

Review of our financeability test

Final Report Research

November 2018

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1 Executive summary

This year, the Independent Pricing and Regulatory Tribunal of NSW (IPART) has reviewed the financeability test we use as part of our price regulation process. When making our price determinations for regulated businesses, we use a financeability test to assess how our pricing decisions are likely to affect the business's financial sustainability and ability to raise funds to manage its activities, over the regulatory period.

We have now completed the review and made final decisions on the financeability test we will use in future determinations (the 2018 test). A small number of these decisions differ from our draft decisions, and are generally more consistent with stakeholder views.

This report outlines our final decisions, explains how and why we made those decisions, and highlights where they differ from our draft decisions. Our 2018 test will apply to pricing decisions that take effect **on or after 1 July 2019**.¹

We would like to thank all the stakeholders who participated in this review and helped to make our final decisions an improvement on our existing financeability test. We consider that our 2018 test can be replicated by stakeholders, which contributes to the transparency of our regime for regulated businesses and other stakeholders. We also consider that our 2018 test supports efficient and prudent financing decisions by regulated businesses.

1.1 Key improvements for our 2018 test

We last reviewed the financeability test in 2013² (the 2013 test) and made small changes in early 2015.³ The feedback we have received from stakeholders confirms our view that, overall, our 2013 financeability test worked well.⁴ Stakeholders also supported our review, with Sydney Desalination Plant (SDP) submitting that this review is "important in ensuring that IPART's approaches to regulation remain fit for purpose over time, reflect evolving regulatory best practice, and are well understood by all stakeholders."⁵

As such, our final decisions maintain a number of elements of our 2013 test. We will continue to:

- conduct a quantitative assessment of financeability
- conduct a financeability test if:
 - the prices we regulate determine the revenues of the business, and
 - the business has, or is part of an entity with, a distinct capital structure

¹ We would consult on applying our revised test in the course of future price reviews. Our revised test **will not apply** to any determination currently in effect.

² IPART, *Financeability tests in price regulation – Final Decision,* December 2013.

³ IPART, Fact Sheet, Final Decision – Financeability ratios, April 2015.

⁴ See submissions to IPART Issues Paper, June 2018, from SDP, p 1; Hunter Water, p 4; Sydney Water, p 1; Essential Energy, p 1.

⁵ SDP submission to IPART Issues Paper, June 2018, p 1.

- conduct the test on the regulated portion of the business, as a default, and
- retain a BBB⁶ target credit rating.

We have made a number of improvements for our 2018 test. These include to:

- include a benchmark test (assuming a real cost of debt), and an actual test (using the business's actual cost of debt)
- set a single target ratio for each financial metric
- adopt a clearer process for identifying a financeability concern, and
- tailor the remedy for a financeability concern to its source.

Our key changes are summarised in the subsections below, and Box 1.1 summarises the differences between our draft and final decisions.

1.1.1 Include a benchmark test that assumes a real cost of debt

Our 2018 test will conduct separate tests using financial inputs for both a benchmark efficient business, and the business's actual financial inputs. When we calculate our financial ratios for the benchmark business, we will use a real cost of debt. We will continue to calculate the financial ratios for the actual business using the business's actual cost of debt.

Conducting both tests will meet the objectives we have set for our financeability test, which are to:

- ensure our pricing decisions would allow an efficient investment grade rated business to raise finance and remain financeable during the regulatory period (benchmark test), and
- assess whether the actual business would be financeable during the regulatory period (actual test).

Our approach also maximises the value of the test. This is because:

- conducting the test on the benchmark business would identify any estimation and cash flow impacts arising from our building block approach, and
- conducting the test on an actual business would indicate whether the business might face a financeability concern.

Undertaking both tests would also assist in identifying the source of a financeability concern, and in tailoring our response to the source of the concern.

⁶ An S&P Global credit rating of BBB is equivalent to a Moody's Baa2 credit rating. Note that we use a BBB credit rating when setting the Weighted Average Cost of Capital (WACC).

1.1.2 Establish a single target ratio for each financial metric

As part of our 2013 review, we established 'benchmark' values for the financial metrics that we use to assess the business's financeability. These consisted of a range for each financial metric for a number of different credit ratings. In our Issues Paper, we noted these ratios had a wide range and significant overlap across credit ratings, which made it difficult to clearly assess what credit rating a business would meet with a given set of financial ratios.

To increase the simplicity of our approach and eliminate the overlap of our ratios, consistent with our Draft Report, our final decision is to set a threshold (ie, a minimum or maximum) value for each ratio that a BBB rated business would meet under our building block approach. We note that a business would not need to meet the target for every ratio in each year of the regulatory period.

We have revised the target ratios for the benchmark test that we set out in our Draft Report, to acknowledge that the target ratios for nominal financial ratios could, to an extent, account for the ability for a benchmark business with an indexing Regulatory Asset Base (RAB) to generate additional cash flow.

Our target ratios are summarised in Table 1.1 below.

Ratio	Benchmark test (real cost of debt)	Actual test (actual cost of debt)
Interest cover	>2.2x	>1.8x
FFO over debt	>7.0%	>6.0%
Gearing	<70%	<70%

Table 1.1 Target ratios for the benchmark and actual test

1.1.3 Refine our financial ratios

We will calculate three financial ratios in both the benchmark and actual test: the Interest Coverage Ratio (ICR), Funds From Operations over Debt (FFO over Debt) and gearing ratios.

In the benchmark test, the ratios will be calculated with the real cost of debt we adopt in our Weighted Average Cost of Capital (WACC) decisions. To make this clear, we will refer to the ICR and FFO over debt ratio in the benchmark test as the Real Interest Coverage Ratio (RICR) and Real Funds From Operations over Debt ratio.

For both tests, we will rank these ratios to place more emphasis on the RICR (or ICR) and the FFO over Debt ratios, and place less emphasis on the gearing ratio.

1.1.4 Adopt a clearer process for identifying a financeability concern

Our 2013 financeability test did not have a clear step-by-step process or decision rule for assessing whether a financeability concern exists. Stakeholders raised concerns that it was not clear in what circumstances we would conclude a financeability concern would exist, and implies the assessment of a financeability concern is guided by discretion and judgement. With that said, stakeholders generally agreed that the process for identifying a financeability concern should not be too prescriptive and that IPART should retain a degree of discretion.

We have refined the process we established in our 2013 test to assess the business's financeability. This process provides more guidance about how we use the trends in the financial metrics to assess the business's financeability and to highlight where (and how) in this assessment we would apply judgement.

1.1.5 Tailor the remedy for a financeability concern to its source

Conducting separate tests for a benchmark efficient business and the actual business would assist in identifying the source of a financeability concern. In turn, our final decision is that the remedy to a concern should depend on the source we have identified.

In particular, we will consider an NPV-neutral pricing adjustment only in the case where the source of a financeability concern is a temporary cash flow problem. If we consider such an adjustment is appropriate, our preference would be to limit this adjustment to a single regulatory period. However, we agree with stakeholder feedback that in some cases this adjustment may need to take place over multiple periods to manage price volatility. Under our final decision the Tribunal could consider two options to implement this adjustment over a longer period, which are discussed in Section 6.3.

Box 1.1 Summary of key differences between draft and final decisions

In response to stakeholder feedback, we have made the following changes to our draft decisions:

1. We will use the actual cost of debt of the business to calculate the metrics for the actual test

In our Draft Report, we proposed that we would calculate the financial metrics for the actual test using a real cost of debt. We also proposed that we would calculate the financial ratios using the business's actual interest expense as a diagnostic tool.

In response to stakeholder submissions and feedback provided at a targeted stakeholder workshop, we decided to use the actual cost of debt of the business to calculate the financial metrics for the actual test.

If the business failed the actual test (but the benchmark business passed), we would undertake further analysis identifying the source of the concern on a case by case basis.

2. We have revised the target ratios for the benchmark test

We are satisfied that we should use a real cost of debt in the benchmark test, and have received advice from Incenta Economic Consulting supporting this approach. We have, however, revised the target ratios for the benchmark test. This adjustment acknowledges that the target ratios for nominal financial ratios could, to an extent, already embody the ability for a benchmark business with an indexing RAB to generate additional cash flow. We have adopted a target ratio of 2.2 for the Real Interest Coverage Ratio, and 7.0% for the Real FFO over Debt Ratio.

The target ratios for the actual test, based on the actual cost of debt, are unchanged from our draft decision (which is 1.8 for the Interest Coverage Ratio and 6% for the FFO over Debt Ratio).

3. We will rename the Adjusted Interest Coverage Raito to the Real Interest Coverage Ratio and rename the Adjusted FFO over Debt to the Real FFO over Debt Ratio

Stakeholders suggested the names we used to describe the financial ratios based on a real cost of debt were confusing, given the differences between the regulatory framework in Australia and the UK. We agree, and have renamed these ratios.

1.2 Our process for this review

In conducting this review, we undertook public consultation and extensive analysis. The key steps in our process were:

- Releasing an Issues Paper in May 2018, which set out our approach, proposed principles for the review and key issues on which we sought feedback. We received seven submissions.
- Holding a public round table in May 2018 to provide stakeholders with an opportunity to discuss our Issues Paper, share their views, propose changes and raise further issues.
- Considering all submissions to the Issues Paper, feedback from the public round table and conducting our own analysis and research to inform our draft decisions.
- Releasing a Draft Report in August 2018, which set out the analysis and reasoning for our draft decisions, on which we sought feedback. We received six submissions.
- In October 2018, we held a workshop with key stakeholders to discuss our draft decisions on how we calculate the financial ratios in the benchmark and actual tests.
- At the request of participants at the October workshop, we engaged an external consultant, Incenta Economic Consulting, to provide advice on specific matters raised at the workshop. We have released this advice together with this Final Report.
- Considering all submissions to the Draft Report, feedback from stakeholders throughout the review, the consultant report, and conducting further analysis to form our final decisions.

1.3 Structure of this report

The rest of this report discusses the review in more detail and sets out our analysis and final decisions:

- **Chapter 2** outlines the context of and our approach to this review.
- Chapter 3 discusses the objectives of the financeability test, and our final decision to use quantitative data.
- Chapter 4 focuses on how we implement the test, including the inputs we will use in the benchmark and actual tests; the appropriate time horizon for our analysis; and whether we restrict our analysis to the regulated portion of the business.
- **Chapter 5** explores how we assess financeability, including which financial metrics we will use and the target ratios for those metrics.
- Chapter 6 looks at how we will address a financeability concern; in particular, the process we will use to identify a concern and the remedies we could consider.

1.4 List of final decisions

For convenience, a complete list of our final decisions is provided below.

The financeability test framework

unless a financeability concern arises.

1	That we will continue to conduct financeability tests.	13
2	That the objectives of the 2018 financeability test are to:	
	 ensure our pricing decisions would allow an efficient investment-grade rated business to raise finance and remain financeable during the regulatory period (benchmark test), and 	
	 assess whether the actual business would be financeable during the regulatory period (actual test). 	16
3	That we will conduct a financeability test if:	
	 the prices we regulate determine the revenues of the service provider, and 	
	- the provider is established as, or part of, an entity with a distinct capital structure.	18
4	That we will continue to use quantitative data to assess a business's financeability.	20
Impl	ementing the test	
5	That we will conduct separate financeability tests, using the inputs for a benchmark efficient business and for the actual business.	22
6	For the benchmark test, we will use the real cost of debt and gearing ratio in the WAC and include the allowance for inflation indexation over the regulatory period.	CC 26
7	For the actual test we will use the business's current debt outstanding, forecast intere expense and dividend payments.	est 26
8	That we will use the tax allowance from the building block as the tax expense for the benchmark test.	29
9	That we will calculate the tax expense for the actual test using the process outlined in Table 4.3.	י 29
10	That we will make adjustments for operating lease expense, superannuation net liabilities and inflation accretion in the actual test only.	31
11	That, as a default, we will conduct both financeability tests on the portion of the business for which we are setting prices.	33
12	That we will consider on a case-by-case basis whether to conduct the actual test usir financial data for the whole business.	ng 33
13	That we will assess a business's financeability over the upcoming regulatory period	

Financeability assessment

14	That we will continue to use a BBB target credit rating across all industries. 35	
15	That for the benchmark test, we will calculate the financial ratios assuming the real co of debt allowance in the WACC.	ost 36
16	That we will calculate the following ratios for the benchmark test:	
	 The Real Interest Coverage Ratio (RICR). 	
	 Real Funds From Operations (FFO) divided by debt ratio. 	
	- The debt divided by RAB, or gearing, ratio (which is fixed for the benchmark test).	36
17	That for the actual test, we will calculate the financial ratios using the business's actu cost of debt.	al 36
18	That we will calculate the following ratios for the actual test:	
	 The Interest Coverage Ratio (ICR). 	
	 Funds From Operations (FFO) divided by debt ratio. 	
	 The debt divided by RAB, or gearing, ratio. 	36
19	That we will calculate the Return on Capital Employed as a check to the WACC in the benchmark test.	e 36
20	That we will rank the financial metrics to place more weight on the RICR or ICR and Real FFO over Debt or FFO over Debt ratios, and to place less emphasis on the gearing ratio.	49
21	That we will adopt the following target ratios:	
	 A Real Interest Coverage Ratio of greater than 2.2 times. 	
	 An Interest Coverage Ratio of greater than 1.8 times. 	
	 A Real FFO over debt ratio greater than 7%. 	
	 A FFO over debt ratio greater than 6%. 	
	 A debt to RAB gearing ratio less than 70%. 	50
22	That we would adopt the process in Figure 5.3 to identify whether a financeability concern exists.	55
Addı	ressing a financeability concern	
23	That, if we identify a financeability concern, we would separately test whether this concern is due to:	
	 setting the regulatory allowance too low 	
	 the business taking imprudent or inefficient decisions, and/or 	
	 the timing of cash flows. 	60

- 24 That, if the source of a concern is due to a regulatory error, we would correct the regulatory error by reassessing our pricing decision. 63
- 25 That, if the source of a concern is due to imprudent or inefficient business decisions, we would alert the business's owners to the potential need to inject more equity, accept a lower rate of return on equity, or both. 63
- 26 That, if the source of a concern is due to temporary cash flow problems, we could consider an NPV-neutral adjustment to prices. 63
- 27 That, if we consider an NPV-neutral adjustment is appropriate:
 - First, we would consider whether it is appropriate to implement this adjustment over the regulatory period under review.
 - Second, if we do not consider this adjustment should be restricted to the regulatory period under review, we could consider:
 - whether it is appropriate to implement an adjustment by allowing a higher depreciation allowance in the period under review in order to increase prices in the regulatory period under review, or
 - o an explicit adjustment to the pricing path over the regulatory period. If we made such an adjustment, we would publish the value of this adjustment in present value terms. This would allow a future Tribunal to consider this adjustment in a 66 future regulatory period.

2 Context and principles for this review

Our consultations during this review confirmed that our 2013 financeability test worked well by effectively assessing the impact of our pricing decisions on the short-term financeability of regulated businesses. We consider that the test supports regulated businesses to make prudent and efficient financing decisions.

The aim of this review was to identify opportunities to make improvements to the financeability test that are consistent with the objectives of the test and provide a clear net benefit over the 2013 test.

In this chapter we:

- establish the purpose of our financeability test
- discuss who this review affects, and
- outline the scope and objectives for this review.

In Appendix A we summarise our previous financeability reviews.

2.1 The purpose of our financeability test

A number of stakeholders argued that our financeability test should align as closely as possible with the Moody's Investor Service (Moody's) credit rating methodology for Australian regulated water utilities. However, the purpose of our financeability test is different to the purpose of credit rating agencies in assigning a rating to a business:

- A credit rating agency, such as Moody's or Standard and Poors, assigns a credit rating, taking into account all factors known about the business.
- IPART assesses the impact of our pricing decisions and what actions are needed if there is a financeability concern, depending on the source of the concern.

To the extent that credit rating agencies' methodology overlaps with our purpose, that part of the methodology forms an important base for our test. As such, we have used credit rating agencies' methodology as a starting point and adapted it for our regulatory purpose.

The purpose of the financeability test is **not** to assess or assign a credit rating for the business. Rather, it is to check whether our pricing decisions are likely to give rise to a financeability concern and to identify the reasons for any concern. For this reason, our analysis is quantitative only and does not include qualitative factors. In addition, our benchmark ratios are cash flow focussed, and are independent of the financing and investment decisions of the business.

2.2 Who the review affects

The businesses most affected by this review are those whose prices are set using our 'building block' approach. This is because we generally use the financeability test when determining prices for these regulated businesses. These businesses include water utilities such as WaterNSW, the Sydney Desalination Plant, Sydney Water and Hunter Water.

This review may also affect other businesses for which we make pricing decisions, such as the Port Authority of NSW's cruise ship business.⁷

Table 3.1 in Section 3.3 lists all the price reviews IPART has conducted since 2013 with or without a financeability test.

The results of the test assist us in making regulatory decisions, and to determine what response we should take if financeability concerns arise. Additionally, only in specific circumstances would we make changes that affect prices. As such, the financeability test would not normally have a major impact on the customers of our regulated businesses.

2.3 Scope of this review

The review focussed on the framework of assessing a business's financeability, as well as the inputs and the process which we use to implement the financeability test. We considered the objectives of the financeability test and what changes to make to the 2013 test to better meet these objectives by considering:

- the inputs we use to conduct our test; in particular, whether we should use inputs that represent a benchmark efficient business and/or the regulated business's actual inputs
- potential improvements to our financial metrics and financial ratio benchmarks, and
- the process and framework for identifying and addressing a financeability concern.

We did not consider broader policy issues relating to how we conduct our building block approach as part of this review; for example, the approach of setting a real post-tax weighted average cost of capital and indexing the asset base for inflation as these were outside the scope of this review.

2.4 Our objectives for this review

In making our decisions for this review, we aimed to meet the following objectives:

- 1. To ensure the financeability test effectively assesses the impact of our pricing decisions on the short-term financial sustainability of the regulated business.
- 2. That our process for identifying and addressing a potential financeability concern supports efficient and prudent investment decisions by regulated businesses, and supports the long-term interests of consumers.

⁷ IPART, *Maximum fees and charges for cruise ships - Sydney Harbour – Final Report*, November 2016.

The financial sustainability of regulated businesses is necessary for continuing to provide services that are in the interests of consumers. At the same time, it is important that our decisions do not support imprudent and inefficient decisions by those businesses.

Threshold for changing the financeability test as a result of this review

Overall, we consider that the 2013 test is working well; however, in our view there were opportunities for improvements. We consider that the changes we have made in this report would:

- 1. better address our objectives for the test
- 2. increase transparency
- 3. avoid unnecessarily adding to the regulatory burden on the regulated business, and/or
- 4. avoid unnecessarily creating windfall gains or losses.

In particular, the changes we have made do not impose requirements on regulated businesses to supply additional data so we can calculate the financial metrics.

3 The financeability test framework

In this chapter we consider the objectives of the test, and given these objectives, what businesses we will conduct financeability tests for and the type of information we will consider in the test.

We discuss our final decisions to:

- continue to conduct a financeability test
- maintain two objectives for our financeability test, which are to ensure our pricing decisions would allow a benchmark efficient business to remain financeable, and assess the financial impact of our decisions on the actual business
- continue to use the criteria in our 2013 test to decide for which business we conduct a financeability test, and
- continue to use quantitative data to assess a business's financeability.

3.1 We will continue to conduct financeability tests

Final decision

1 That we will continue to conduct financeability tests.

This is consistent with our Draft Report to continue to conduct financeability tests, given that conducting the test has benefits that outweigh the costs.

3.1.1 Stakeholders agreed that we should conduct financeability tests

All stakeholders agreed that we should continue to conduct financeability tests. For example, the Public Interest Advocacy Centre (PIAC) agreed with the benefits of conducting the test that we identified in our Issues Paper, and supports "continuing to use [the] financeability test as a check of the output of the price determination process and not as an input in setting the allowed prices and/or rate of return for a regulated business."⁸

3.1.2 The benefits of the financeability test outweigh the costs

Our final decision is to continue to conduct financeability tests, as stakeholder feedback and our analysis both support this decision.

Our view is that our financeability test is effective, and the potential benefits of the test in highlighting a potential future financeability concern are high compared to the small regulatory cost of conducting the test.

⁸ PIAC submission to IPART Issues Paper, May 2018, p 1.

The benefits of the financeability test are significant

In our view the test has the following benefits:

- 1. When the test is based on financial inputs for a benchmark business, we can assess whether our pricing decisions would enable an efficient business matching our regulatory allowances to raise finance consistent with an investment grade rated business.
- 2. When the test is based on financial inputs from the actual business, we can assess whether the business can raise finance consistent with an investment grade rated business.
- 3. If we identify a financeability concern, it helps us decide what actions could be taken to address the concern.

In Chapter 4, we outline the differences between the benchmark and actual inputs we will use in the test. To summarise:

- In the benchmark test, we will use inputs from the Notional Revenue Requirement (NRR), including the benchmark gearing ratio and cost of debt we use to set the WACC.
- In the actual test, we will use the business's actual debt outstanding and forecast cost of debt, in addition to other inputs from the NRR (such as forecast revenues).

Because the benchmark test uses only inputs from the NRR, doing this test in isolation may not be particularly useful. The Australian Energy Regulator (AER) made this argument in reviewing its rate of return guideline.⁹ Box 3.1 outlines the overlap in using benchmark inputs for the financeability test.

