- and long-term market-based measures of inflation expectations have declined since the widespread outbreak of COVID-19 in early 2020; however, it is difficult to interpret the magnitude of these declines because functioning in these markets has been significantly impaired recently.[76]

B.6.5 Cumulative movement in indicators

One of the submissions put to us is that most of the indicators of future inflation published by the RBA are towards the lowest they have been and lower now than in 2017.[77] Therefore, the cumulative weight of this decline suggests that our existing approach is no longer realistic.

We agree that measures of expected future inflation published by the RBA are at (or close to) all-time lows.

However, most of the measures of expected inflation published by the RBA are short term. These short term estimates are compatible with the continued use of the RBA approach, given we consider short term inflation expectations are well reflected in the RBA's one and two year forecasts we use.

The long term estimates of expected inflation published by the RBA can be grouped into:

- Market based measures —specifically the 10 year bond breakeven estimate and an estimate based on inflation swaps between five and ten years forward.
- Survey estimates—specifically the CE estimate already noted (average annual expected inflation over six to ten years in the future) and surveys of unions and market economists (each reported as average annual inflation over the next five to ten years).

The survey estimates are all below, but still close to, the 2.5 per cent RBA midpoint.

---

74 AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 61–62, 119–121.

75 RBA, *Letter re: regulatory treatment of inflation – inflation expectations*, 5 July 2017, p. 1.

76 RBA, *Statement on Monetary Policy May 2020*, 8 May 2020, p. 82.

77 See, for example, Energy Networks Australia, *Estimation of expected inflation, Requirement for a review*, 7 November 2019, slide 10.

The cumulative decline in indicators then rests on the two market based measures. The bond breakeven and swap based estimate are well below 2.5 per cent. As described above, we do not consider these estimates to be reliable due to time varying risk premiums embedded in these measures. The issues with the bond breakeven and swap based estimates were extensively covered in our 2017 inflation review.[78] However, as part of our upcoming review we will reconsider the available information around these measures and are open to receiving new information that might suggest greater weight can be applied to these measures.

[78] AER, *Regulatory treatment of inflation, Final position*, December 2017, pp. 45–62; see also ACCC/AER Working Paper Series No 11, *Best estimates of expected inflation, A comparative assessment of four methods*, October 2017 version.