Box 3.1 The benchmark financeability test

Our cost building block structure mimics a standard Profit and Loss (P&L) Statement. The NRR may be expressed as follows:

NRR = opex + (regulatory) depreciation + tax + return on debt + return on equity [1]

To calculate the financial metrics under our 2018 financeability test, we will rearrange equation [1] to create a P&L using the allowances from the NRR.

We calculate the return on equity (ie, profit after tax) as follows:

Profit = NRR – opex – (regulatory) depreciation – interest expense ^a – tax [2]

This highlights that if we only use benchmark inputs for the financeability test (based on equation [2]), the test may not provide much additional information on whether our regulatory allowance is sufficient for a benchmark efficient business. This suggests the financeability test may have limited use in assessing the NRR or the WACC set by IPART for a regulated business.

a In the benchmark test, the interest expense in equation [2] is equal to the return on debt in equation [1].

⁹ For further information, see AER, *Financial performance measures: Discussion paper*, February 2018, pp 29-30.

In our opinion, a benchmark test is useful in indicating a financeability concern where:

- 1. allowed capital expenditure is high relative to the size of the regulatory asset base
- 2. asset lives are set too high, and/or
- 3. the return on equity return is set too low.

A test using benchmark inputs could suggest that a business is not financeable if the allowed capital expenditure over the coming regulatory period is very high relative to the current regulatory asset base. In essence, if planned capital expenditure is very high relative to current revenue, the benchmark business's current cash flows may not be able to finance this investment in the short term. In this instance, the test reveals a mismatch in the regulated business's cash flows, although this shortfall is not expected to persist over time.

Overall, it is our view that if the weighted average asset life, return on assets allowance and the depreciation allowance are set appropriately, a benchmark business should be financeable.¹⁰ This is explored further in Appendix B, where we show the relationship between weighted average assets lives, return on equity and the FFO over Debt financial credit metric.

We consider the benchmark test is most useful when combined with an actual test, because it helps diagnose the source of potential financeability concerns.

The cost of the test is small

The financeability test requires the regulated business to provide forecasts for a number of inputs, in addition to the information required to determine the NRR in the building block approach. These inputs are the business's:

- forecast cost of debt
- current debt outstanding
- forecast dividend payments
- forecast superannuation liability, and
- forecast operating lease expense.

We consider that the cost of attaining these inputs is small given the benefits of the test in assessing the financial impact of our pricing decisions on the business, and potentially identifying and addressing a financeability concern before it occurs. In addition, our final decisions would increase the information provided by the financeability test, without increasing the inputs we require from the business.

¹⁰ Ofgem also made this observation in Ofgem, *Regulating energy networks for the future: RPI-X@20—Current thinking working paper—Financeability*, May 2010, p 10.

3.1.3 How did our 2013 financeability test perform?

While it is difficult to assess the performance of our financeability test, recent history suggests the 2013 test functioned as intended.

The 2013 test (which uses actual inputs) did not identify an issue for most of the regulated businesses we have set prices for. However, we did use this test to identify a potential financeability concern in our 2014 price review of Essential Energy's water and sewerage services (Essential Water) in Broken Hill.¹¹ The test allowed us to show that Essential Water's actual gearing was substantially higher than our benchmark (55 per cent), and that it would not be financially sustainable over the regulatory period unless it adopted a lower gearing level.¹²

3.2 Our objectives will consider both the benchmark and actual business

Final decision

- 2 That the objectives of the 2018 financeability test are to:
 - ensure our pricing decisions would allow an efficient investment grade rated business to raise finance and remain financeable during the regulatory period (benchmark test), and
 - assess whether the actual business would be financeable during the regulatory period (actual test).

Our final decision is to maintain the objectives proposed in our draft decision. Our objectives aim to assess whether our pricing decisions are consistent with a business maintaining a BBB target credit rating.

Our view is that the financeability test should consider the impact of our pricing decisions on both the benchmark efficient business and the actual business. This is because:

- conducting the test on the benchmark business would identify any estimation and cash flow impacts arising from our building block approach, and
- conducting the test on an actual business would generate a warning that the actual business might face a financeability concern over the course of the regulatory period.

Undertaking both tests would also assist in identifying the source of a financeability concern.

¹¹ IPART, Essential Energy's water and sewerage services in Broken Hill – Review of prices from 1 July 2014 to 30 June 2018 – Final Report, June 2014, pp 141-142.

¹² IPART, Essential Energy's water and sewerage services in Broken Hill – Review of prices from 1 July 2014 to 30 June 2018 – Final Report, June 2014, p 144.

3.2.1 Stakeholders broadly agreed with our objectives for the test

In our Issues Paper, we proposed that the objectives of the 2018 financeability test would be to:

- ensure our pricing decisions would allow an efficient investment grade rated business to raise finance during the regulatory period (benchmark test), and
- assess whether the utility would meet this benchmark (actual test) during the regulatory period.¹³

Stakeholders broadly agreed with these objectives, and to apply the financeability test to both a benchmark efficient business and the actual business. Most stakeholders suggested that the primary focus of the financeability test should be to assess the impact of our pricing decisions on the benchmark business.¹⁴

Some stakeholders suggested that the two objectives should be reframed slightly.

- SDP submitted that we could rephrase our first objective to emphasise that the financeability test should assess whether a benchmark efficient business would maintain an investment grade rating during the regulatory period. This is because the benchmark test should focus on whether a benchmark business can raise finance on reasonable terms (and in doing so promote the long-term interests of consumers).¹⁵
- Hunter Water submitted that it is unclear what benchmark is being referred to in the second objective.¹⁶

In response to stakeholder feedback to our Issues Paper, we redrafted these two objectives slightly to emphasise that the test will focus on whether a benchmark, or actual, business would remain financeable during the regulatory period. In other words, whether our pricing decisions are consistent with a business maintaining at least an investment grade credit rating.

In response to our Draft Report, SDP submitted that we should define "financeability" more clearly to mean whether a business can "maintain the BBB credit rating set by IPART in its pricing decisions".¹⁷

WSAA responded to our Draft Report stating that it "strongly supports the new objectives and testing with benchmark and actual inputs, and the scope of remedies provided. It is worth emphasising what an important evolution this is on IPART's past approach (and of other tests used by regulators in Australia)".¹⁸

In Chapter 5, we outline our final decision that we will retain a BBB target credit rating, which we have used to establish our target ratios. Therefore, the financeability test aims to assess whether our pricing decisions are consistent with an efficient business maintaining a BBB target credit rating.

¹³ IPART, *Review of our financeability test – Issues Paper*, May 2018, p 16.

¹⁴ For example, see submissions to IPART Issues Paper, June 2018 from NSW Treasury, p 1; SDP, pp 3-4; Sydney Water, pp 7-8.

¹⁵ SDP submission to IPART Issues Paper, June 2018, p 3.

¹⁶ Hunter Water submission to IPART Issues Paper, June 2018, p 7.

¹⁷ SDP submission to IPART Draft Report, September 2018, pp 19-20.

¹⁸ WSAA submission to IPART Draft Report, September 2018, p 4.

3.2.2 We will maintain our objectives

Given broad agreement from stakeholders, our final decision is to maintain the two objectives for the 2018 financeability test.

Chapter 4 discusses how we propose to implement both the benchmark and actual tests in further detail.

3.3 We will continue to use the 2013 criteria when we decide which businesses to test

Final decision

- 3 That we will conduct a financeability test if:
 - the prices we regulate determine the revenues of the service provider, and
 - the provider is established as, or part of, an entity with a distinct capital structure.

In the 2013 financeability review, we decided to conduct a financeability test if the prices we regulate determine the revenues of the business, and if the business has, or is part of an entity with, a distinct capital structure.

Since then, we have conducted a financeability test for most price reviews for regulated water utilities and for some businesses in the transport industry where we have used a building block approach to set revenues based on a regulatory asset base. Table 3.1 lists the price reviews where we have, and have not, conducted a financeability test since the 2013 financeability review.

Table 3.1 Pricing reviews since December 2013

Price reviews - building block approach and a Regulatory Asset Base

Eineneeshility test conducted No finaneeshility test conducted				
		NO 		
•	2017 Sydney Desalination Plant price review		2018 review of rural and regional bus services	
	2017 WaterNSW (Rural) price review		2018 review of private ferries fares	
•	2016 Sydney Water price review	•	Annual review of fares for private ferries (Pre-2018)	
•	2016 Hunter Water price review	•	2016 review of public transport fares in Sydney and surrounds	
▼	2016 WaterNSW (Greater Sydney) price review	▼	2016 review of prices for the Water Administration Ministerial corporation	
▼	2016 review of fees and site occupation charges for cruise ships in Sydney Harbour	▼	2014 review of fares for metropolitan and outer metropolitan bus services	
•	2014 Essential Energy's Broken Hill water and sewerage price review	•	2014 review of prices for land valuation services provided by the Valuer-General to councils	
Pri	Price reviews – no building block approach and no financeability test			
▼	Annual review of solar feed-in tariffs			
▼	Local government special variations			
▼	Annual update to net rates of return for domestic waterfront tenancies			
▼	Annual review of taxi fares in areas of NSW outs	ide (Sydney (Pre-2018)	
▼	Annual review of taxi fares and licences in Sydney (Pre-2018)			
▼	2018 review of taxi fares and licences			
▼	2016 review of the price for wholesale ethanol in NSW			
Special reviews – no financeability test				
•	2017 review of rent models for social and afforda	able	housing	
▼	2014 review of fees for NSW Trustee and Guard	ian		
▼	2014 review of tow truck fees and licensing in NSW (for accident and recovery towing services)			
▼	2014 review of rental arrangements for communi	icatio	on towers on Crown Lands	

Source: IPART.

In our Issues Paper, we asked stakeholders whether:

- they agreed with the criteria we used in the 2013 test to decide whether to conduct a financeability test for a specific businesses, and
- we have applied the financeability test to the appropriate price reviews since the 2013 review.

3.3.1 Stakeholder's supported our proposed criteria

Almost all stakeholders supported the criteria in the 2013 test that we have used to decide whether to conduct a financeability test, and generally agreed that we have applied the test to the appropriate price reviews.¹⁹

For example, WaterNSW submitted that it is "appropriate, as part of good regulatory practice, to undertake financeability tests as part of the price reviews for regulated water utilities" but, it can be difficult to apply a credit rating based financeability test where a regulated business does not have a regulated asset base and a notional capital structure.²⁰

3.3.2 We will continue to apply our 2013 criteria

Similar to the 2013 test, our final decision is to conduct a financeability test if:

- the prices we regulate determine the revenues of the service provider, and
- the service provider is established as, or part of, an entity with a distinct capital structure.

3.4 We will continue to focus on quantitative data

Final decision

4 That we will continue to use quantitative data to assess a business's financeability.

In our Issues Paper, we expressed a preliminary view that we should continue with a solely quantitative assessment of financeability, as this approach is more transparent for stakeholders and more compatible with our objectives for the financeability test. It is also consistent with the approach in the 2013 test.

3.4.1 Stakeholders had mixed views on the inclusion of qualitative factors

Stakeholders provided mixed feedback to our preliminary view.

On the one hand, Sydney Water and Hunter Water considered that IPART should include the qualitative factors used by credit rating agencies (such as Moody's) in our assessment of financeability, on the basis that:

- This would align our approach more closely to that taken by credit rating agencies. Hunter Water noted that the qualitative assessment of a water utility's business profile and financial policy has a 60% weighting in Moody's overall credit rating, and therefore IPART should have at least some regard to these elements.
- The majority of Moody's business and financial profile factors are factually based and do not require subjective judgements.²¹

¹⁹ An exception was Sydney Water's consultant, CEG, which disagreed stating that "We can see no reason why the test would not be applied as part of all regulatory determinations that are based on the assumption that the business finances itself on debt markets." Competition Economists Group, *IPART review of financeability test*, June 2018, p 6 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018).

²⁰ WaterNSW submission to IPART Issues Paper, June 2018, p 5.

²¹ See submissions to IPART Issues Paper, June 2018, from Hunter Water, p 9; Sydney Water, p 20.

On the other hand, SDP, WaterNSW, NSW Treasury and Essential Energy supported our view to continue with a solely quantitative assessment of financeability, citing the following reasons:

- The qualitative factors considered by ratings agencies are inherently subjective and involve considerable judgement, and for example, could involve IPART making assessments about the transparency and predictability of the regulatory environment.
- Including the qualitative aspects could reduce the transparency of our process, and make it more difficult for stakeholders to replicate our analysis.
- Other regulators that conduct financeability tests do not consider qualitative factors in their assessments.
- The role of the test is not to assess qualitative factors. WaterNSW submitted that:

The role of the financeability test should be as a check by the regulator to ensure, prior to making a pricing determination, that the revenue being provided to the regulated utility will leave it with sufficient financial strength, as measured through appropriate financial ratios, to obtain financing over the course of the regulatory period in question.²²

Our draft decision was to maintain our preliminary view. Stakeholder feedback to our draft decision was consistent with feedback to our preliminary view.

3.4.2 The objectives of the financeability test are best achieved by quantitative metrics

Our final decision is to continue to focus on quantitative information in assessing financeability. We agree with the analysis presented by stakeholders supporting only a quantitative assessment of financeability.

Credit rating agencies typically consider quantitative and qualitative factors in assigning a credit rating. To assess the impact of our regulatory decisions on the financeability of the business, we focus on quantitative information only. The objectives of the financeability test are to assess the financial impact of our pricing decisions on the benchmark and actual business. In our view, this objective is achieved by solely focusing on quantitative financial metrics, because:

- Our pricing decisions only directly impact on the financial health of the business over the regulatory period under review. This, in turn, is reflected through changes in the financial ratios calculated for the business over this period.
- Our pricing decisions do not directly affect qualitative factors, such as the business's ownership structure and quality of management. One of the key qualitative factors affecting our regulated businesses is their ownership. For government-owned regulated businesses, if we were to take this into account in our financeability assessment, we may introduce an unwarranted form of competitive non-neutrality.

By focusing only on quantitative factors, we can ensure that qualitative factors such as the business's ownership structure or management performance would not affect customer prices.

²² WaterNSW submission to IPART Issues Paper, June 2018, p 7.

4 Implementing the test

In this chapter, we present our final decisions on the inputs we propose to use to implement the actual and benchmark tests. We discuss our final decisions to:

- Use building block values for the level of gearing, cost of debt and inflation indexation in the benchmark test.
- Use the business's actual debt outstanding, forecast cost of debt and dividend payments in the actual test.
- Use the building block allowance for tax expense in the benchmark test, but to calculate the tax expense in the actual test.
- Make adjustments for operating lease expense and superannuation net liabilities in the actual financeability test only.
- Test the regulated portion of the business, as a default, in both tests.
- Focus the financeability assessment on the upcoming regulatory period.

The following sections present our final decisions on each of these issues. In Chapter 5, we discuss our final decisions regarding the financial ratios we would use and the cost of debt we will use for each test.

4.1 We will conduct separate benchmark and actual tests

Final decision

5 That we will conduct separate financeability tests, using the inputs for a benchmark efficient business and for the actual business.

In our Draft Report, our draft decision was that we should conduct separate financeability tests, using:

- benchmark inputs to test whether our pricing decisions would allow an efficient business to remain financially sustainable, and
- the actual inputs of the business (adjusted for inflation) to assess the impact of our pricing decisions on the actual business.

Our final decision is to conduct separate financeability tests using benchmark and actual inputs. The inputs in the benchmark test will be set consistent with the parameters in the building block approach. The inputs in the actual test will be based on the building block allowances in our decisions as well as the business's actual financial inputs.

4.1.1 Stakeholders agreed that we should conduct separate financeability tests

Stakeholders agreed that we should conduct separate financeability tests, and were generally of the view that IPART should focus on the benchmark test.²³ Specifically, NSW Treasury said:

We would expect the shareholders / rating agencies to be performing their own analysis ongoing on the actual inputs, however, we are not opposed to IPART using actual inputs as long as they do a separate test on the benchmark business.²⁴

4.1.2 We will use benchmark inputs for the benchmark test and actual inputs for the actual test

To conduct the financeability test, we require a range of financial inputs. To conduct the:

- Benchmark test: we will set the inputs consistent with the parameters in the building block approach, including the tax allowance and an allowance for inflation indexation, as well as use the real cost of debt and level of gearing in the WACC.
- Actual test: we will set some of these inputs using building block components (eg, operating expenditure and forecast revenues), but for others we would request financial data from the business that may be different to the inputs used to calculate our WACC. Overall, our approach for our actual financeability test is similar to the 2013 test.

Table 4.1 outlines the inputs used for the benchmark and actual tests and we discuss each of the key inputs further in the sections below.

	Benchmark test	Actual test
Revenue	Building block target revenue ^a	Building block target revenue ^b
Operating expenditure	Building block allowance	Building block allowance
Depreciation	Building block allowance	Building block allowance
Interest expense	Calculated using WACC real cost of debt and gearing	Calculated using forecast actual cost of debt and gearing
Tax expense	Building block allowance	Calculated tax expense ^c
Dividends	Calculated to maintain a constant benchmark gearing ratio	Forecast dividend payments
Inflation	Building block allowance	Zero, if debt is nominal

Table 4.1 Inputs for the benchmark and actual tests

a Often this is similar to NRR as it is usually a smoothed NRR and includes additional revenue shared with customers.

b Same as for the benchmark test but adds revenue not shared with customers and profit/loss from the sale of assets.

c We discuss the tax expense calculation in Section 4.3.

IPART will be the only regulator actively conducting both the benchmark and actual tests. Many regulators do not conduct a financeability test. In Australia, the Essential Services Commission (ESC) in Victoria does undertake a financeability test and bases it on inputs for the actual business. In the United Kingdom, Ofgem and Ofwat base their financeability tests on inputs for a benchmark efficient business. For further information on these different approaches, see Appendix D.

²³ For example, see submissions to IPART Issues Paper, June 2018, from WaterNSW p 5; Hunter Water p 6.

²⁴ NSW Treasury submission to IPART Issues Paper, June 2018, p 2.

Our final decision is to conduct both tests, as we believe that it maximises the usefulness of a financeability assessment. We consider that conducting the benchmark test is useful as a check that our regulatory decisions are robust and additionally may identify cash flow timing issues. Conducting both tests provides us with diagnostic information that can help identify the source of a financeability concern, enabling us to tailor a remedy specific to that concern.

To conduct our financeability test, we will calculate the credit metrics for the benchmark and actual tests. To do this, we will prepare three regulatory financial statements for both the benchmark and actual business:

- 1. Profit and Loss Statement
- 2. Balance Sheet Statement, and
- 3. Cash Flow Statement.

We will base these statements on the inputs as set out in Table 4.1 above. As a result, there is a direct link between the building block approach and the regulatory financial statements, particularly for the benchmark test. Box 4.1 details how we will prepare these regulatory financial statements.

Box 4.1 The link between the building block approach and the regulatory financial statements

When making our price determinations for regulated businesses, we often use a building block approach to determine the Notional Revenue Requirement (NRR). The NRR is the sum of:

- Regulatory Operating Expenditure (Opex)
- Regulatory Depreciation (Dep'n)
- Return on Assets (RoA) = WACC x RAB = Return on debt (RoD) + Return on equity (RoE)
- Return on Working Capital (RoWC) (this typically represents less than 1% of NRR), and
- Tax Allowance (TA).

In other words, if we omit the return on working capital (because it is small):

NRR = Opex + Dep'n + (RoD + RoE) + TA

Also, note that RoD is equivalent to the interest expense in the benchmark test and that:

RoD = real cost of debt x RAB x gearing, and

RoE = real cost of equity x RAB x (1-gearing)

Regulatory Profit and Loss Statement

The above components are used to prepare the Profit and Loss for the benchmark test as follows:

Revenue ^a (ie NRR)	less	Opex
= EBITDA	less	Dep'n
= EBIT	less	Interest expense (RoD)
= Profit Before Tax	less	ТА
= Profit after tax	equals	Return on equity (RoE)

The Profit and Loss Statement for the actual test is similar to that for the benchmark test until the EBIT line, and then can be quite different thereafter, depending on the cost of debt used and the tax calculation.

Regulatory Balance Sheet Statement

The Balance Sheet we prepare is high level, focusing predominantly on the debt profile (which is different for the benchmark and actual tests) and the RAB, in nominal terms, over the determination period (which is the same for both tests). We discuss this further in Section 4.2.

Regulatory Cash Flow Statement

Similarly, the Cash Flow Statement we prepare is mainly to obtain Funds From Operations (FFO), which is required to calculate the financial ratios for both tests. The Cash Flow Statement is different between the benchmark and actual test, due to the different assumptions for cost of debt, gearing and tax expense.

For the benchmark test, because it is based on the building block components and WACC inputs, we can show that:

FFO = Dep'n + RoE

We demonstrate the above relationship in Appendix B.

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a This is target revenue which is usually a smoothed NRR.
```

4.2 Cost of debt and gearing

Final decision

- 6 For the benchmark test, we will use the real cost of debt and level of gearing in the WACC and include the allowance for inflation indexation over the regulatory period.
- 7 For the actual test we will use the business's current debt outstanding, forecast interest paid and dividend payments.

In this section we discuss our final decisions on how we will calculate the business's interest expense and gearing ratio in the two tests. In response to stakeholder concerns, we have decided to use a real cost of debt for the benchmark test only and use the business's actual cost of debt for the actual test.

In Section 5.2, we discuss our final decision to calculate our financial ratios on the assumption that the business is financed using a real cost of debt for the benchmark test.

4.2.1 Most stakeholder's disagreed with our position to conduct the financeability tests using a real cost of debt

Consistent with submissions to the Issues Paper, most stakeholders disagreed with our draft decision to calculate a financeability test using a real cost of debt (for either the benchmark or actual test). SDP, NSW Treasury, Sydney Water and Hunter Water all stated that the financeability test should use a nominal cost of debt because nominal bond debt funding is the most common and liquid source of debt in Australia.²⁵ Further, SDP said

Since a benchmark efficient business in SDP's circumstances cannot feasibly manage cash flow risk arising from delayed recovery of compensation for inflation, SDP considers that the financeability test should allow for the identification of financeability problems that are created by the way IPART compensates businesses for inflation.²⁶

Stakeholders argued, again, that there is no significant market for inflation-indexed corporate bonds in Australia. Sydney Water stated that "IPART's use of the real cost of debt ... introduces unnecessary risk to the regulated businesses."²⁷

WaterNSW held a different opinion to its peers, stating that regulated "...businesses can manage the inflation compensation timing mismatch ... through the use of financial instruments such as inflation swaps and low-coupon bonds".²⁸

In response to stakeholder concerns, our final decision is to assume a real cost of debt in our financial ratios for the benchmark test only. We will use the business's actual cost of debt for the actual test. This is discussed further in Section 5.2.

²⁵ See submission to IPART Issues Paper, June 2018, from SDP, p 6; NSW Treasury, p 2; Sydney Water, p 2; Hunter Water, p 9.

²⁶ SDP submission to IPART Issues Paper, June 2018, p 6.

²⁷ Sydney Water submission to IPART Draft Report, September 2018, p 4.

²⁸ WaterNSW submission to IPART Issues Paper, June 2018, p 6.

4.2.2 The regulated business's debt profile

To conduct a financeability test, we need to combine our regulatory decisions with assumptions about how the business finances itself and construct a debt profile over the next regulatory period. We then use this debt profile, combined with a set of regulatory financial statements, to calculate our financial ratios.

To construct the benchmark and actual tests, we need to answer the following questions:

- 1. What is the starting value of debt in each test?
- 2. How do we extrapolate debt over the regulatory period?
- 3. What is the business's interest rate to apply to the outstanding debt in each year?

Table 4.2 below summarises our final decisions on the debt profile we use in the benchmark and actual tests.

_	-	
	Benchmark test	Actual test
Starting value of debt	Benchmark gearing ratio × RAB	The business's current debt outstanding
Debt profile over the regulatory period	 The benchmark gearing ratio is maintained Dividends are paid out to maintain the benchmark gearing ratio Allowance for inflation included separately 	 The business's projected dividends are used as a default The value of debt is calculated as a result Allowance for inflation not included if interest expense is nominal
Interest rate	Real cost of debt	Actual cost of debt

Table 4.2 Calculating the debt profile for the benchmark and actual tests

The starting value of debt in each test

We propose calculating the starting value of debt as follows:

- ▼ For the benchmark test, we would assume that the benchmark business gears itself at the benchmark gearing ratio that we used in estimating the NRR (eg, 60% of the RAB).
- For the actual test, we would use the business's current debt outstanding.

Note that the value of the RAB is a regulatory decision, and would be the same in the two tests.

For the benchmark test, we would assume a zero opening cash balance. For the actual test, we would assume that cash is used in the initial period to pay down debt (in effect, the actual test is calculated on a net debt basis).

The business's debt profile over the regulatory period for each test

We need to construct a profile of debt over each year of the next regulatory period. To do this, we estimate equation (1):

$$D_{t+1} = D_t + r_t + \varepsilon_t + inf_t + exp_t - NRR_t + adj_t$$
(1)

where:

- *t* is the time period
- *D* is debt
- *r* is the real return on debt
- ε is the real return on equity
- *inf* is inflation, which can be split into a component which is capitalised into the future value of debt (*inf*(*d*)) and equity (*inf*(ε)), ie, *inf*= *inf*(*d*)+*inf*(ε)
- *exp* is cash expenses (operating costs, capital expenditure and the tax allowance)
- NRR is the business's revenue requirement in the year, and
- *adj* is any adjustments that we need to make to the data.

In words, equation (1) says that the value of debt in the next year of a regulatory period is the value of debt in the previous year, plus the expenses the business incurs less the revenue it receives over the year.

For the benchmark test, we propose that a benchmark business would hold its gearing ratio at the benchmark level through the regulatory period. If we make this assumption, it means that the level of all variables in equation (1) except for the return on equity (ε) are set. The implication is that the only way to make equation (1) balance is to calculate the profits that are not reinvested (i.e. the dividends paid) as a residual. All dividends are assumed to be paid out (or in) as required to maintain a constant benchmark gearing ratio.

- A positive dividend payout ratio implies that the indexation and growth in the RAB is greater than the growth in the debt profile, and
- A negative dividend payout ratio implies the business requires equity injections to maintain a constant benchmark gearing level, because the debt profile is growing at a greater rate than the indexation and growth in the RAB.

For the actual test, we could calculate the value of debt outstanding by the following options:

- 1. Using the business's forecast dividend payments, and calculating debt in the following period endogenously.
- 2. Using the business's forecast debt, or gearing ratio.
- 3. Holding the business's debt gearing constant at its current level, similar to the benchmark test.
- 4. Making an assumption about the level of dividend payouts (for example, the 2013 test assumes a 70% payout ratio), and given this, calculating debt endogenously.

For the Draft Report, we adopted option 1 as a default, because in our view it was more consistent with testing the impact of our decisions on the actual business (and how it intends to finance its operations). However, SDP submitted that it "disagrees with the requirement to disclose forecast dividend payments."²⁹ Instead, SDP suggests that businesses provide forecasts of debt levels for each year:

thus obviating the need to provide \dots sensitive forecasts of dividends, and avoiding the need for IPART to derive estimates of future debt levels that may not actually match the levels of debt that the business intends to raise over the regulatory period.³⁰

We understand SDP concerns, and have addressed these concerns as follows. As a default, we will adopt option 1, and will request the business's forecast dividend payments to calculate debt over the regulatory period endogenously.

However, if it is not practical or feasible to provide this data, we will liaise with the business to obtain a future debt profile (option 2). However, we may need to adjust this debt profile to the extent our regulatory allowances are inconsistent with the business's proposed allowances.

If we use option 1, we could then use option 4 as a scenario to inform our response to any financeability issue that arises due to dividend forecasts. We could use the business's historical payout ratio, or liaise with the owner of the business (such as NSW Treasury) to form an alternative assumption about dividend payouts. Alternatively, if we use option 2, the resulting debt gearing level will inform our response to any financeability issue due to the impact of the business's forecast debt profile.

The business's interest rate for each test

To construct the debt profile over the next regulatory period, we need to decide what interest rate to apply to the outstanding debt in each year.

- For the benchmark test we will use the real cost of debt in the WACC.
- For actual test we will use the business's actual forecast cost of debt.

4.3 The tax expense

Final decision

- 8 That we will use the tax allowance (before franking credits) from the building block as the tax expense for the benchmark test.
- 9 That we will calculate the tax expense for the actual test using the process outlined in Table 4.3.

Our final decision is that we will use the tax allowance (before franking credits) from the building block approach as the tax expense in the benchmark test. For the actual test, we will calculate the tax expense (maintaining the approach used in the 2013 test).

²⁹ SDP submission to IPART Draft Report, September 2018, Attachment 3, p 1.

³⁰ SDP submission to IPART Draft Report, September 2018, p 20.

4.3.1 Stakeholders had limited feedback on the tax expense

In the Issues Paper, our preliminary position was to calculate the tax expense for both the benchmark and actual tests using the same calculation, which is different to how we calculate the tax allowance in the building block approach.

CEG (on behalf of Sydney Water) commented that tax payments should include the best estimates of tax paid on taxable income given benchmark assumptions.³¹ WaterNSW raised concerns with our preliminary position in the Issues Paper, stating that the approach should be consistent with the assumptions of the test being applied. In particular, for the benchmark test, we should utilise the same assumptions for the tax allowance as we would for the NRR.³²

In response to stakeholder comments to our preliminary position in the Issues Paper, we changed our approach for the benchmark test for the Draft Report. Our draft decision was to use the tax allowance for the tax expense in the benchmark test, as this is consistent with the assumptions of the building block approach. Stakeholders agreed or did not comment with this draft decision.

4.3.2 We will calculate the tax allowance consistently with the assumptions of the test

We maintain our draft decision to use the tax allowance (before franking credits) for the tax expense in the benchmark test. Under the building block approach the tax allowance included in the NRR is the tax expense for the benchmark efficient business.

For the actual test we observe that we cannot use the business's forecast tax, because our pricing decisions directly affect the tax expense and could be different from the proposal put forward by the business. Therefore, we will estimate the tax expense taking into account actual factors such as the business's gearing and cost of debt as well as income from other sources such as asset sales and unregulated income.

Table 4.3 outlines our method for calculating tax for both the benchmark test (which is how we calculate the tax allowance in the building block approach) and the actual test.

³¹ Competition Economists Group, *IPART review of financeability test*, June 2018, p19 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018).

³² WaterNSW submission to IPART Issues Paper, June 2018, p 6.
	Benchmark test	Actual test	
Taxable income			
Regulatory revenue	Target revenue (usually smoothed NRR)	Target revenue (usually smoothed NRR) plus regulatory revenue not shared with customers	
Cash capital contributions	Included	Included	
In-kind capital contributions	Included	Included	
Profit/loss from asset sales	Proportion shared with customers (usually 0%)	Total profit/lo	
Deductible costs			
Operating costs	Forecast regulatory opex	Forecast regulatory opex	
Depreciation	Tax depreciation	Tax depreciation ^a	
Net interest payments	Based on benchmark gearing ratio and the nominal cost of debt in the WACC	Based on actual gearing ratio and cost of debt	

Table 4.3 Calculating the tax expense in the financeability tests

a The 2013 test uses RAB depreciation when estimating tax payments; however, we will use tax depreciation.

4.4 Adjust actual financial inputs for operating lease expense, superannuation net liability and inflation accretion

Final decision

10 That we will make adjustments for operating lease expense, superannuation net liabilities and inflation accretion in the actual test only.

We have maintained our draft decision to continue to make adjustments for operating lease expense and for the forecast net liability from employees on a defined benefit scheme (the superannuation net liabilities) in the actual test only.

4.4.1 Stakeholders requested that the adjustments are consistent with Moody's methodology

Stakeholders supported the continuation of the adjustments we make as part of our 2013 financeability test. NSW Treasury, CEG (on behalf of Sydney Water), Hunter Water and SDP added that IPART's test should stay abreast of changes in Moody's adjustments.³³ Hunter Water argued we should make adjustments for capitalised interest and unusual and non-recurring items,³⁴ as done by Moody's while NSW Treasury suggested we should consider the treatment of managed service contracts, in light of the upcoming accounting changes for operating leases.³⁵

³³ See submissions to IPART Issues Paper, June 2018, NSW Treasury, p 2; Hunter Water, p 8; SDP, p 9 & p 16; and Competition Economists Group report on *IPART review of financeability test*, June 2018, p 12.

³⁴ Hunter Water submission to IPART Issues Paper, June 2018, p 8.

³⁵ NSW Treasury submission to IPART Issues Paper, June 2018, p 2.

CEG noted that these adjustments are not required for the benchmark test and are "only necessary or sensible if the test is being performed on the actual financing strategy of the business".³⁶

4.4.2 We will only make adjustments to the actual test

We have decided not to make any adjustments to the benchmark test. This means we are assuming that a benchmark efficient business would:

- maintain a gearing ratio at the benchmark level, taking into account any operating leases, and
- not manage a defined benefit scheme on its balance sheet.

We would continue to make adjustments for the operating lease expense and superannuation net liability in the actual test.

Hunter Water also suggested that we should make an adjustment for capitalised interest.³⁷ The way we prepare our financial statements, including the way we calculate the debt profile (see equation (1)), effectively accounts for this adjustment over the regulatory period. This is because any interest expense that is not paid is automatically capitalised into debt in the following period. Therefore, we do not need to consider any further adjustments to our financeability test for capitalised interest.

Should a regulated business have inflation-linked bonds or other similar instruments, as part of its funding structure, these are typically included as a nominal interest expense on the business's Profit and Loss Statement. Depending on the interest rate provided to us by the regulated business, it may be appropriate to deduct the indexation (or inflation component) from the interest expense for the actual financeability test. We will ensure that we reflect the business's actual cost of debt (which will incorporate the blend of nominal and real debt that the business actually holds) for the interest paid amount in the Regulatory Cash Flow Statement. We discuss this further in Section 5.2.

³⁶ Competition Economists Group, *IPART review of financeability test*, June 2018, p 11 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018).

³⁷ Hunter Water submission to IPART Issues Paper, June 2018, p 8.

4.5 We will test the regulated portion of the business

Final decision

- 11 That, as a default, we will conduct both financeability tests on the portion of the business for which we are setting prices.
- 12 That we will consider on a case-by-case basis whether to conduct the actual test using financial data for the whole business.

We maintain our draft decision to conduct the financeability test on only the portion of the business for which we are setting prices. In the Draft Report, we added that we would consider on a case-by-case basis whether to conduct the actual test using financial data for the whole business.

4.5.1 Stakeholders agreed to test only the portion for which we set prices

All stakeholders agreed that we should conduct the financeability test on the portion of the business for which we set prices, particularly for the benchmark test.

WaterNSW agreed and stated that:

As a default, the financeability test should apply to only the regulated portion in question. Testing the entire business may mask financeability issues and result in cross subsidisation.³⁸

NSW Treasury also suggested that if the non-regulated part of the business is "immaterial" then we should calculate the financeability test using inputs for the whole business if it is easier to do so.³⁹

4.5.2 We may conduct the test on the whole business

As noted in the Draft Report, the businesses that we regulate are sometimes subsidiaries of a larger entity. For example:

- Essential Water is a subsidiary of Essential Energy (regulated by the AER)
- WaterNSW has two regulatory businesses (one for Greater Sydney and the other for rural water), and
- Central Coast Council has separate funds for water and sewerage, and for services funded by council rates.

In these cases, we could conduct our financeability test using:

- the gearing ratio and the cost of debt for the portion of the business for which we are setting prices (ie, the regulated portion of the business), or
- the gearing ratio and cost of debt across the whole business.

³⁸ WaterNSW submission to IPART Issues Paper, June 2018, p 5.

³⁹ NSW Treasury submission to IPART Issues Paper, June 2018, p 2.

However, when setting prices, our focus is to promote efficiency within the regulated portion of the business. Therefore, our final decision is to focus our assessment for both tests to the portion of the business for which as set prices.

In some cases, it may be appropriate to consider the whole business when conducting the actual test. We will do this on a case-by-case basis and in making this decision, consider evidence and analysis provided by the regulated business, as well as having regard to the views of other stakeholders.

4.6 Focus the financeability test on the upcoming regulatory period

Final decision

13 That we will assess a business's financeability over the upcoming regulatory period unless a financeability concern arises.

We maintain our draft decision to assess a business's financeability over the upcoming regulatory period.

4.6.1 Stakeholders agreed with our focus on the upcoming regulatory period

All stakeholders that commented on this issue agreed that we should focus on the upcoming regulatory period.

4.6.2 We may extend our analysis over a longer period if we identify a financeability concern

Our position has not changed since the Issues Paper where we argued that a short-term assessment of financeability is appropriate because:

- it is difficult to accurately forecast cash flows and debt obligations beyond the upcoming regulatory period, and
- the purpose of the financeability test is to identify if the prices we set over the upcoming regulatory period are likely to provide sufficient cash flows for the business to meet its debt obligations and maintain an investment grade credit rating.

However, if we identify a financeability concern, we will extend our time period for analysis to include two to three years before and after the upcoming regulatory period, provided robust forecasts are available.

5 Financeability assessment

This chapter presents our final decisions on the ratios we would use for the benchmark and actual financeability tests, and the benchmark, or target, values for each ratio.

We discuss our final decisions to:

- Retain a BBB⁴⁰ target credit rating.
- Calculate the Real Interest Coverage Ratio, Real Funds From Operations over Debt ratio and gearing ratio⁴¹ for the benchmark test.
- Calculate the Interest Coverage Ratio, Funds From Operations over Debt ratio and gearing ratio for the actual test.
- Calculate the financial ratios for the benchmark test on the assumption that the business incurs a real interest expense and for the actual test using the actual interest paid of the business.
- Establish a single target ratio for each financial ratio in the benchmark and actual test.
- Present a clear process for how we assess the financial ratios, highlighting at what points and how we would apply judgement in our assessment.

5.1 Our target credit rating is BBB

Final decision

14 That we will continue to use a BBB target credit rating across all industries.

We maintain our draft decision to use the same target credit rating in the financeability test as used when setting the WACC. This target credit rating ensures consistency with the WACC and achieves the objectives of the financeability test to assess whether the regulatory decisions are sufficient to maintain the financeability of a benchmark efficient business.

We use the S&P Global BBB credit rating when setting the WACC. An S&P Global BBB credit rating is equivalent to a Moody's Baa2 credit rating and a Fitch Rating BBB credit rating.

⁴⁰ We use a BBB credit rating when setting the WACC. An S&P Global BBB credit rating is equivalent to a Moody's Baa2 credit rating.

⁴¹ The gearing ratio would be fixed at the gearing level used to set the WACC for the benchmark test.

5.1.1 Stakeholders agree with a BBB target credit rating

All stakeholders agreed with using a BBB target credit rating.

5.1.2 We use a BBB target credit rating across all industries

To decide whether a regulated business passes the financeability test, we need to establish a target credit rating. We can then compare the business's financial metrics against the target ratio values we establish for this target rating. Our 2013 financeability test uses a target credit rating of BBB (which is equivalent to a Baa2 Moody's rating). A BBB credit rating is investment grade and this is consistent with the objectives of the 2018 financeability test. We also use a BBB credit rating to set the WACC.

As stated in our 2017 WACC Method Final Report, we consider the BBB credit rating is the "most appropriate because we consider that the BBB rating will, on average, provide an efficient estimate of the WACC." We also decided to adopt a single credit rating for all industries we regulate because it is not feasible to estimate an industry credit rating for a benchmark efficient business accurately.⁴²

We see no reason to change from this approach and will therefore continue to use a BBB target credit rating across all industries that we regulate for the financeability test.

5.2 The financial ratios we will calculate

Final decision

- 15 That for the benchmark test, we will calculate the financial ratios assuming the real cost of debt and gearing set in the WACC.
- 16 That we will calculate the following ratios for the benchmark test:
 - Real Interest Coverage Ratio (RICR).
 - Real Funds From Operations (RFFO) divided by Debt ratio.
 - Debt divided by RAB, or gearing, ratio (which is fixed for the benchmark test).
- 17 That for the actual test, we will calculate the financial ratios using the business's actual cost of debt and gearing level.
- 18 That we will calculate the following ratios for the actual test:
 - Interest Coverage Ratio (ICR).
 - Funds From Operations (FFO) divided by Debt ratio.
 - Debt divided by RAB, or gearing, ratio.
- 19 That we will calculate the Return on Capital Employed as a check to the WACC in the benchmark test.

⁴² IPART, *Review of our WACC method*, February 2018, p 46.

For our 2013 financeability test, we calculated three financial ratios:

- 1. **Interest Coverage Ratio (ICR)** This is calculated as Funds From Operations (FFO) plus interest expense divided by interest expense. This ratio measures a business's ability to service its debt burden using the business's cash flows.
- 2. **Debt gearing (gearing)** This is calculated as debt divided by the regulatory value of fixed assets, ie, the RAB. It measures a business's leverage.
- 3. **FFO divided by Debt ratio** This is a more dynamic measure of leverage than debt gearing because it measures a business's ability to generate cash flows to service and repay debt.

Our 2013 test ranked these three measures, placing more emphasis on the first two ratios over the third.

Our draft decision was to replace the ICR ratio with the Adjusted Interest Coverage Ratio (AICR), adjust the FFO over Debt ratio (so that it assumes a real cost of debt) and retain the gearing ratio. For the benchmark test, the gearing ratio was fixed at the gearing level used to set the WACC. The AICR ratio we proposed in our Draft Report differed from the ICR in that it assumed a real cost of debt in the calculation. In addition, when calculating the adjusted FFO over Debt ratio, our draft decision was to assume a real cost of debt, in both the benchmark and actual test.

For the actual test, our draft decision was that we would also calculate the unadjusted ICR and FFO over Debt ratio (ie, assuming a nominal cost of debt) as a diagnostic tool. Our view was that calculating these metrics on both a real and nominal basis would assist us to diagnose the source of any financeability issues and identify the impact of issuing nominal debt on the business's financeability.

Our final decision is to use the adjusted financial metrics for the benchmark financeability test only and use the unadjusted financial metrics for the actual financeability test. In the following sections we discuss why we have assumed a real cost of debt to calculate the financial ratios for the benchmark business and why we have decided to use the actual cost of debt in the actual test.

5.3 Real cost of debt

When we calculate the financial ratios for the benchmark test, we have retained our draft decision to use a real cost of debt. This is because our real WACC framework compensates a business for inflation over future periods through the RAB. Our decision to use a real cost of debt for the benchmark test ensures that:

- We do not overstate the financeability concerns of the business (due to double counting of inflation).
- We adopt a consistent approach to assess financeability across different businesses. In practice, businesses operate with a wide variety of financing strategies, and their interest expense may include a blend of nominal and real debt.
- The actual financing strategy of the business does not influence our pricing decisions and therefore customer bills.

However, given that businesses may not have real debt funding, our final decision for the actual test is that we will calculate the financial ratios using the business's actual cost of debt (which will incorporate the blend of nominal and real debt that the business actually holds). Comparing the results of the benchmark test with the results of the actual test can then be used to analyse the impact of issuing nominal bonds on the business's financeability.

5.3.1 Stakeholders disagreed with using a real cost of debt in the financeability test

As outlined in Section 4.2, most stakeholders disagreed with our draft decision to calculate a financeability test using a real cost of debt and strongly argued for the use of a nominal cost of debt for both the benchmark and actual tests. In summary, the main arguments stakeholders put forward were that:

- In practice, public and private sector businesses do not manage cash flow timing differences by issuing real coupon bonds, and instead issue nominal debt.⁴³
- It is not feasible for privately-owned businesses to issue inflation-indexed debt in Australia because there is no market for such debt at the present time.⁴⁴
- When Moody's provides credit ratings assessments for Australian businesses, it uses a nominal interest expense, and therefore, we should also use a nominal interest expense.⁴⁵

Further, SDP argued IPART should not use a real cost of debt for the financeability test:

If businesses cannot issue inflation-indexed debt to align their actual interest costs to the regulatory allowance, then it would be inappropriate for Moody's to use the real cost of debt when conducting credit rating assessments.⁴⁶

WaterNSW was the exception, stating that regulated businesses could manage the inflation compensation timing mismatch.⁴⁷

5.3.2 Our analysis supports a real cost of debt

In calculating our financial ratios for the benchmark test, we have made a final decision to assume a real cost of debt because:

- it would be more consistent with our real WACC method, meaning that inflation is not double counted in the financeability test
- it applies a consistent approach in calculating our financial ratios across regulated businesses, and
- the actual mix of real or nominal debt of the business should not influence our pricing decisions and therefore customer bills.

In addition, our analysis shows that adopting a real cost of debt for the benchmark test does not necessarily require a financing strategy that is based only on inflation linked debt.

⁴³ See submissions to IPART Draft Report, September 2018, NSW Treasury, p 2; SDP, p 5; Sydney Water, p 4.

⁴⁴ SDP submission to IPART Draft Report, September 2018, pp 6-7.

⁴⁵ See submissions to IPART Draft Report, September 2018, SDP, p 5; Sydney Water, p 1-3; Hunter Water p 7.

⁴⁶ SDP submission to IPART Issues Paper, June 2018, p 7.

⁴⁷ WaterNSW's submission to IPART Issues Paper, p 6; WaterNSW's submission to IPART Draft Report, p 1.

A real cost of debt is more consistent with our real WACC method

Under our real WACC approach, we provide the business with a real return on assets, as the return for inflation is capitalised into the RAB over time. Under the benchmark test, we assume a constant gearing ratio over time, which means the impact of inflation is similarly capitalised into the value of debt.

If we use a nominal cost of debt in the financeability test, we would, at least initially, overstate financeability concerns.

- Over time, the RAB and benchmark level of debt increases as inflation is added to the RAB (to maintain a constant level of gearing).
- However, the nominal financial ratios assume that debt stays constant in nominal terms, with the inflation component returned to debt holders in the current period.

Therefore, using a nominal cost of debt to calculate the ratios for a benchmark business that maintains a constant debt to RAB gearing ratio would overstate that business's financeability concerns. This is because the level of debt is higher than it would be if it issued nominal debt.

Figure 5.1 below demonstrates this situation by plotting the ICR (using a nominal cost of debt) under two scenarios:

- 1. a nominal WACC framework (grey line), and
- 2. a real WACC framework (blue line).



Figure 5.1 Nominal Interest Coverage Ratios

Note: Assumes a 40-year asset; a real cost of debt of 2.5%; and a real cost of equity of 6% **Data source:** IPART analysis

The ICR is consistently higher under a nominal WACC approach, which implies the business's financeability is stronger under a nominal WACC framework. However, under both scenarios, the business recovers the same revenue over the life of the asset in present value terms, which means the business's financeability is actually the same under the two scenarios, **on average**.

Note that the only difference between the scenarios is that, under a nominal WACC framework, the revenue allowance is front-loaded as shown in Figure 5.2.



Figure 5.2 Nominal Revenue Allowance

Note: Shows the revenue allowance, in nominal dollars, for a single \$100 asset with a 40-year life **Data source:** IPART analysis

The reason why the business appears to be worse off under a real cost of debt framework is because we applied nominal ratios to a business maintaining a constant debt to RAB ratio of 60% (with a RAB that increases with inflation). In effect, the nominal financial ratios assume that inflation is paid back to debt holders in the current period, but the real WACC framework assumes it is being paid back in the future. Using a real cost of debt in the financeability test is consistent with our real WACC methodology, because it acknowledges that the business will be compensated for inflation over time.

Our consultant, Incenta, agreed that there is a potential double-counting of the inflation component. In its report, it states that:

if a firm maintains the regulatory benchmark stock of debt, it would have an additional source of cash flow that is ignored in the interest cover calculation.

- If the firm raised inflation linked debt so that debt automatically tracked the benchmark, then the firm's (cash) coupon payments would only reflect the real component of the cost of debt, with the inflation being capitalised into the stock of debt.
- Alternatively, if the firm raised fixed rate debt, then it could nonetheless maintain the regulatory benchmark by raising the new debt to match the inflation indexation component. This would then generate additional cash flow in the form of an increase in net borrowings.

Indeed, the two strategies noted above could be structured to deliver the same cash flow outcome in an ex ante sense (ex post, differences would exist because of differences between forecast and actual inflation).⁴⁸

⁴⁸ Incenta Economic Consulting *Review of IPART's financeability test* October 2018, p 12.

Using a real cost of debt does not imply a 100% inflation linked bond funding strategy

Many stakeholders criticised the use of a real cost of debt in the financeability test, stating that it is "neither efficient nor feasible"⁴⁹ for businesses to adopt a 100% inflation linked bond funding strategy. NSW Treasury observed that in the UK, "the UK water utilities have less than 50% of the notional balance of the debt portfolio in inflation linked debt or inflation-linked swaps".⁵⁰

We, and our consultant, agree "that it would be neither possible nor prudent for an Australian regulated utility to finance the entirety of its debt in inflation-linked terms".⁵¹ Using a real cost of debt in the calculation of the financial metrics does not imply a particular funding arrangement. Rather, as noted by Incenta, it:

- assumes that the benchmark business will maintain its stock of debt at the benchmark assumption (ie a fixed percentage of the RAB), and will finance via the efficient means to achieve this, and
- takes into account the cash inflow this generates when assessing the business's ability to meet interest payments.⁵²

This observation supports our view that the benchmark test can be implemented using the real cash flows we set in the WACC, independent of the actual funding strategy employed by the business. To clarify, we set the return on capital allowance for a benchmark efficient business in the building block framework and are not prescriptive on how the actual business should fund itself. This means that the benchmark test applies a consistent approach in calculating our financial ratios across the regulated businesses.

A real cost of debt in the benchmark test will help assess the financing strategies of the business

It is important to adopt a consistent approach in calculating our financial ratios. Using a real cost of debt for the benchmark test for all businesses removes the impacts of different financing strategies, ensuring the results are comparable. However, for the actual test we will use the actual cost of debt of the business. Through our consultation, we note that businesses use a range of financing arrangements. For example, WaterNSW has arranged low coupon financing to match a real cost of debt framework; Sydney Water has a mix of nominal and real debt funding; and other stakeholders indicated a reliance on nominal debt funding.⁵³ By comparing the results of both tests, we can estimate the impact of the financing strategies of the business on its financeability, including the level of gearing adopted and the mix of nominal and real debt.

⁴⁹ SDP submission to IPART Draft Report, September 2018, p 6.

⁵⁰ NSW Treasury submission to IPART Draft Report, September 2018, p 3.

⁵¹ Incenta Economic Consulting *Review of IPART's financeability test* October 2018, p 11.

⁵² Incenta Economic Consulting *Review of IPART's financeability test* October 2018, p 11.

⁵³ See submission to IPART Issues Paper, June 2018, WaterNSW p 6; and submissions to IPART Draft Report, September 2018, SDP, p 6 and Sydney Water, p 4.

5.3.3 Use the business's actual cost of debt in the actual test

In response to stakeholder feedback, we have changed our draft decision for the actual test. For the actual test, we have decided to calculate the financial metrics using the business's actual cost of debt (and not adjust for inflation). For the benchmark test, we will continue to use a real cost of debt when calculating the financial metrics.

We consider that conducting the actual test using the business's actual cost of debt, rather than a real cost of debt, could provide more useful information about the business. In our workshop with key stakeholders in October 2018, stakeholders noted that if the actual business faced a financeability concern, in practice, the business would resolve the issue by deleveraging, even if IPART did not make adjustments to its decisions. Basing the test on the business's actual debt structure and cost of debt would provide directly relevant information to the business, which the business could use for its own analysis.

5.4 Our financial ratios

In this section we present our decisions to:

- Calculate the ICR, FFO over Debt and gearing ratios in the actual test.
- Calculate the RICR, Real FFO over Debt and gearing ratio in the benchmark test, and analyse the method we will use to calculate these ratios.
- Calculate the Return on Capital Employed as a check in the benchmark test, but not to include it as a ratio in the financeability test.
- Not calculate other ratios proposed by stakeholders.
- Rank these financial metrics to place more emphasis on the RICR, ICR and the two FFO over Debt ratios.

5.4.1 Stakeholders were supportive of keeping the ratios in the 2013 test

Stakeholders generally suggested that we retain our current ratios, ie, ICR, FFO over Debt and gearing ratios. However, many stakeholders were not in favour of the adjusted ratios proposed in our Draft Report. WSAA said that we "should rely on existing well understood credit metrics used by Moody's and other agencies for rating Australian water utilities, rather than creating a bespoke set to suit its regulatory approach."⁵⁴

Many stakeholders suggested additional ratios that we could consider:

 Sydney Water, Hunter Water, Water Services Association of Australia (WSAA) and WaterNSW suggested we also include the retained cash flow to net debt ratio (RCF over debt), to be consistent with the ratios that Moody's considers in its credit rating assessments.⁵⁵

⁵⁴ WSAA submission to IPART Draft Report, September 2018, p 4.

⁵⁵ See submissions to IPART Issues Paper, June 2018, Hunter Water p 11; WaterNSW p 7; and Competition Economists Group report on *IPART review of financeability test*, June 2018, p 22. See also submissions to IPART Draft Report, September 2018, Hunter Water p 9; and WSAA p 5.

- WaterNSW also proposed that we calculate equity ratios (such as the Return on Capital Employed, or ROCE, ratio), to check that our building block model is providing the appropriate return on equity.⁵⁶
- Treasury proposed that we include the Debt Service Coverage Ratio (DSCR).⁵⁷ SDP repeated its request that "businesses should be allowed to propose additional metrics such as DSCR if a strong case could be made for the relevance of those metrics..."⁵⁸

5.4.2 We will calculate three ratios

Table 5.1 summarises the ratios we would use for the benchmark and actual tests and the ratios used in our 2013 test, with our reasoning for including the ratios in our financeability test outlined below.

	2018 Final Report		
2013 test	Benchmark test	Actual test	
Interest Coverage Ratio	Real Interest Coverage Ratio (RICR) (assuming a real cost of debt)	Interest Coverage Ratio (ICR) (using actual cost of debt)	
FFO/Debt	Real FFO over Debt (assuming a real cost of debt)	FFO over Debt (using actual cost of debt)	
Debt/RAB	Gearing (Debt/RAB) (set as constant)	Gearing (Debt/RAB)	

Table 5.1	Ratios used in the 2013 financeability	v test versus the Final Report tests

In the benchmark test, we will calculate the ICR and FFO over Debt ratio using the real debt allowance we determine in the WACC. For the actual test, we will use the business's actual cost of debt. To make this clear, we refer to the ICR and FFO over Debt ratio in the benchmark test as the Real Interest Coverage Ratio (RICR) and Real Funds From Operations (RFFO) over Debt ratio.

⁵⁶ WaterNSW submission to IPART Issues Paper, June 2018, p 7 and WaterNSW submission to IPART Draft Report, September 2018, p 1.

⁵⁷ NSW Treasury submission to IPART Issues Paper, June 2018, p 3.

⁵⁸ SDP submission to IPART Issues Paper, June 2018, pp 8-9 and SDP submission to Draft Report, September 2018, p 9-11.

Interest Coverage Ratio (ICR)

Our final decision is that we will calculate the ICR for the actual test. Stakeholders supported including this ratio and Moody's, S&P Global and Fitch Ratings use the ICR in their credit rating assessment.

The ICR is calculated as follows:

$$ICR_t = \frac{FFO_t + [r_t + inf(d)_t]}{[r_t + inf(d)_t]}$$
(1)

where:

- *t* is the time period
- *FFO* is Funds From Operations adjusted for operating leases and superannuation liabilities
- *r* is the real return on debt
- *inf*(*d*) is inflation which is capitalised into the future value of debt.

When calculating the ICR for the actual test, we will use actual the interest payments of the business using the business's actual cost of debt.

Real Interest Coverage Ratio (RICR)

For the benchmark test, we assume a real cost of debt and will calculate the RICR will be calculated as follows⁵⁹:

$$RICR_t = \frac{Real \, FFO_t + [r_t + inf(d)_t] - inf(d)_t}{[r_t + inf(d)_t] - inf(d)_t} = \frac{Real \, FFO_t + [r_t]}{[r_t]}$$
(2)

where:

- *t* is the time period.
- *r* is the real return on debt.
- *inf*(*d*) is inflation which is capitalised into the future value of debt.
- *Real FFO* is Funds From Operations adjusted for operating leases and superannuation liabilities. This is adjusted further for the inflation component of the interest expense. If the interest expense is based on a real cost of debt, the adjustment will be zero (as explained below).

FFO is calculated as cash flows from operations less interest payments.⁶⁰ As the interest expense in the Regulatory Profit and Loss Statement is based on a nominal cost of debt, we will adjust the interest payments component of FFO so that it reflects a real interest paid (for the benchmark test). This means that we would adjust FFO by adding back the inflation

⁵⁹ Our RICR is based on the Adjusted Interest Coverage Ratio used by Moody's and differs in that we assume Capital Charges are zero. See Moody's Investors Service, *Rating methodology – Regulated Water Utilities*, June 2018, p 19.

⁶⁰ This is shown in Appendix B of this report.

component of the interest expense.⁶¹ We will then make an equal and opposite adjustment to the interest expense to base this cost on a real cost of debt. As a result:

- the numerator will be the same for the ICR as for the RICR, but
- the denominator of the RICR will be lower than the ICR, provided that inflation is positive.

If inflation is positive, this means that the RICR will be higher than the ICR.

The purpose of the adjustment is to include in the FFO (which is cash flow measure) the inflation amount that is a non-cash expense and should not be deducted off the cash available for use.

We use the RICR for the benchmark test because it adjusts interest payments for the inflation component of debt which is capitalised into the RAB in the next period. This ratio is a more relevant measure of the business's ability to service interest payments on debt, given our WACC methodology, as discussed in Section 5.3.

FFO over Debt and Real FFO over Debt

The FFO over Debt ratio will be calculated as

$$FFO/Debt_t = \frac{FFO_t}{Debt_t}$$
(3)

and the Real FFO over Debt will be calculated as

$$Real FFO/Debt_{t} = \frac{Real FFO_{t}}{Debt_{t}}$$
(4)

where:

- *t* is the time period
- *FFO* is Funds From Operations adjusted for operating leases and superannuation liabilities.
- *Real FFO* is FFO adjusted for the inflation component of the interest expense. If the interest expense is based on a real cost of debt, the adjustment will be zero.
- *Debt* is the debt outstanding adjusted for operating leases and superannuation liabilities.

This ratio calculates the cash flows available to the business, after paying interest payments, as a percentage of debt. For clarity, we reiterate that for the benchmark test, we will calculate the interest payments component of FFO on a real basis.

For the actual test, we will calculate the FFO over Debt ratio using the actual interest payments of the business.

⁶¹ 'Interest expense' and 'interest paid' are accounting concepts. The former is used in the Profit and Loss Statement and the latter is used in the Cash Flow Statement. The difference is that 'interest expense' is calculated on an accruals basis and includes indexation on inflation-linked bonds (ie, inflation accretion), while 'interest paid' is simply the cash interest payments made during the year (ignoring any other timing differences).

We would retain this ratio in both the actual and benchmark tests because:

- it is useful in measuring the business's ability to generate cash flow to service and repay debt (and to measure its resilience to changes in debt costs), and
- Moody's, S&P Global and Fitch Ratings currently use this ratio in assigning credit ratings for regulated utilities.

Gearing

This ratio will be calculated as:

$$Gearing \ ratio_t = \frac{Debt_t}{RAB_t} \tag{5}$$

where:

- *t* is the time period.
- *Debt* is the debt outstanding adjusted for operating leases and superannuation liabilities.
- *RAB* is the nominal Regulatory Asset Base.

We will, in effect, calculate this ratio for the actual test only. As discussed in section 4.2.2, for the actual test we will use the business's opening debt balance and either its forecast:

- dividend payments, or
- ▼ level of debt.

The gearing ratio can provide useful information about the business's financeability by assessing its leverage over the determination period and as a comparison to the gearing level assumed in the WACC. In addition, credit rating agencies and other regulators also use the gearing ratio in their financeability tests.

For the benchmark test, the gearing ratio is fixed at the gearing level in the WACC, ie, for a benchmark efficient business (eg, at 60%) over the regulatory period.

Return on Capital Employed (RoCE)

In response to stakeholder comments to our Draft Report⁶², we will calculate the Return on Capital Employed in the benchmark test. It will be included as a calculation check in our financeability test spreadsheets, to act as a check against the WACC as part of the benchmark test, but not as a financial ratio in the financeability test.

The Return on Capital Employed will be calculated as:

$$RoCE_t = \frac{(EBIT_t - TA_t - WC_t)}{RAB_t}$$
(6)

where:

- *t* is the time period.
- *EBIT* is Earnings Before Interest and Tax (adjusted for timing assumption differences)
- *TA* is equal to the Tax Allowance (as included in the NRR)
- WC is the return on working capital
- *RAB* is the average of the opening and closing Regulatory Asset Base, in nominal terms.

As pointed out by WaterNSW, this metric is a useful check against the WACC. Confirming that the RoCE is not less the WACC in the benchmark test will provide confidence that the NRR has been set appropriately.

We do not support including other ratios proposed by stakeholders

In Table 5.2 we explain why we do not support including additional ratios proposed by stakeholders. To summarise, the ratios we have considered, particularly the RICR, ICR and the (real and nominal) FFO over Debt ratios, are dynamic ratios that focus on the cash flows of the business. Our view is that these are sufficient to assess the impact of our pricing decisions on the business's financeability. The objective of the financeability test is to assess whether there are sufficient cash flows for the regulated business to remain financially sustainable. Whether the regulated business then decides to use the cash flows generated by our pricing decisions to fund dividend payments, pay down debt or build capital reserves, is outside the scope of the financeability test.

Furthermore, because most of these ratios are not included by credit ratings agencies in their methodologies, it would be more difficult to establish a target ratio that a BBB rated business would need to meet.

⁶² WaterNSW submission to IPART Issues Paper, June 2018, p 7 and WaterNSW submission to IPART Draft Report, September 2018, p 1.

Financial ratio	Calculation	Reason to not include in the test
Retained Cash flow / Debt	(Adjusted FFO less dividends) / Adjusted net debt	We calculate dividends as a residual in the benchmark test. This means an increase or decrease in cash flow (ie, FFO) will be reflected in a proportionate increase or decrease in dividend payments. The difference between this ratio and FFO over Debt ratio is dividends, which are not set by IPART. Including this ratio in the financeability test would be inconsistent with the objective of our test (to assess the impact of our pricing decisions on the business's financeability) Our consultants, Incenta, agreed that it is appropriate for IPART not to include this ratio in the financeability test
Return on regulated equity (RORE)	(EBIT - tax - (cost of debt x net debt)) / Equity component of the RAB	This ratio tests only the equity return component of the WACC. Given our inclusion of RoCE as a check to the WACC, this ratio would provide little additional information.
Debt Service Coverage Ratio (DSCR)	EBIT for the year / Total debt service due within the year The DCSR ratio measures the cash flow available to pay current debt obligations including principal repayments.	It is not clear how to establish a target ratio for a benchmark efficient business in the regulated water industry. In practice, the depreciation allowance in the building block approach should provide an allowance that meets principal repayments.

Table 5.2	Financial ratios	suggested by	stakeholders	for the	financeability tes	st
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In its response to our Draft Report, SDP reiterated its view that businesses should be allowed to propose additional metrics such as DSCR if a strong case could be made for the relevance of those metrics.⁶³

While we agree with SDP that the DSCR is a standard ratio in project financing, we do not think it is straightforward to establish a target ratio that a benchmark efficient business in the regulated water industry would need to meet.

While we will not include the DSCR as a standard ratio in the financeability test, as a default, when we conduct financeability tests in price reviews we will consider all the issues raised by stakeholders in that review.

⁶³ SDP submission to IPART Draft Report, September 2018, pp 9-11.

5.5 We will rank our financial metrics

Final decision

20 That we will rank the financial metrics to place more weight on the RICR or ICR and Real FFO over Debt or FFO over Debt ratios, and to place less emphasis on the gearing ratio.

Our final decision is that we will rank the financial metrics in order of importance, rather than adopt a strict weighting to these metrics.

5.5.1 Stakeholders had mixed views on the ranking of the ratios

Stakeholders had mixed views about how we should combine these ratios in our test. For example, WaterNSW agreed with our preliminary view in our Issues Paper that a *fixed weighting* is not appropriate,⁶⁴ whereas CEG (on behalf of Sydney Water) and Hunter Water preferred a fixed weighting of the ratios to be consistent with Moody's methodology.⁶⁵ Water Services Association of Australia (WSAA) submitted that

...in practice, some ratios and indicators may be considered more important than others, however, we are concerned with IPART's more rigid approach to the ranking of parameters in order of importance. Each of the suggested ratios has its own role to play, and WSAA would prefer to see the financeability test adopt them as a suite of indicators that would be considered together in forming a view about the overall financial picture of a business.⁶⁶

While SDP and WaterNSW supported a *ranking* of financial metrics, they both considered that we should place more weight on the interest coverage ratio and FFO over debt ratios, and less weight on debt gearing.⁶⁷

5.5.2 We have refined our current ranking in response to stakeholder feedback

In response to stakeholder feedback to the Issues Paper, we refined our ranking of the financial metrics in our Draft Report to place less emphasis on the gearing ratio. We will place more emphasis on the RICR or ICR and the Real FFO over Debt or FFO over Debt ratios, for both the benchmark and actual tests.

These ratios are both measures of whether the business generates sufficient cash flows to remain financeable. Our view is that focusing on the cash flows of the business is the most important element of assessing its financeability.

We will also consider the gearing ratio in the actual financeability test, but with a lower ranking than our two measures of cash flow. Placing less emphasis on the gearing ratio is consistent with Moody's methodology to the extent that they place a lower weight on the gearing ratio than cash flow ratios.⁶⁸

⁶⁴ WaterNSW submission to IPART Issues Paper, June 2018, p 7.

⁶⁵ Competition Economists Group, *IPART review of financeability test*, June 2018, p 24 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018), Hunter Water submission to IPART Issues Paper, June 2018, p 12 and Hunter Water submission to IPART Draft Report, September 2018, p 4.

⁶⁶ WSAA submission to IPART Draft Report, September 2018, p 5.

⁶⁷ SDP submission to IPART Issues Paper, June 2018, p 10 and WaterNSW submission to IPART Issues Paper, June 2018, p 8.

⁶⁸ Moody's Investors Service, *Rating methodology – Regulated Water Utilities*, June 2018, p 4.

In reaching our final decision to adopt a ranking, we have considered whether this approach would be overly deterministic, or rigid. We consider our ranking is appropriate, because we do not expect the business to meet every target ratio in each year of a determination period. In addition, the ranking of our target ratios would only be used to identify a financeability concern. If we identified a financeability concern, we would then conduct further analysis to analyse the source of, and the appropriate remedy, to this concern.

We maintain the view we expressed in our Draft Report that we should not give a weighting to the financial ratios because:

- we are not aiming to assign an overall credit rating
- in our view the outcome of each financial ratio in each year relative to its target, as well as the trend of that ratio over time, provides insight that would be lost in a combined result, and
- a binary result based on a weighting scheme may imply greater precision in the overall test than actually exists, and ignores the element of judgement that we apply.

5.6 The target ratios

Final decision

- 21 That we will adopt the following target ratios:
 - A Real Interest Coverage Ratio of greater than 2.2 times.
 - An Interest Coverage Ratio of greater than 1.8 times.
 - A Real FFO over Debt ratio greater than 7%.
 - A FFO over Debt ratio greater than 6%.
 - A gearing ratio less than 70%.

In our Issues Paper, we noted that the benchmark ratios in the 2013 test had a wide range, and significant overlap. We maintain our draft decision to establish a single target ratio for each credit metric. The target ratio has been set with reference to a BBB credit rating, rather than a range for each ratio, across a number of credit rating grades. This approach maximises the transparency and simplicity of our financeability test.

5.6.1 Stakeholders agreed with setting a single target ratio for each metric but disagreed with the targets set

Stakeholders agreed with our approach in the Draft Report to set a single target ratio for each metric. However, some disagreed with the targets we set in the Draft Report.

Hunter Water argued for a higher target of 10% for the FFO over Debt ratio and supported the targets set for the other metrics.⁶⁹ SDP stated that the thresholds set in the Draft Report would "allow firms (including those with genuine financeability problems) to pass the financeability test too readily".⁷⁰ SDP goes on the argue that:

⁶⁹ Hunter Water submission to IPART Draft Report, September 2018, p 10.

⁷⁰ SDP submission to IPART Draft Report, September 2018, p 1.

...if IPART elects to maintain the benchmarks proposed in the Draft Report, then the way it interprets a pass or failure of the financeability test requires modification. In particular, failure of a financeability test that is relatively easy to pass should be viewed by IPART as a matter of concern, even if that failure occurs in isolated years, as this could be symptomatic of a more serious, undiagnosed financeability problem.⁷¹

Regarding the adjusted financial ratios proposed in our Draft Report, stakeholders argued that the standard financial ratios are not intended to be applied to a real interest rate situation and questioned the validity of the targets set as a result. NSW Treasury expressed concern "that the benchmark metrics have not been calibrated using a real cost of debt".⁷²

In addition, SDP maintains that we have not provided sufficient explanation on how we set the targets.

5.6.2 We have set a single target ratio for each metric

In this section, we outline in turn:

- Why our final decision is to set a single target ratio for each metric, rather than a range across multiple credit ratings.
- How we developed our target ratios and supporting advice for target ratios we received from our consultant, Incenta. We also compare our target ratios to those used by credit rating agencies.

Our consultants, Incenta, provided advice on our target ratios. In summary, their advice is that:

- While our target ratio for the ICR is broadly appropriate, a more aggressive threshold of 1.5x is also appropriate.
- Our 6% threshold for the FFO over debt ratio is appropriate.
- A debt gearing ratio of 80-85% would be more appropriate than our target of 70%.
- Our Real ICR and Real FFO over debt ratios should be higher than their nominal counterparts, on the expectation that the potential for a business with an indexing RAB to generate additional cash flow could be built into the nominal targets.

We considered the arguments put forward by stakeholders and Incenta on the appropriate target ratios, and have not adopted the more aggressive target ratios for the nominal ratios as advised by Incenta.

We have, however, decided to uplift our target ratios for the Real ICR and Real FFO over debt ratios, but by less than proposed by Incenta. We consider uplifting the real ICR and FFO over debt ratios is consistent with stakeholder preferences, and the advice received from Incenta.

⁷¹ SDP submission to IPART Draft Report, September 2018, p 14.

⁷² NSW Treasury submission to IPART Draft Report, September 2018, p 3.

We have set a threshold for a BBB rated business rather than setting ranges

In our 2013 test we developed a benchmark range for each financial metric, across a number of different credit ratings, including the BBB benchmark. These ratios had significant overlap, which made it difficult to clearly assess what credit rating a business would meet with a given set of financial ratios.

To increase the simplicity of our approach and minimise the overlap of our ratios, we have instead set a threshold (ie, a minimum or maximum) value for each ratio that **a BBB rated business would meet under our building block approach**. We note that a business would not need to meet every ratio in each year of the regulatory period.

Our final decision is to set a single target ratio for each metric because:

- First, there is only value in establishing a target ratio for the BBB credit rating. The role
 of the financeability test is not to assign a credit rating to a business.
- Second, adopting a band for the target ratio provides little additional value, because it is the bottom (or top) of that band that is the true threshold. Instead, adopting a band may introduce the scope to apply judgement in the assessment of a business. However, our view is that it is more transparent for IPART to explicitly apply judgement in our process for assessing the business's financeability, rather than applying this judgement through setting target bands.
- Third, by setting a single target value, we do not have a problem of overlapping ratios across different credit rating grades.

A single target value makes our analysis of the business's financeability a pure quantitative assessment. In response to this analysis, the Tribunal could then consider qualitative factors.

How we developed our target ratios for ICR, FFO over Debt and gearing ratios

When deciding at what level we should set the target ratios, we considered a number of different factors, including:

- 1. The methodologies used by the different rating agencies and the applicability of their credit metric ratio ranges to our purpose.
- 2. The down (or up) triggers in credit rating agency's credit opinions for regulated water, energy and gas network entities.
- 3. That, as we are setting a threshold rather than a range, the target ratio we set should be at the lower end, rather than the midpoint, of the ranges used by credit rating agencies.

From the advice from our consultant, Incenta (included in Appendix E) and from our own discussions with credit rating agencies, we found that the ranges set by S&P Global for an aggressive business and by Fitch Ratings for Australian regulated network utilities are more directly applicable to our target ranges.

Our analysis, and the opinion of our consultant, of Moody's methodology suggests that Moody's benchmark ratios are not as directly applicable. In practice, Moody's Ba benchmark ratios tend to be more consistent with the credit rating outcomes for Australian regulated

water utilities (and Australian regulated energy and gas networks) and more applicable for our purpose (than the Baa range).⁷³

Table 5.3 outlines our target ratios for ICR, FFO over Debt and gearing ratios and how they compare against the credit rating agencies. The target ratios for RICR and Real FFO over Debt are discussed subsequently.

	-		
	ICR	FFO over Debt	Gearing
	Higher is better	Higher is better	Lower is better
IPART (final decision)	>1.8x	>6%	<70%
IPART (2013) ^a	1.4-2.9x	5-10%	60-100%
Moody's (Baa) – Water ^b	2.5-4.5x	10-15%	55-70%
Moody's (Ba) – Water ^b	1.8-2.5x	6-10%	70-85%
Moody's (Baa) – Energy networks ^c	2.8-4x	11-18%	60-75%
S&P Global (Significant) ^d	2-3x	9-13%	NA
S&P Global (Aggressive) ^d	1.5-2x	6-9%	NA
Fitch Ratings (BBB) *	1.5x	5.5%	70%

Table 5.3 Comparison of nominal metrics used by IPART and credit rating agencies

a IPART, Financeability tests in price regulation – Final Decision, December 2013, p 10.

b Moody's Investors Service, Rating methodology – Regulated Water Utilities, June 2018, p 21.

c Moody's Investors Service, Rating methodology – Regulated Electric and Gas Networks, March 2017, p 19.

d S&P Global Ratings RatingsDirect, *Corporate Methodology*, November 2013, p 35. The credit rating that S&P Global Ratings assigns a business is dependent on their financial metrics and their risk profile. The 'Significant' and 'Aggressive' ratios in this table correspond to a BBB benchmark.

e FitchRatings Australian Regulated Network Utilities: Ratings Navigator Companion April 2018, pp 9 & 11.

We discuss our final decision on each financial metric below.

Interest Coverage Ratio

We developed our target value for the ICR with reference to the ICR used by Moody's, S&P Global and Fitch Ratings.

The ICR value for a BBB rated business used by the credit rating agencies suggests a target ratio of around 2x. Given the factors mentioned above, that is of considering down triggers in credit opinions for water and energy utilities and of setting the target ratio at a lower (threshold) level, we consider that a 1.8x target ratio is appropriate. We note that a coverage ratio of 1.8x is within the range set by Moody's, Fitch Ratings and S&P Global.

Our consultant, Incenta, agreed with this target, but considered a lower threshold of 1.5x would also be appropriate.

FFO over Debt ratio

The FFO over Debt ratio varies quite widely across credit rating agencies, with Moody's adopting a more conservative benchmark of 10-15% for its Baa range. Given the advice from Incenta, we believe that Moody's Ba range of 6-10% is more relevant to our application and comparable to S&P Global's range of 6-13% or Fitch Ratings' single threshold of 5.5%.

⁷³ Incenta Economic Consulting Review of IPART's financeability test October 2018, p 1 & 8.

Again, based on the principles and considering the factors outlined above, we consider a target ratio towards the lower end of this range, of 6%, is appropriate. Incenta supported this target.

Gearing ratio

In many building block price reviews, we adopt a benchmark gearing ratio of 60%. This implies that a benchmark efficient business would maintain a 60% ring ratio, on average, over time. In practice, a business's gearing ratio will fluctuate between years, and our view is that a 10% variation is appropriate, and have selected a target ratio of 70%. We also note that a 70% target ratio is also consistent with the ranges considered by credit rating agencies.

Our consultant, Incenta, did not agree with us on this target. It suggested that this target was too low and that a target of 80-85% might be more appropriate and consistent with the targets set for ICR and FFO over Debt.

We have considered the arguments put forward by stakeholders and Incenta, and have decided to take a cautious approach and keep the gearing threshold at 70%. In setting the gearing threshold at 70%, we note that a business would not necessarily be expected to meet this ratio in each year of a determination period. In addition, we will place less emphasis on the gearing ratio than the ICR and FFO over debt ratios. Finally, the gearing ratio is relevant only to our actual test, because the gearing ratio is held at the WACC gearing level in the benchmark test (which is currently 60% for most of the businesses we regulate in the water industry).

How we set our targets for the RICR and Real FFO over Debt ratios

Given our real WACC and building block approach, we believe the most appropriate metrics to use for the benchmark test are based on a real cost of debt. However, stakeholders argued that the target ratios (discussed above) are based on a nominal basis. This implies that the targets set above do not directly apply to the ratios calculated using a real cost of debt.

We asked our consultant to investigate this and to assist us in setting targets for the real financial metrics.

Incenta advised that the target ratios we adopt for the Real ICR and Real FFO over Debt ratio should be higher than their nominal counterparts. An uplift in the real ratios is appropriate because the potential for the additional cash flow generated under a real WACC framework could be built into the targets for the nominal ICR and FFO over Debt metrics.

The approach used by Incenta to estimate an appropriate uplift for the real ratios was to calculate the difference between the real and nominal financial ratios based on data from recent water price reviews. This assumes that:

given that many firms (and possibly all of the peer group for the NSW water businesses) are likely to be in a position to generate additional cash inflow by raising net borrowings over time (and without harming their financial indicators), it should follow that the potential for this double counting already would be reflected into the thresholds that rating agencies apply for historical cost interest cover.⁷⁴

⁷⁴ Incenta Economic Consulting *Review of IPART's financeability test* October 2018, p 12.

By comparing the outcomes of these ratios, Incenta suggests an uplift of 1.1 times for RICR and 2.3% for the Real FFO over Debt ratio. We could apply these uplifts to our targets above, however in our view this would result in real targets that are too high.

Firstly, we believe that their uplift is too high, because we disagree with the assumption that the double counting is fully reflected into the nominal thresholds. Incenta's view is at odds with the calculation and use of the Adjusted Interest Coverage Ratio by Moody's. The fact that Moody's has a different metric and benchmark values for a regulatory framework with an indexing RAB (such as ours) suggests that ICR benchmark ranges do not fully reflect the potential for double counting.

Secondly, in calculating their estimated uplift, Incenta used data that maintained a constant gearing ratio for both ratios calculated. This, in effect, double counted the inflation component for the nominal ratios, where the inflation component was paid out as interest as well as capitalised into the stock of debt. This approach would therefore be an over-estimate of the uplift. In Appendix C, we provide further analysis on the differences between the nominal and real ICR and FFO over Debt ratio.

We agree that the targets for nominal ratios could include the potential for a business to capitalise future inflation. However, based our analysis we have decided to adopt a smaller uplift, and have adopted a target for the RICR of 2.2 times, and a target of 7% for the Real FFO over Debt ratio.

5.7 Assessing financeability

Final decision

22 That we will adopt the process in Figure 5.3 to identify whether a financeability concern exists.

In our Issues Paper, we noted that our current financeability test does not have a published step-by-step process or decision rule for assessing whether a financeability concern exists. This means the circumstances in which we would conclude that a financeability concern exists are unclear and implies that the assessment of a financeability concern is guided by discretion and judgement.

The 2013 test

The process we established in our 2013 test was to:

- 1. Calculate three financial ratios (ICR, gearing and FFO over Debt), measured using the business's actual financial inputs.
- 2. Rank the three measures, placing more weight on ICR and gearing.
- 3. Compare our calculated financial ratios against the benchmarks for the three ratios (set with reference to a credit rating of Baa2).
- 4. Assess whether the business faces potential financial concerns over the regulatory period.

For the Draft Report, we set out a clear process to identify whether a financeability concern exists. Our final decision is to broadly maintain this process (as depicted in Figure 5.3), with minor changes in response to stakeholder feedback. We consider this process provides clear information to stakeholders about how we make our decision, as well as highlighting where (and how) in this process we apply judgement, if needed.

5.7.2 Stakeholders requested a clear process for identifying a financeability concern

Almost all stakeholders requested that we provide a transparent and clear process for identifying a financeability concern. With that said, stakeholders generally agreed that the process for identifying whether a financeability concern exists should not be too prescriptive and that IPART should retain a degree of discretion.

We received limited feedback to the process we outlined in our Draft Report.

- Hunter Water was concerned we might overlook potentially significant issues, because our calculation of the financial ratios using the business's actual cost of debt would not influence our initial assessment of the business's financeability. We have addressed this concern by using the business's actual cost of debt in the actual test.⁷⁵
- SDP submitted that the decision process we outlined in the Draft Report did not show a clear pathway for IPART to reassess its pricing decision if the actual test highlighted a financeability concern.⁷⁶ To address this concern, we have made minor amendments to Figure 5.3 to make it clearer that, if we identified a financeability concern in the actual test, we would then tailor the remedy to the source of the concern. With that said:
 - We would expect that if the benchmark business passed the financeability test, there would not be an error in regulatory allowances that we set.
 - As discussed further in Chapter 6, the financeability test will be used to test the sufficiency of cash flow outcomes to fund the prudent and efficient expenditure we establish in our expenditure review process. The financeability test will not be used to reassess the efficient allowances determined during a review.

⁷⁵ Hunter Water submission to IPART Draft Report, September 2018, p 11.

⁷⁶ SDP submission to IPART Draft Report, September 2018, p 15.



Figure 5.3 Our process for identifying a financeability concern for the benchmark and actual tests

5.7.3 The process for identifying a financeability concern

Under our final decision:

- 1. We would apply the process in Figure 5.3 for the benchmark and actual business separately.
- 2. We would calculate the following financial ratios
 - a) For the benchmark test, we would calculate the Real Interest Coverage Ratio, Real FFO divided by debt and gearing⁷⁷ ratios.
 - b) For the actual test, we would calculate the Interest Coverage Ratio, FFO divided by debt and gearing ratios (using the business's actual cost of debt).
- 3. If the business meets all the target ratios in all years of the regulatory period, we would conclude that the business does not have any financeability concerns.
- 4. If the business does not meet the target ratios in all years of the regulatory period, we would analyse these ratios more closely.
 - a) First, we would rank the ratios, placing more weight on the Interest Coverage Ratio and FFO divided by debt ratios.
 - b) Second, we would assess the trends in the financial ratios over the regulatory period, and decide whether the business faces a potential financeability concern, applying judgement where appropriate. We discuss this assessment further below.
 - c) Third, if we judged that the benchmark business faced a financeability concern, we would reassess our pricing decisions and adjust our regulatory settings.
 - d) Fourth, if the actual business faced a potential financeability concern, we would then liaise with the business to:
 - confirm the validity of the data we have used
 - seek further data from the business to extend the period of analysis to two or three years before and after the regulatory period, to check for evidence of a potential persistent financeability concern, and
 - consider whether it is appropriate to include any other idiosyncratic factors into our analysis.

If this process identifies a financeability concern, we would then conduct further analysis to identify the source and a potential remedy.

Assessing trends over the next regulatory period

In assessing the business's ratios over the regulatory period, we would consider:

- whether the business generally meets the target ratios over the period, and/or
- if the trend in the ratios suggests that the business's finances are improving or deteriorating.

⁷⁷ Although in practice the gearing ratio would be fixed at the gearing level used to set the WACC.

Does the business generally meet the ratios?

We do not expect that a business will necessarily meet every ratio in each year of a determination period. If we assessed that the business generally met the financial ratios, we would make it clear that we made this judgement in our decision.

However, there is no strict rule to dictate in which cases the business would generally meet the ratios. This is because it is both the frequency and the extent to which the business does not meet the target ratios that indicates whether there is a financeability concern.

Does the trend in the ratios suggest sufficient improvement?

We will analyse the trend for each ratio over the regulatory period, as these trends provide insight into a business's future financial sustainability. If the trends show a significant improvement, then we would assess that the business may not have a financeability concern.

Again, we have not developed a strict rule to assess these trends, as how far the business is from the target ratios, and how quickly these ratios improve over time, both influence whether there has been a sufficient improvement over the period.

We also consider that assessing trends for the benchmark business is valuable before we proceed to re-assess our pricing decisions. For example, where we assessed that a large capital expenditure during the middle of a regulatory period was prudent and efficient the benchmark business might not meet the target ratios in that single year. However, the business might still remain financeable over the regulatory period by managing its cash flows, without the need for IPART to allow higher revenues in that year.

Conduct further analysis if the actual test suggests a financeability concern

If, after liaising with the business to confirm the validity of the data we have used, we identify a financeability concern, we will conduct further analysis to identify the source of the concern.

Under our final decision, the inputs we will use to calculate the financial ratios, and the targets for these ratios, are different for the benchmark and actual test. If the benchmark business passed but the actual business did not, an immediate diagnosis of the source of the financeability concern might not be possible. Therefore, we will conduct further analysis on a case-by-case basis. This additional analysis could include conducting the actual test using a real cost of debt.

We consider it more appropriate to diagnose the source of a financeability concern on a caseby-case basis, rather than codify a strict set of scenarios for further analysis, because a financeability concern could arise due to many factors, sometimes unique to a business.

6 Addressing a financeability concern

In this chapter we discuss the remedies we propose to consider in addressing a financeability concern. In the 2013 financeability test, we considered NPV-neutral adjustments to prices if we identified a financeability concern. In our 2018 test, we will:

- Separately test for three potential sources for a financeability concern.
- Adopt a remedy that depends on the source we identify. In particular, we would only consider NPV-neutral adjustments to prices to address temporary cash flow problems, but not to address imprudent or inefficient investment decisions made by a business.

6.1 The sources of a financeability concern

Final decision

- 23 That, if we identify a financeability concern, we would separately test whether this concern is due to:
 - setting the regulatory allowance too low
 - the business taking imprudent or inefficient decisions, and/or
 - the timing of cash flows.

This section discusses our final decision to test for these three potential sources of a financeability concern, which would in turn inform the remedy we take to address it.

6.1.1 Our final decision is to test for three sources of a financeability concern

In our Issues Paper and Draft Report, we identified three potential sources of a financeability concern:

- 1. Regulated prices are set too low for even a benchmark efficient business to maintain an investment grade credit rating over the regulatory period.
- 2. Regulated prices are sufficient for a benchmark efficient business but insufficient for the actual regulated business to maintain an investment grade credit rating. This could occur if the owners previously made imprudent or inefficient decisions, such as engaging in inefficient spending which led to a higher gearing ratio and/or interest payments. It could also occur in the future if, for example, the business intended to return excessive dividends to its shareholders over the regulatory period.
- 3. Regulated prices are sufficient for the actual regulated business to maintain an investment grade credit rating on average, but the timing of cash flows might create short-term financial problems from time to time.

Our final decision is to test for these three potential sources of a financeability concern.

6.1.2 Stakeholders largely supported our preliminary views on identifying the source

All stakeholders fully or partly agreed with the three sources of financeability concerns we stated in our Issues Paper and Draft Report. Below we discuss the key themes from stakeholder feedback, and our views on their suggested changes or differences of opinion.

The financeability test will not be used to re-examine our capex and opex allowances

In its submission to our Issues Paper, SDP suggested that "the actual and benchmark tests proposed by IPART will not capture every possible source of financeability problems".⁷⁸ In its submission to our Draft Report, SDP submitted further that our financeability test will not identify "whether...IPART has provided in its pricing decisions insufficient allowances for opex, capex, depreciation or the cost of equity".⁷⁹

SDP suggested that the financeability test should be expanded to test all decisions, so businesses may use the financeability test to argue for higher regulatory allowances to avoid financeability problems.⁸⁰

Our view is that the business should raise issues regarding operating, capital and depreciation allowances as part of the expenditure review during the determination process. The financeability test is not intended to address the prudency and efficiency of these allowances. Instead, the test is focussed on sufficiency of cash flow outcomes to fund prudent and efficient expenditure. In our view, using the financeability test to effectively reassess the efficient allowances determined during a review would undermine our building block framework which allows the Tribunal to separately review each cost block.

We consider that the benchmark test would assess whether the cost of equity we have determined is sufficient. In particular, in Appendix B, we show that the FFO over debt ratio in the benchmark test will identify whether the asset lives and return on equity we have set would generate sufficient cash flow for the business to remain financeable.

As stated in our Draft Report, we will consider any issues raised in a submission made by a regulated business (or any other stakeholder) during its price review.

We do not need to test for future external shocks in the financeability test

In its submission to our Issues Paper, WaterNSW suggested that regulated prices could be:

...set too low for even a benchmark efficient business to maintain an investment-grade credit rating over time (ie, insufficient for both the actual business and benchmark business). This could arise from an external shock applied to the business which is outside the control of management.⁸¹

If we identify specific and significant external shocks are likely to occur during the period, we would have regard to this as part of our price review process.

⁷⁸ SDP submission to IPART Issues Paper, June 2018, p 17.

⁷⁹ SDP submission to IPART Draft Report, September 2018, p 3.

⁸⁰ SDP submission to IPART Draft Report, September 2018, p 4.

⁸¹ WaterNSW submission to IPART Issues Paper, June 2018, p 8.

With that said, there are existing mechanisms available to take into account external shocks beyond the business's control, including making an adjustment at the next price review. Furthermore, if the time delay between the shock and the next price review is significant and the business cannot overcome any resulting cash flow problems, we would consider the case for an early review and determination.

Our view is that the three potential sources we have identified are appropriate

In its submission to our Issues Paper, Water NSW suggested a fourth potential source for a financeability concern where:

Regulated prices are set sufficiently for the actual business but insufficient for the benchmark business, because the business's owners have adjusted the business's gearing ratio downwards to avoid a financeability issue that would otherwise arise at the benchmark gearing ratio.⁸²

We do not consider that a separate source is needed for instances where the owners of a business have adjusted the gearing levels to avoid a financeability concern. This is because this issue would be captured in the first source discussed, ie, if we set the regulatory allowance too low.

Separately, CEG (in an attachment to Sydney Water's submission to our Issues Paper) stated that:

A financeability problem is, by definition, a signal that the regulatory allowance is too low – whether or not this is characterised as due to a 'timing of cash flows' problem. ...the primary focus of the financeability test should be on the benchmark notional business.⁸³

We disagree with this view that any financeability concern is by definition a signal that prices are too low. Imprudent business decisions have the potential to create financeability concerns that a prudently run business that is otherwise in the same situation would not experience. Imprudent decisions by management are a matter for the business owners to resolve, perhaps by accepting a lower return on equity for a period. It would be inappropriate to increase prices to customers in such a situation.

It is not practical to publish an exhaustive list of potential financeability concerns

In its submission to our Issues Paper, Hunter Water stated that:

A robust financeability assessment should identify whether a problem is one-off in nature or likely to re-occur. Such an assessment would inform the choice of remedy. For instance, if the source of a problem is likely to reoccur (e.g. high levels of prudent capital expenditure and associated debt levels), a remedy that addresses the issue overtime and avoids undue revenue volatility would be preferable.⁸⁴

Hunter Water further suggested that:

...it would be useful if IPART's Draft Report was to provide some specific examples of one-off and potentially re-occurring financeability problems and how they could be addressed to maintain targeted credit ratings whilst maintaining a degree of pricing stability.⁸⁵

⁸² WaterNSW submission to IPART Issues Paper, June 2018, p 9.

⁸³ Competition Economists Group, *IPART review of financeability test*, June 2018, p 25 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018).

⁸⁴ Hunter Water submission to IPART Issues Paper, June 2018, p 13.

⁸⁵ Hunter Water submission to IPART Issues Paper, June 2018, p 13.

We view that the treatment of a financeability issue irrespective of whether it is one-off or recurring should depend on the source of the issue. Once the source of the concern is identified, then we can tailor the response to the issue based on whether the issue is recurring or one-off. An example of a recurring financeability concern would be where the business has adopted a gearing level that is significantly higher than the benchmark gearing level. An example of a one-off financeability concern could be when a large capital expenditure in a single year was deemed prudent but customer tariffs may not fully meet the funding cost in the short term.

To publish an exhaustive list of one-off or recurring financeability concerns and how these can be addressed would be difficult as these issues could arise due to many reasons, sometimes unique to a business, and how these can be resolved may differ from one business to another. We would, however, provide an explanation of our decisions within the context of each decision we make.

6.2 The remedies and the process to address a financeability concern

Final decision

- 24 That, if the source of a concern is due to a regulatory error, we would correct the regulatory error by reassessing our pricing decision.
- 25 That, if the source of a concern is due to imprudent or inefficient business decisions, we would alert the business's owners to the potential need to inject more equity, accept a lower rate of return on equity, or both.
- 26 That, if the source of a concern is due to temporary cash flow problems, we could consider an NPV-neutral adjustment to prices.

Our draft decisions were that if a financeability concern is due to:

- Regulatory error, we should correct the error by re-assessing our pricing decisions.
- Imprudent or inefficient business decisions, we should not make any adjustments to our pricing decisions.
- Temporary cash flow problems, that we would consider an NPV-neutral adjustment to prices. If the Tribunal decided that an NPV-neutral adjustment is not appropriate, we would reclassify the financeability concern as a problem that required the owners of the business to resolve it; for example, by accepting a lower return on equity in some periods of the determination (potentially offset by higher returns in others).

After considering feedback from our stakeholders to our Draft Report, our final decisions are to maintain our draft decisions.

6.2.1 Stakeholders generally agreed with our proposed remedies for financeability concerns

Stakeholders largely supported our proposed remedies for the different types of financeability concerns. For example, WaterNSW and SDP agreed with our proposed remedies, with NSW Treasury supportive of the proposed remedies but stating that "any remedy must be determined in an open and transparent way".⁸⁶

With that said, in its response to our Issues Paper, CEG stated that:

If there is a financeability problem given the notional capital structure it is because the assumed credit rating does not match the credit rating actually achievable by a business (given its expenditure profile etc.). Adjusting the notional assumptions to make them internally consistent is the most transparent means of solving a financeability problem.

In contrast to this, IPART is proposing that some kind of financeability problems can be resolved by the business taking a loan from itself (from its future revenues) at a rate that is equal to its cost of capital (i.e., higher than its debt financing costs). This would include a 'solution' that involves accelerated regulatory depreciation of the RAB for a short period. We do not consider that this is a sensible approach. It, in effect, amounts to 'kicking the can' down the road – potentially simply creating a new financeability problem in the future.⁸⁷

We do not agree with this view that an NPV-neutral adjustment would create a longer term financeability problem. We would only implement an NPV-neutral adjustment if we considered the financeability concern was a genuine transitory issue that could be resolved by changing the timing of cash flows.

SDP strongly disagreed that, if the Tribunal decided an NPV-neutral adjustment is not appropriate, we should reclassify the financeability concern as a problem that required the owners of the business to resolve. They argued:

- almost any cash flow timing problem could probably be addressed with modest price impacts on individual regulatory periods, and
- it is inappropriate for shareholders to bear the burden of resolving such a financeability problem.⁸⁸

We agree that in many cases a cash flow timing problem could be addressed with modest price impacts. However, it is critical that the prices we set are affordable and equitable for customers.⁸⁹ Therefore, if an adjustment to prices created an outcome that was not affordable or equitable for customers, it would necessarily fall to the business to manage the temporary cash flow issues.

⁸⁶ See submission to IPART Issues Paper, June 2018, from WaterNSW, p 9; SDP, p 18; NSW Treasury, p 3.

⁸⁷ Competition Economists Group, *IPART review of financeability test*, June 2018, p 26 (Attachment to Sydney Water's submission to IPART Issues Paper, June 2018).

⁸⁸ SDP submission to IPART Draft Report, September 2018, p 19.

⁸⁹ Furthermore, IPART is required to consider these factors under Section 15 of the IPART Act.

6.2.2 Analysis of our decisions

In this section, we outline our proposed remedies to the three sources of a financeability concern we outlined previously.

Remedies when the regulatory allowance is set too low

If IPART were to set the regulatory allowance too low for a business, it would create a financeability concern. Therefore, we can use the benchmark financeability test to provide some confidence that the regulatory allowance is appropriate. If this benchmark test identifies a concern, then we would seek to pinpoint the cause and revise the pricing calculation. We anticipate doing this before the pricing decision is publicised.

Remedies when the regulatory allowance is insufficient for the actual business due to imprudent or inefficient decisions made by owners

If we identify that a financeability concern arises due to the imprudent and inefficient decisions made by the owners of a business, we would not revise our pricing calculations. Instead, we would first engage with the management and owners of the regulated business to confirm that our test results are based on reliable input data. If this process confirms our initial analysis, the business would need to address the financeability concern, for example, by injecting further equity to the business or accepting a lower return (dividend) or both.

For example, if our analysis shows that the financeability concern arises from excessive gearing levels, we would point this out to the owner. It would then be up to the owner to take the necessary steps to address the financeability concern, perhaps by reducing the gearing through equity injections.

It is an important principle that a business – whose regulated prices would permit a prudent and efficient business to remain financeable – should not receive a price increase simply because it has failed to be prudent and efficient. Burdening customers for inefficient decisions could create a moral hazard by encouraging the business's owners to continue making inefficient choices with the expectation that someone else will bear the cost.

For clarity, our expenditure review within each regulatory determination is a separate process which establishes the prudent and efficient level of expenditure in the previous and current regulatory period. The financeability test, and any process to remedy a financeability concern, would be applied after, and separately, to the expenditure review process.

Remedies we propose to consider when a temporary cash flow issue exists

There may be cases, however, when a prudent and efficient business might suffer from temporary cash flow problems. The regulatory price determination process does not explicitly take account of cash flow timing issues, so it cannot anticipate every possible difficulty.

In the event that an efficient business experiences a temporary cash flow problem, our final decision is that the Tribunal could consider an amendment to the regulatory price path that is neutral in net present value terms. If the Tribunal considered an amendment appropriate, this

amendment could involve a temporary increase in prices followed by a reduction in prices at a later time so that the two price changes offset each other in net present value terms. This would potentially overcome the business's cash flow problems, while leaving customers no worse off on average.

If the Tribunal decided that an NPV-neutral adjustment is not feasible, we have decided that we would reclassify the financeability concern as a problem that required the owners of the business to resolve it; for example, by accepting a lower return on equity in some periods of the determination (potentially offset by higher returns in others).

6.3 NPV neutral pricing adjustments

Final decision

- 27 That, if we consider an NPV-neutral adjustment is appropriate:
 - First, we would consider whether it is appropriate to implement this adjustment over the regulatory period under review.
 - Second, if we do not consider this adjustment should be restricted to the regulatory period under review, we could consider:
 - whether it is appropriate to implement an adjustment by allowing a higher depreciation allowance in the period under review in order to increase prices in the regulatory period under review, or
 - an explicit adjustment to the pricing path over the regulatory period. If we
 made such an adjustment, we would publish the value of this adjustment in
 present value terms. This would allow a future Tribunal to consider this
 adjustment in a future regulatory period.

This section discusses our final decisions on NPV-neutral adjustments to prices in response to temporary cash flow problems.

6.3.1 Stakeholders support NPV-neutral adjustments over multiple periods

In our Issues Paper, our preliminary view was to limit NPV-neutral adjustments only in the regulatory period under review.

Stakeholders largely disagreed that it is appropriate to limit NPV-neutral adjustment to a single regulatory period.

In particular, SDP suggested that IPART could consider an NPV-neutral adjustment over multiple periods, by accelerating RAB depreciation in the current period.⁹⁰ This adjustment would provide the business with higher revenues in the current period while remaining NPV neutral over the long-run. This is because the starting value of the RAB in the next period would be lower, and the present value of future payments would be lower to offset the higher prices in the current period.

⁹⁰ SDP submission to IPART Issues Paper, June 2018, p 12.
After considering feedback from our stakeholders, we agreed that it might not be practical to limit an NPV-neutral adjustment to a single regulatory period, to respond to financeability problem caused by a temporary cash flow problem. This is because limiting a pricing adjustment to a single regulatory period could lead to excessive price volatility. Therefore, our draft decision was to potentially extend this adjustment to future regulatory periods, if necessary.

Our draft decision was that if we decided an NPV-neutral pricing adjustment was appropriate, and should not be restricted to the regulatory period under review, we could extend this adjustment to future regulatory period in one of two ways:

- 1. we could accelerate RAB depreciation in the current period, or
- 2. include explicit adjustment to the pricing path over the regulatory period which would allow a future Tribunal to consider this adjustment in a future regulatory period.

Stakeholders commenting on this draft decision provided mixed feedback.

SDP's preferred option for implementing an NPV-neutral pricing adjustments over multiple periods is to accelerate depreciation in the regulatory period under review. SDP strongly disagreed with the second option of including an explicit adjustment to the pricing path that a future Tribunal could consider in the subsequent regulatory period. In its view, this option would create uncertainty for consumers and for businesses, because IPART could not bind a future Tribunal to consider a previous adjustment.⁹¹

In contrast, Hunter Water supported Option 2 and did not support Option 1. In its view, accelerating regulatory depreciation is not appropriate because depreciation rates should "reflect asset lives and support long-term financial stability".92

Given mixed feedback from stakeholders, our final decision is to maintain both options and to consider the appropriate response in the context of a price review.

6.3.2 We will adopt a staged process

We have maintained our preference to limit NPV-neutral pricing adjustments to a single regulatory period if possible. However, in some cases, limiting a pricing adjustment to a single regulatory period could lead to excessive price volatility. Therefore, we will adopt a staged process by:

- first considering the most restrictive changes that have the least impact on future regulatory periods, and then
- gradually considering changes that allow more flexibility over future pricing paths.

If the Tribunal considers a pricing adjustment is necessary to account for temporary cash flow concerns, we would first consider whether it is feasible to implement an adjustment to prices within a single regulatory period only. This would have no impact on prices in subsequent regulatory periods, but offers the Tribunal the least flexibility to smooth prices. We anticipate that in most cases any such price path amendment would be appropriate.

⁹¹ SDP submission to IPART Draft Report, September 2018, p 18.

⁹² Hunter Water submission to IPART Draft Report, September 2018, p 12.

If such an adjustment would lead to excessive price volatility, our final decision is that the Tribunal could consider two options to implement an NPV-neutral pricing adjustment over multiple periods. These options are:

- 1. Increasing prices in the regulatory period by providing a higher depreciation allowance. Allowing a higher depreciation allowance would increase prices in the regulatory period to address a financeability concern, but would lead to lower prices in the next regulatory period. This would be NPV-neutral over the life of the assets, because the starting value of the RAB in the subsequent regulatory period would be lower to offset higher prices in the previous period.
- 2. Making an 'ad hoc' adjustment to the NRR over the next regulatory period. We could then publish the value of this adjustment, in present value terms, which would allow a future Tribunal to consider this adjustment in future periods.

Table 6.1 highlights the pros and cons of the two approaches. In particular:

- There may be some cases where providing a higher depreciation allowance is not appropriate. For example, where a business has a finite lease over regulated assets, accelerating depreciation would not be NPV-neutral for the business. This is because the higher depreciation allowance is recovered gradually over the entire remaining life of assets, rather than being limited to the remaining period that the business has a lease over these assets.
- Adjusting prices with an 'ad hoc' adjustment outside the building block allowance would allow the Tribunal maximum flexibility to adjust prices in the regulatory period to respond to a financeability concern. However, this may create a lack of certainty for stakeholders on what a future Tribunal may decide with regard to this adjustment. To address this, we could publish the present value of this adjustment, which would allow a future Tribunal to consider this adjustment in subsequent regulatory periods.

	Accelerate RAB depreciation	Adjust prices (NRR) outside the building block model
Pros	Implements an NPV-neutral adjustment over multiple regulatory periods.	Provides maximum flexibility to the Tribunal to adjust prices.
Cons	May not be NPV-neutral if a business has a finite term lease over regulated assets. Has a similar effect of moving prices from a real WACC allowance towards a nominal WACC allowance.	May create a lack of certainty for stakeholders on what a future Tribunal may decide with regard to the adjustment in subsequent regulatory periods.

Table 6.1	NPV-neutral	pricina	adiustments	over multi	ple periods
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By adopting this process, the Tribunal could first consider the most restrictive changes which have the least impact on future regulatory periods, before gradually considering changes which allow more flexibility over future pricing paths.

Appendices

A Previous IPART financeability reviews

We completed the first review of our financeability test in January 2011.⁹³ In that review, we decided that if we identified a financeability concern that could not be addressed by the business's managers and shareholders, we would set the WACC above its midpoint or include an additional allowance in the annual revenue requirement.

In December 2013, we conducted our most recent comprehensive review.⁹⁴ It established the financial metrics we would consider, how to calculate those metrics (including adjustments) and the benchmarks for comparing those financial ratios. As a key change, we decided that if we identified a financeability concern, we would consider making a neutral net present value (NPV) adjustment to our pricing decision.

In April 2015, we released a fact sheet detailing relatively minor updates to how we calculate the financial ratios.⁹⁵

Box A.1 summarises our 2013 test.

⁹³ IPART, *Financeability tests and their role in price regulation – Final Decision*, January 2011.

⁹⁴ IPART, *Financeability tests in price regulation – Final Decision*, December 2013.

⁹⁵ IPART, *Fact Sheet, Final Decision – Financeability ratios*, April 2015.

Box A.1 The review and subsequent 2013 test

Objectives of the review

The objectives of the 2013 test were to:

...assess the short-term financial sustainability of the utility ... whether the utility will be able to raise finance, consistent with an investment grade-rated business, during the regulatory period.

The subsequent 2013 test

1. We assess a business's financeability by first calculating three financial ratios:

- a) Funds From Operations (FFO) interest cover: This is calculated as FFO plus interest expense divided by interest expense. This ratio measures a business's ability to service interest payments on debt.
- b) **Debt gearing (regulatory value):** This is calculated as debt divided by the regulatory value of fixed assets. It measures a business's leverage.
- c) **FFO divided by debt:** This is a more dynamic measure of leverage than debt gearing because it measures a business's ability to generate cash flows to service and repay debt.
- 2. We rank the three measures, focusing on the ratios that are most relevant in assessing the likely financial sustainability of a business.
- 3. We check whether our calculated financial ratios are consistent with our **benchmarks** for the three ratios. We use a credit rating of a Baa2 for our benchmark ratios.
- 4. We assess whether the business faces potential financial concerns over the regulatory period. We do not expect a business to meet every ratio in every year of a determination period.
- 5. If we identify a financeability issue, we may extend our analysis to include two to three years before and after a regulatory period, if the business has provided sufficiently robust data for the forecasts. We also review the business's financial statements, particularly its Cash Flow Statement, to assess its ability to fund capital expenditure and dividends.
- 6. If a financeability concern exists, we identify the likely reasons and options available to the business and its owners to manage those concerns.
- 7. We assess whether we should make an explicit regulatory adjustment to address financeability concerns in the form of an NPV-neutral adjustment.

As the test was designed to assess a business's ability to finance its operations during a regulatory period, we do not issue a notional credit rating for the business as part of the test.

What inputs do we use for the test?

- We use the business's forecast cash flows as determined for the review, and its actual gearing ratio and forecast cost of debt.
- We adjust for operating lease expense and pension benefits, based on data supplied by the business. The adjustments are based on Moody's published methodology at the time of the 2013 review.^a

a Moody's Investors Service, Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations, December 2010.

Source: IPART, Financeability tests in price regulation – Final Decision, December 2013.

B Relationship between the building block approach and the financial ratios in the benchmark financeability test

When making our price determinations for regulated businesses, we often use a building block approach to determine the Notional Revenue Requirement (NRR) for the business. This appendix shows how the components of the NRR relate to the financial ratios that we have proposed in the benchmark financeability test.

B.1 Notional revenue requirement

As shown in Chapter 4, Box 4.1 there is a direct link between the components in the NRR and the inputs for the benchmark financeability test. To recap, the NRR is the sum of:

- Regulatory operating expenditure (Opex)
- Regulatory Depreciation (*Dep'n*)
- Return on Assets (RoA) = WACC x RAB = Return on debt (RoD) + Return on equity (RoE)
- Return on Working Capital (*RoWC*) (this typically represents less than 1% of NRR)
- Tax Allowance (TA)

So, if we omit the return on working capital (because it is small):

$$NRR = Opex + Dep'n + (RoD + RoE) + TA$$
(1)

Also, note that *RoD* is equivalent to the interest expense in the benchmark test and that:

- RoD = real cost of debt x RAB x gearing, and
- RoE = real cost of equity x RAB x (1-gearing)

B.2 Funds From Operations

One of the key inputs for the financeability test is Funds From Operations (*FFO*). For the benchmark test this is calculated as:

$$FFO = Cashflow from Operations + Changes in Working Capital - RoD$$
 (2)

FFO also includes interest received, however for the financeability test, we assume all cash is used to pay down debt and therefore the interest received is set to zero. By the same argument, net debt is then simply total debt.

The formula for *Cashflow from Operations* for the benchmark test is:

$$Cash flow from Operations$$
(3)
= NRR - Opex - TA - Changes in Working Capital

Then, substituting (3) into (2)

$$FFO = NRR - Opex - TA - RoD$$
(4)

And then, substituting (1) into (4)

$$FFO = [Opex + Dep'n + (RoD + RoE) + TA] - Opex - TA - RoD$$

Therefore

$$FFO = Dep'n + RoE \tag{5}$$

B.3 FFO / Debt

The ratio FFO / Debt in the benchmark test is therefore:

$$\frac{\text{FFO}}{\text{Debt}} = \frac{(\text{Dep'n} + \text{RoE})}{(\text{RAB} \times \text{Gearing})}$$
(6)

Note that:

$$Dep'n = \frac{Opening \, RAB}{asset \, life \, of \, existing \, assets} + \frac{Capex}{asset \, life \, of \, new \, assets} \tag{7}$$

And

$$RoE = real \ cost \ of \ equity \times RAB \times (1 - gearing) \tag{8}$$

Therefore, if we:

- Normalise the value of the RAB to 1
- Define *a* as the gearing ratio
- Define ε as the real cost of equity
- Define *l* as the weighted average asset life across existing assets and new capex
- Ignore working capital (which is small)

Then we can approximate the FFO / Debt ratio as a simple equation:

$$\frac{FFO}{Debt} = \frac{\frac{1}{l} + (1 - \alpha)\varepsilon}{\alpha}$$
(9)

Figure B.1 below plots the combination of average asset life and return on equity that correspond to FFO / Debt ratios of 5%, 6% and 7%.



Figure B.1 FFO / Debt expressed by return on equity and average asset life

Data source: IPART analysis

C Selecting financial ratio targets for the benchmark test

Real FFO over Debt

In Appendix B, we showed that Real FFO over Debt is (excluding working capital) can be approximated as the simple equation:

$$\frac{Real FFO}{Debt} = \frac{\frac{1}{l} + (1 - \alpha)\varepsilon}{\alpha}$$
(1)

Where

- *a* is the gearing ratio
- ε is the real cost of equity
- *l* is the weighted average asset life across existing assets and new capex

Firstly, we assume that the **starting value** of debt is the same if a business faced a nominal, or a real, cost of debt. Then, because the difference between the nominal and real FFO is the inflation component of nominal interest rates which is not capitalised in the nominal ratio, the FFO over Debt (ie nominal FFO over Debt) is:

$$\frac{FFO}{Debt} = \frac{\frac{1}{l} + (1 - \alpha)\varepsilon - inf(d)}{\alpha}$$
(2)

Where

- *inf*(*d*) is inflation which is capitalised into the future value of debt

So

$$\frac{FFO}{Debt} = \frac{(Real)FFO}{Debt} - inf$$

If the target ratio for the nominal FFO over Debt is 6% and inflation is assumed to be 2.5% then the Real FFO over Debt is 8.5%.

However, **over time**, the value of debt would not be the same, because the inflation component of nominal interest rates is not capitalised into the RAB in the nominal formula. As a consequence of not capitalising current inflation into the value of debt, the future value of debt is relatively lower under a nominal debt framework. Therefore, the gap between the Real FFO over Debt ratio and the FFO over Debt ratio would reduce over time.

Therefore, the 'uplift' assigned to the real target ratio needs to be discounted to the extent future inflation is not capitalised in the nominal formula. With that said, we do not consider that it feasible to derive an exact analytical solution as it depends on the specific financial parameters of the benchmark business (including past and future inflation, as well as the discount rate applied over time). Overall, we consider that a small uplift for the Real FFO over Debt ratio target is appropriate, to reflect that the nominal FFO over Debt ratio could include the potential for a business to capitalise future inflation. On this basis, we have chosen a Real FFO over Debt target ratio of 7.0%.

Real Interest coverage ratio (RICR)

As shown above in Chapter 5, ICR ratio is calculated as

$$ICR_t = \frac{Real FFO_t + r_t}{[r_t + inf(d)_t]}$$

And

$$RICR_t = \frac{Real\,FFO_t + r_t}{r_t}$$

where:

- *t* is the time period
- *FFO* is Funds From Operations adjusted for operating leases and superannuation liabilities and for inflation
- *r* is the real return on debt
- *inf*(*d*) is inflation which is capitalised into the future value of debt

Firstly, we assume that the **starting value** of debt is the same if a business faced a nominal, or a real, cost of debt. Then, if we let *Real* (*FFO*_t) + $r_t = A_t$

$$ICR_t \sim RICR_t$$

$$\frac{A_t}{r_t + inf(d)_t} \sim \frac{A_t}{r_t}$$

Given $inf(d)_t > 0$

$$\frac{A_t}{r_t + inf(d)_t} < \frac{A_t}{r_t}$$

Divide by A_t

$$\frac{1}{r_t + inf(d)_t} < \frac{1}{r_t}$$

Therefore, the difference between ICR and RICR will therefore depend on the real cost of debt and inflation rate. As an example, for a real cost of debt of 4% ($r_t = 4\%$), an inflation rate of 2.5% ($inf(d)_t = 2.5\%$), and a nominal ICR target of 1.8, then:

$$RICR_t = \frac{1.8 \times 6.5}{4} = 2.9$$

However, **over time**, the value of debt would not be the same, because the future value of debt is lower under a nominal debt framework if inflation is not capitalised into the future value of debt. Therefore, this gap would be expected to reduce over time, but the exact difference between the nominal and real ratios over time would depend on the specific financial parameters of the benchmark business.

As with the FFO over Debt ratio, we consider that a small uplift for the Real Interest Coverage Ratio is appropriate, and have chosen a RICR target ratio of 2.2 times.

D Comparison with other regulators' approaches to financeability

Table B.1 compares the 2013 test with those of other regulators.

	IPART	ESC	Ofgem	Ofwat
Objectives	To test the short-term financial sustainability of the utility. To assess whether the utility will be able to raise finance, consistent with an investment grade– rated business, during the regulatory period.	To test whether each business can maintain an investment-grade credit rating, and service the financing costs arising from investment in infrastructure to meet service expectations. ("Financial viability of the industry" is a requirement of the <i>Essential Services</i> <i>Commission Act</i> 2001.)	To test whether an efficient network has the ability to "secure financing to facilitate the delivery of their regulatory obligations" (a legal requirement of Ofgem). That is, whether "a notional efficient network company" can attain "a comfortable investment grade" credit rating.	To "assess whether allowed revenues are sufficient for a company to finance its investment on reasonable terms and to deliver its activities in the long term, while protecting the interests of existing and future customers".
Period of assessment	Upcoming regulatory period.	10-year horizon.	Upcoming price control period.	Average and trends over the upcoming price control period.
Benchmark or actual data	Actual capital structure and forecast interest expense.	Actual capital structure and forecast interest expense.	Benchmark gearing and cost of debt. ^a Conducts scenario testing using actuals.	Benchmark gearing and cost of debt. ^a
Financeability concern indicator	Compares ratios against financial ratio benchmarks. Does not expect a utility to meet every financial ratio benchmark in every year.	Applies a "degree of judgement" when using metric thresholds and considers the trend in the ratios over time.	Fails to meet target ratio for a sustained period. Deviates significantly from a target for more than one year. Repeatedly fails one target.	A range of metrics look weak over multiple years or there is a significant decline in cash flow metrics.
Remedy for a financeability concern	Extend analysis to two to three years before and after a regulatory period (if robust data is available). Refer short-term financeability concerns to the shareholders or management. Consider an NPV- neutral adjustment if shareholders or management cannot feasibly address the concerns.	Make an upward adjustment to prices in an NPV-neutral way (but not for imprudent business decisions). Price increases over a current single regulatory period are offset by future NPV- neutral price reductions, smoothed over a number of years to ensure business does not re-enter a financially vulnerable position.	Preference for NPV- neutral adjustments.	Reduce amount of totex capitalised and/or increase regulatory depreciation (in an NPV-neutral way). ^b Restrict dividends. Equity injections. Companies may propose remedies.

Table D.1 Con	nparison of th	e financeability	y test framework

a The benchmark gearing ratio is set at the beginning of the period and is allowed to fluctuate endogenously based on the cash flows and expenditures of the benchmark business during the regulatory period.

b This adjustment is conceptually equivalent to reducing capex and increasing opex by the same amount (in present value terms).

Sources: IPART, Financeability tests in price regulation – Final Decision, December 2013; ESC, Assessing the financeability of Victorian water businesses: Consultation paper, December 2013; ESC, Assessing the financial viability of Victorian water businesses: Summary of views and proposed new indicator, June 2014; Ofgem, Strategy decision for the RIIO-ED1 electricity distribution price control: Financial Issues – Supplementary annex to RIIO-ED1 overview paper, March 2013; Ofwat, Delivering Water 2020: Our final methodology for the 2019 price review, December 2017.

Table D.2 compares our financial metrics with those of other regulators and Moody's.

Table D.2	Comparison o	of the financial	metrics used in	the financeability	v test

Financial metric	Interpretation	Typical formula applied	IPART	ESC	Ofgem	Ofwat	Moody's
Debt ratios							
FFO interest cover	Measures the business's ability to service its debt	(FFO+interest)/interest	✓	✓	✓	\checkmark	✓
Gearing	Measures the business's leverage	Net debt/RAB	✓	✓	✓	✓	✓
FFO/net debt	Measures the business's ability to generate cash flows to service and repay debt	FFO/net debt	✓	✓	✓	✓	✓
RCF/net debt	Measures a company's debt burden relative to operational income, after paying dividends	(FFO-dividends paid)/net debt			✓	✓	✓
Internal financing ratio	Measures extent to which an entity has cash remaining to finance capex after dividends	(FFO-dividends paid)/capex		✓	✓		
Adjusted interest cover ratio (PMICR ^a)	Measures a company's ability to meet its interest payments, taking into account regulatory depreciation	(FFO + interest–RAB depreciation)/interest			~		
Adjusted cash interest cover ratio (ACICR)	Measures a company's ability to meet its interest payments after meeting costs that have been expensed and RAB run-off	(FFO(pre interest)–RAB run off)/cash interest				~	
Equity ratios							
Regulated equity/EBITDA	Measures the return on regulated equity	Regulated equity/EBITDA			\checkmark		
Regulated equity/profit after tax	Measures the return on regulated equity	Regulated equity/profit after tax			~		
Dividend cover ratio	Measures a company's ability to pay dividends or, if a financeability problem is due to dividend commitments	Profit after tax/dividends declared			✓	~	
Return on capital employed	Allows assessment of overall returns against the WACC	Profit after tax/ RAB				✓	
Return on regulated equity	Allows assessment of the returns earned by equity providers against the cost of equity	(EBIT-tax-(cost of debt* net debt))/ equity component of the RAB				✓	

a PMICR stands for 'Post-maintenance interest coverage ratio'.

Sources: IPART, *Financeability tests in price regulation – Final Decision*, December 2013; ESC, 2018 water price review – Guidance paper, November 2016; Ofgem, *RIIO-ED1: Draft determinations for the slow-track electricity distribution companies: Financial issues – Supplementary annex to RIIO-ED1 overview paper*, July 2014; Ofwat, *Delivering Water 2020: Our final methodology for the 2019 price review*, December 2017; Moody's Investors Service, *Rating methodology – Regulated Water Utilities*, June 2018.

E Incenta Economic Consulting Report

Review of IPART'sfinanceability test

Report for IPART

1 November 2018







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1. Summary of advice

IPART has proposed a number of financeability measures (financial indicators) and associated targets (thresholds), some of which have raised objections among its stakeholders in the New South Wales water sector. A number of these objections are based on comparisons with the practices of credit rating agencies in Australia. While we think it is important to draw upon the practices of the credit rating agencies – given the objective of assessing financeability and the explicit target of a Baa/BBB rating – it is also important to acknowledge that IPART's objective differs from the credit rating agencies' purpose of assigning of a credit rating to a business. IPART's purpose is to check whether its pricing decisions are likely to give rise to a financeability concern, and in doing so it is only practicable for its test to focus on the outcomes of IPART's pricing decisions on the business.¹ Credit agencies, on the other hand, consider all the factors relevant to credit risk affecting a business to determine a credit rating that is consistent with a given probability of default.

Standard measures

Moody's vs. Standard and Poor's

We note that much of the criticism about the thresholds that were proposed by IPART for the standard credit rating financial indicators was unfair, and based on a misreading of how Moody's applies its stated thresholds for the financial indicators when it undertakes its credit assessments.

As a general matter, while we consider the Moody's methodology for credit assessment to be sound and appropriate for the task of assessing credit ratings, we believe that the methodology is less amenable to application in a regulatory benchmark setting than the method of Standard & Poor's. The particular difficulty with interpreting Moody's thresholds for the regulatory task is that the thresholds reflect a more generic business and then other factors tend to lead to a substantial increase in the assigned credit rating. Most regulated firms have financial indicators that suggest a Ba rating and yet are assigned a Baa rating. In contrast, the thresholds published by S&P typically reflect most of the risk factors that are relevant to the credit rating assessment, and the credit rating that is suggested by a mechanistic application of these threshold is typically the appropriate one for a regulatory benchmark purpose.

Interest Cover Ratio

We consider this metric is correctly presented and we agree that the Baa / BBB threshold of 1.8x is reasonable (noting that this is slightly higher than the S&P threshold for BBB for a regulated water business of 1.5x). We note that Moody's and S&P sometimes differ in their philosophy regarding the Interest Cover Ratio, with the former in some countries adopting a cash concept (cash interest paid) and the latter relying on interest expense. While the numerator will be the same under each measure, the denominator – and hence the interest cover ratio that is calculated – will be different. If the cash interest paid were to be less that the interest expense (e.g. due to CPI-indexed debt) the ratio calculated by Moody's would be greater than that calculated by S&P. As discussed below, there is

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We observe that the entities that IPART regulate include those that are quite different to a standard regulated utility (e.g., that hold a single asset and have a (potentially) limited life). The discussion in this report will not necessarily be applicable to a financeability assessment of such non-standard entities.



negligible CPI-indexed debt in the market, which would imply that the Moody's and S&P measures are generally very similar.

FFO/Debt

This metric is also correctly presented according to the Moody's methodology, which applies the cash interest payment when calculating FFO (the numerator), which is slightly different to that of S&P which applies the interest expense. Again, given the very small amount of CPI-indexed debt in the Australian market, the outcome for this financial indicator according to the Moody's and S&P calculation would be expected to be very similar or the same. We consider that the threshold of 6 per cent is appropriate for a regulated water business.

Debt/RAB

This is a traditional measure that requires little comment as to calculation. However, we consider that based on limits that Moody's has applied in regulated energy, the 70 per cent threshold may appear too low and that a higher threshold could be justified (85 per cent could be justified). We note that in the benchmark assessment the Debt/RAB ratio is an input rather than an output of a price setting process.

RCF/Debt

While we think this indicator may provide some information that is relevant to the financeability assessment for the "actual" case, we agree with IPART that it will not provide more information for the benchmark case, and note that it is given only a small weighting by credit rating agencies in any event.

Alternative measures - interest cover and FFO/Debt

IPART has proposed alternative measures, which were previously (in the Draft Report) referred to as "adjusted ratios". We understand that this terminology will be changed to "real ratios" for the Final Report, and for consistency we have aligned our terminology to match with IPART's new terminology.

Merits of the methods

IPART has also applied the interest cover and FFO/debt financial indicators discussed above with only the real component of interest (i.e., the cost of debt) included in the calculation of FFO and interest. This financial indicator could be justified as:

- reflecting a benchmark assumption that the businesses have all of their debt in inflation-linked instruments, and simply applying the Moody's calculations of the interest cover and FFO/debt financial indicators, or
- forming a new financial indicator, which is intended to capture the more general ability for a benchmark firm with a RAB that is escalating with CPI to issue new debt in line with the RAB indexation and so generate additional cash inflow (in this case, additional cash flow from

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financing activities), and to avoid the inflation component of debt to be double-counted in the financeability assessment.²

Many of the criticisms of IPART were directed to whether it is appropriate to assume that a benchmark firm could be wholly financed with inflation-linked debt. We agree that it would be unreasonable to assume that a benchmark firm could finance to any material extent with inflation-linked debt (noting that there have not been any new issues of inflation-linked corporate debt by Australian utilities since the Global Financial Crisis, and few before). However, we think that the better interpretation of IPART's proposal is the second of those outlined above, namely that it is defining new financial indicators for the benchmark assessment.

To this end, we observe that the new measures have merit, and we agree with IPART's view that there is the potential for a benchmark firm with an indexing RAB to generate additional cash flow. However, we also think that it is reasonable to expect that the potential for this additional cash flow is built into the targets for the standard interest cover and FFO/debt measures.³ If so, the real interest cover and FFO/debt measures should not be expected to suggest that the NSW water sector as a whole is any more or less financeable than suggested by the standard measure. Consequently, while we endorse applying the real financial indicators, we recommend:

- adjusting the thresholds to reflect the revised financial indicators, and
- also applying the standard financial indicators to the benchmark case (by which we mean applying the S&P indicators or, equivalently, Moody's indicators with an assumption that the firm has financed wholly in standard fixed rate terms).

This latter advice reflects:

- the difficulty of establishing robust thresholds for the revised indicators, and
- our view that the transparency of the exercise will be improved by drawing upon the practices of ratings agencies to the extent possible, albeit noting IPART's different objective as discussed above.

Thresholds for the new financial indicators

As noted above, to the extent that the potential additional cash flow is built into standard ratios, the new financial indicators would not be expected to suggest that the NSW water sector as a whole is any more or less financeable than suggested under the standard measures, although the new indicators may yield different insights across firms and over time.⁴ This expectation suggests that an

² To be clear, Moody's calculation of the financial ratios will only recognise the additional cash flow associated with an indexing stock of debt where this arises from having inflation-linked debt instruments in place, and not from the case where a firm simply issues new debt to track the indexing RAB.

 ³ By standard measure, we mean (i) the S&P financial indicators, or (ii) the Moody's financial indicators, but calculated on the assumption that the benchmark firm has a level of CPI-linked debt that is consistent with the level observed across peer corporate entities (i.e., very limited issuance).
⁴ For example, one area where the standard and new measures will provide different insight is where

forecasts of inflation either reduce materially or increase materially compared to past forecasts.



approximate means of deriving thresholds for the new indicators would be to calculate the average difference between the performance of the NSW water sector under the standard indicators and under the real indicators, and use this as the basis for adjusting the thresholds. Our estimate of the adjustments to the thresholds that this method would deliver are as follows:⁵

Figure 1.1 – Derivation of thresholds for the real financial indicators (benchmark financing assumed)

	Standard indicator	Real indicator	Difference
Interest Cover (average FY17 to FY21)	Benchmark as	sumptions	
Sydney Water Corporation	1.86	2.87	1.01
Hunter Water Corporation	1.81	2.80	0.99
Gosford	1.68	2.83	1.15
Wyong	1.80	3.03	1.23
Sydney Catchment Authority	1.73	2.79	1.06
Average	1.78	2.86	1.08
FFO / Debt (average FY17 to FY21) - Be	nchmark assun	nptions	
Sydney Water Corporation	5.14%	7.31%	2.16%
Hunter Water Corporation	4.93%	7.11%	2.18%
Gosford	4.04%	6.43%	2.39%
Wyong	4.69%	7.07%	2.37%
Sydney Catchment Authority	4.67%	7.08%	2.41%
Average	4.69%	7.00%	2.30%

Drawing upon the conclusions above, this would imply adopting thresholds for the new financial indicators of:

- Real interest cover: 1.8 + 1.1 = 2.9 times,⁶ and
- Real FFO/Debt: 6.0% + 2.3% = **8.3 per cent.**

However, we caution that these estimates of the thresholds for the real financial indicators should be treated as indicative only.

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Our estimates apply actual and forecast financial information that was provided by IPART for the benchmark financing assumptions, spanning the 5 year period commencing with FY17. We have used in our analysis the larger entities that are more like standard utilities, and so have excluded the Sydney Desalination Plant, WaterNSW Rural and Essential Energy's Broken Hill business.

We have used IPART's threshold of 1.8x, which is based on the thresholds that Moody's applies, as the start point. We have advised that S&P would be likely to apply a threshold of 1.5x for interest cover. Applying S&P's threshold as the start point would imply a threshold for the adjusted interest cover financial indicator of 2.6x.



2. Advice and commentary on how IPART calculates its financial ratios and sets its thresholds

2.1 Introduction

IPART is seeking our view as to whether the credit metric ratios it proposes to calculate are being correctly calculated. By way of background, IPART applies two forms of financeability tests, which are expected to assist in the detection of potential financeability issues, and the causes of these issues, which could allow better targeted regulatory responses:

- Benchmark test Under IPART's proposed benchmark test the cash flows determined by following a regulatory benchmarks approach are tested for financeability using the real cost of debt and benchmark gearing ratio used in the WACC.
- Actual test In the actual test, IPART proposes to use the business's current debt outstanding, and forecast interest expense and dividend payments, but would not include the inflation indexation component in the interest expense if the interest expense is on a nominal basis.

The Draft Report proposes, in effect, that four ratios be applied:

- Interest Cover Ratio (ICR), calculated with:
 - the historical cost standard of interest, and
 - interest assumed to reflect the real cost of debt
- FFO/Debt, again calculated with:
 - the historical cost standard of interest, and
 - interest assumed to reflect the real cost of debt
- Debt/RAB.

IPART has also asked us to review the issue of whether the single thresholds that it has set for the financial metrics it intends to calculate are appropriate for the industries being regulated. The metrics that it presented in its Draft Report were as follows:⁷

- An Adjusted Interest Coverage Ratio and an Interest Coverage Ratio of greater than 1.8 times.
- A FFO over debt ratio greater than 6%.
- A debt to RAB gearing ratio less than 70%.

In this section, we:

IPART (August, 2018), p.44.



- first address the question of whether there should be a single threshold for each metric
- then address the calculation and thresholds for the standard (historical cost) financial indicators, and
- the address the calculation and thresholds for the adjusted financial indicators.

2.2 Single threshold level for each credit metric ratio

IPART's proposals

IPART's Draft Report proposed that instead of providing an upper and lower bounds range of credit metrics for each metric, it will only provide a lower (or upper) threshold.

Our advice

We agree with IPART's intention to apply a single credit metric ratio threshold, as this is appropriate for financeability testing. We believe that such an approach provides for transparency and clarity.

2.3 Standard measures

In this section we introduce and discuss the standard credit metric measures that IPART is proposing to employ.

2.3.1 Interest Cover ratio (ICR)

IPART's proposals

IPART has proposed that the Interest Cover Ratio (ICR) with nominal debt financing can be presented as FFO (Funds from Operations adjusted for operating leases and superannuation liabilities) plus the nominal interest cost (which itself is comprised of a real return on debt, and an inflationary component), divided by the nominal interest cost (which can be similarly decomposed). IPART adopts the Moody's approach, which is to calculate the ICR using a cash flow measure, i.e. interest paid, rather than interest expense. Measured in this way, the ICR will yield different values depending on the degree of CPI-indexed debt that a business has or is assumed to have.

IPART's Draft Report has proposed a change in its approach since the last review of financeability testing, which is to apply the ICR only as a diagnostic tool in the actual test, and not to use it for the benchmark test. The adjusted ICR measure proposed to be used in the benchmark test is considered in section 2.4 below.

IPART has proposed an ICR threshold of 1.8x for a benchmark Baa / BBB credit rating for regulated water businesses.

Our advice

This is the standard interest cover metric that is applied by credit rating agencies to a large range of businesses. Our view is that this ratio is correctly measured as it is presented, and consistent with the Moody's measurement method. However, we note that Moody's and S&P have different views on



measurement, with the latter taking account of the non-cash component in the FFO measure and the former less likely to include this non-cash principal indexation component as part of the measure of interest. We understand S&P considers that using interest expense will provide a better view of long term financeability.⁸ Having said that, we observe that the level of CPI-linked financing by Australian utilities is very small (with no new corporate issues since the Global Financial Crisis) and so the indicators that are currently calculated by Moody's and S&P would be materially the same for entities with the standard financing of a corporate.

IPART has proposed a threshold value of 1.8x for ICR to be consistent with a BBB credit rating. There has been some conjecture in submissions about the applicability of this threshold level. It has been suggested that an ICR of 1.8x does not satisfy the Moody's (Baa) Water guideline, which suggests an ICR of at least 2.5x is required. We disagree with those conjectures, since the higher ICR threshold for Baa merely reflects the way that the Moody's credit rating methodology operates. For the avoidance of doubt, we consider the Moody's methodology to be sound, and appropriate for the task of assessing credit ratings; however, we believe that the methodology is less amenable to application in a regulatory benchmark setting than the method of Standard & Poor's. This is discussed in Box 2.1 below and in more details in Appendices A and B.

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When considering the impact of CPI-linked debt, we understand that S&P has sought to place all businesses on a "level playing field" by maintaining its traditional interest cover metric including the influence of the indexation component of the interest (estimated if necessary), so that the interest cover measure needs no adjustment. S&P makes a qualitative adjustment afterwards to reflect the improved liquidity that CPI-linked or other low coupon debt may confer, noting however, that sufficiency of liquidity in the S&P methodology is typically applied as a minimum threshold that a firm must meet to obtain an investment grade credit rating. See, Standard & Poor's (10 February, 2009), *Methodology And Assumptions: Recognizing The Sustainable Cash Cost Of Inflation-Linked Debt For Corporates.*



Box 2.1 – Applicability of the different credit rating methods for the regulatory tasks

Moody's methodology

As discussed in Appendix A, the Moody's methodology commences with targets that are more generic than those applied by Standard & Poor's (discussed in Appendix B). As a consequence, for the regulated water industry, and for regulated energy businesses, the Moody's credit metric thresholds imply relatively low credit rating bands (since the thresholds are more reflective of an average risk business). These metrics account for 40 per cent of the total weighted "scorecard" that is at the centre of the Moody's methodology, and regulated water businesses score highly (have higher "factor credit ratings" applied) than the average business. As a result, regulated water businesses invariably obtain higher final credit ratings than is implied by their credit metrics alone. Because of this disconnect, the actual thresholds that IPART has proposed are lower than those displayed for a Moody's Baa / BBB credit, but this is appropriate.⁹

Standard & Poor's methodology

Standard & Poor's methodology is another sound methodology for assessment of credit rating; however, its approach is in our view more amenable to benchmark analysis within a regulatory context. In the Standard & Poor's methodology all of the industry risks and most of the specific firm risks are factored into the thresholds that S&P applies (and publishes) with its credit rating assessments. Typically, there are no further adjustment to the mechanistic assessment against the financial target thresholds, and some of the adjustments that are observed (for example, the effect of a higher-rated supportive parent) may be ignored in a benchmark regulatory rating assessment.

Turning to the proposed threshold of 1.8x, we think that this is appropriate (and possibly a little high) for a regulated water business where the target credit rating is BBB. Under the Standard & Poor's methodology, a threshold of 1.5x would apply to this indicator, although this seems to be an issue where there is a slight difference of view with Moody's.¹⁰ Accordingly, we believe the threshold proposed is appropriate, provided the form of financing assumed reflects the observed practice of Australian corporates.

2.3.2 FFO/Debt ratio

IPART's proposals

The numerator of IPART's proposed FFO/Debt measure is funds from operations calculated in the standard manner using the Moody's approach (i.e. focused on the cash flow component of interest expense – interest paid), while the denominator is the debt outstanding adjusted for operating leases and superannuation liabilities.

The Baa / BBB threshold value proposed by IPART is 6 per cent.

¹⁰ Moody's applies a threshold of 1.8x for the Ba rating band, but for the reasons discussed in the text, this would be likely to correspond to a Baa rating for a regulated water business once the risk characteristics of the industry are considered.

To be clear, if a low volatility regulated water business were to achieve Baa level credit metrics, the high (generally higher than Baa) ratings that it would achieve on the other factors (accounting for 60 per cent of the weighting) would be likely to result in a higher overall credit rating than Baa.



Our advice

We observe that, for regulated infrastructure businesses and at the present time, the FFO/Debt metric is the key metric used by both Moody's and Standard & Poor's for credit rating purposes.

Again, the financial indicator proposed by IPART reflects Moody's practice (i.e., by using the cash interest cost) and differs to S&P's practice (where the interest expense is applied). However, again, given the very limited issuance of CPI-linked debt by Australian utilities, the values for the Moody's and S&P indicators will be the same or materially the same for entities with the standard financing of a corporate.

The proposed threshold of 6 per cent is consistent with Standard & Poor's threshold for a regulated water business where the target credit rating is Baa / BBB. This reflects our assumption that such an entity would be assigned an "excellent" business risk profile and be assessed against the thresholds for financial ratios that apply to "low volatility" industries, which would mean that the business would be able to have an "aggressive" financial risk profile and still maintain the target rating. We consider these assumptions to be reasonable. We would also expect the 6 per cent threshold to be appropriate for a business that is rated Baa / BBB by Moody's, provided the form of financing assumed reflects the observed practice of Australian corporates.

2.3.3 Gearing ratio (Debt / RAB)

IPART's proposals

IPART calculates the Gearing Ratio as end of period debt divided by the end of period Regulated Asset Base (RAB). This ratio is not needed in the benchmark test because it already assumes that the benchmark gearing ratio is applied (e.g. 60 per cent). However, IPART proposes to use this for the actual test, where the business's opening debt balance and forecast dividend payments would be applied.

Our advice

This measure is the traditional measure of Debt / RAB, and its measurement does not invite much comment.¹¹ However, Standard & Poor's does not use this measure, and cannot therefore be used as a cross-reference to assess the threshold. With respect to some of the previous metrics it may be noted that the thresholds IPART has proposed for a Baa / BBB threshold (1.8x for ICR and 6 per cent for FFO/Debt) reflect Moody's Ba thresholds, but that are, in reality, more consistent with a Baa rating.¹² This coincidence does not apply to the Debt/RAB ratio, where IPART has set the threshold at 70 per cent, which is the Moody's Baa threshold. Accordingly, the threshold set by IPART may be too low (a Ba threshold for debt / RAB would be 85 per cent).

Consistent with this, we have seen a threshold of 80 per cent applied for a regulated energy network forming a threshold between a BBB and BBB+ rating, which suggests that a debt / RAB ratio of 80 per cent for a regulated water business would be consistent with a BBB rating.¹³ We therefore

¹¹ While Moody's applies "net debt" in the numerator, IPART notes that its modelling assumes surplus cash is paid out in a benchmarking context.

¹² Moody's Financial Services (8 June, 2018), p.21.

¹³ We found that an 80 per cent threshold to maintain a BBB+ credit rating was applied by Moody's to Australian Gas Networks in 2015 (see Appendix A below).



recommend that IPART investigate this threshold further, by examining Debt / RAB thresholds in the regulated energy sector.

2.3.4 Other potential measures

Retained Cash Flow / Debt

One potential measure that IPART rejected was the Retained Cash Flow / Debt measure. It was rejected by IPART on grounds that in the financeability (benchmark) test dividends are calculated as a residual:¹⁴

This means an increase or decrease in cash flow (ie, FFO) will be reflected in a proportionate increase or decrease in dividend payments.

Our advice

Our initial view was that this measure could provide some insight into how management's financial management, specifically its dividend policy could be seen to be mitigating or exacerbating a financeability issue over time, although we agree that this metric may not yield any further information for a benchmark assessment.¹⁵

However, on balance we agree with IPART's decision to exclude this measure. At best, it is a marginal metric that accounts for only 12.5 per cent of the metrics component of Moody's scorecard, and 5 per cent overall in Moody's analysis. It is also not a "core" or "supplementary" ratio in Standard & Poor's metrics.

2.4 Alternative measures

2.4.1 Proposal

IPART has also applied the interest cover and FFO/Debt financial indicators discussed above with only the real component of interest (i.e., the cost of debt) included in the calculation of FFO and interest. IPART's motivation for the alternative measures is to ensure that its assessment of financeability is focussed on the cash generated by the businesses, and also to avoid a perceived double-counting of inflation in the financeability assessment.

2.4.2 The alternative measures are best seen as <u>new</u> financial indicators

We observe that a number of submissions have argued that the market for inflation-linked corporate debt in Australia is very small and that a benchmark firm could not raise this finance for all of its debt. We agree with this comment. While there were a number of issues of inflation-linked corporate debt prior to the Global Financial Crisis (GFC), much of this was "credit wrapped", and since the GFC (and the falling out of favour of "credit wrapping") there has been virtually no new inflation linked debt issued. This is discussed further in Appendix C. Equally, while there is a larger market for

¹⁴ IPART (August, 2018), p.42.

This is because the only difference between the FFO/debt and RCF/debt ratios is dividends, which would need to be an assumption in the benchmark test. Accordingly, the additional information would be tied wholly to the assumption that is made.



inflation-linked debt in the UK, none of the major regulated network firms have more than 50 per cent of their debt as inflation-linked, for which there are two reasons.

- First, the market for inflation-linked debt in the UK is small in comparison with the market for conventional fixed rate debt, and so supply constraints in the inflation-linked market are experienced.
- Secondly, even if supply constraints were not normally present, it is typically seen as prudent and efficient debt management practice to firms to spread their debt issues across a range of markets. This practice ensures that good relationships with potential debt providers are retained across multiple markets, which in turn minimises the firm's exposure to supply issues (and thus refinancing risk) in any one of those markets.

Thus, we agree with the views expressed that it would be neither possible nor prudent for an Australian regulated utility to finance the entirety of its debt in inflation-linked terms. As noted in the discussion of the Moody's practice for the UK utilities in Appendix D, Ofwat in its modelling of financeability for the benchmark water businesses assumes that 33 per cent of a water business's debt portfolio is inflation-linked.

That said, whether this observation is relevant depends upon how IPART's proposed adjusted interest cover and FFO/Debt indicators are to be interpreted.

One interpretation is that IPART is applying Moody's financial indicators and is assuming that a benchmark business finances entirely in inflation-linked terms. This is the interpretation that appears to have been assumed in submissions.

A second interpretation is that IPART is extending Moody's financial indicator to:

- factor in the assumption that a benchmark entity will maintain its stock of debt at the benchmark assumption (i.e., a fixed percentage of the RAB), and will finance via the efficient means to achieve this, and
- take account of the cash inflow this generates when assessing the firm's ability to meet interest payments.

We understand that this second interpretation more accurately reflects IPART's intention. This financial indicator does not assume any particular form of financing and so is not subject to the criticism above.

Having said that, however, this interpretation means that IPART's financial indicator is not the same as those that Moody's applies. This is because the IPART measure would factor in the *expectation* of a cash inflow arising from an increase in net borrowings, rather than counting that cash inflow only where there is an existing loan agreement to this effect (i.e., inflation-linked bonds) in place.

2.4.3 IPART's concern about double-counting is valid, but likely embedded in thresholds

The regulatory benchmark assumption that IPART applies is that the RAB escalates with inflation, and so the benchmark stock of debt for the firm must also increase with inflation. In light of this, we



agree with IPART's observation that there is a potential double-counting of the inflation component of the cost of debt when interest cover is measured on a historical cost basis. That is, we agree that if a firm maintains the regulatory benchmark stock of debt, it would have an additional source of cash flow that is ignored in the interest cover calculation.

- If the firm raised inflation-linked debt so that debt automatically tracked the benchmark,¹⁶ then the firm's (cash) coupon payments would only reflect the real component of the cost of debt, with the inflation being capitalised into the stock of debt.
- Alternatively, if the firm raised fixed rate debt, then it could nonetheless maintain the regulatory benchmark by raising the new debt to match the inflation indexation component. This would then generate additional cash flow in the form of an increase in net borrowings.

Indeed, the two strategies noted above could be structured to deliver the same cash flow outcome in an *ex ante* sense (*ex post*, differences would exist because of differences between forecast and actual inflation).

However, one comment that we would make is that the ability of regulated businesses with CPI-linked RABs to generate a cash inflow from increasing its net borrowings over time is not limited to the NSW water businesses. Rather, any business that expects rising cash flows would similarly be in a position to increase its net borrowings while maintaining a constant level of gearing, and so generate an additional source of cash inflow. More importantly, we would expect that most or all of the peer group for the NSW water businesses that are drawn upon by credit rating agencies when setting credit ratings would have an inflation-linked RAB.

While this observation does not mean that the real interest cover measure is inappropriate, it does imply that care is required to select an appropriate target. In particular, given that many firms (and possibly all of the peer group for the NSW water businesses) are likely to be in a position to generate additional cash inflow by raising net borrowings over time (and without harming their financial indicators), it should follow that the potential for this double-counting already would be reflected into the thresholds that rating agencies apply for historical cost interest cover. This has three implications.

- First, the application of the real measure should not be expected to show an increase in the financeability of the entire water sector.
- Secondly, as the adjusted measure would be easier for all firms to meet, the threshold for this indicator would also need to be higher.
- Third, the real measure would be expected to show the relative effects of the double-count across firms, and possibly about how financeability may change in response to certain events (such as a step up or down in the rate of inflation).

We return to the issue of the appropriate thresholds in section 2.4.4 below.

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This is setting aside some difference in the timing and calculation of the indexation adjustments between revenue/RAB and inflation-linked bonds.



2.4.4 Appropriate thresholds for the new measures

As noted above, the new interest cover and FFO/Debt ratios that are calculated in the manner that IPART proposes necessarily will be higher than the standard measure for all firms for which the measures are calculated. As the ratings agencies calculate the thresholds for the relevant financial indicators to reflect empirical relationships between that indicator and the risk of default, the thresholds that are applied for indicators where all firms would score higher than the standard indicators must be higher than for those standard indicators.

We also said that we expect that the application of the new interest cover and FFO/Debt indicators to the NSW water sector would not suggest that NSW water sector, on average, is any more or less financeable than the results of the standard indicators if the benefit from inflation-indexation of the RAB is already embedded in the thresholds that the ratings agencies apply for the standard financial ratios. Rather, we would expect that the different indicators may deliver different insights for different businesses, as well as over time.¹⁷

Accordingly, a difficulty with the application of the adjusted measure that there is no readily available target that can be taken from the practice of ratings agencies that can be applied for the regulatory benchmark financeability assessment. As noted above, the targets that ratings agencies set for financial indicators are based on empirical relationships between different financial indicators and historical rates of default, modified for the characteristics of the relevant peer group. Setting a target for a new indicator, therefore, may not be a straightforward task.

Having said that, our observation above that the NSW water sector *as a whole* could be assumed to fare equally under the standard and adjusted interest cover measures suggests that one means of establishing an *approximate* threshold for the adjusted interest cover and FFO/Debt indicators would be to add an increment to the standard thresholds that equates to the difference between the standard and adjusted indicators on average for the NSW water sector.¹⁸

We have undertaken this estimate applying actual and forecast financial information from IPART. In our analysis, we have:

• focussed on the average outcomes for the relevant financial indicators over the 5 year horizon commencing with FY17

¹⁷ Probably the most significant difference between the IPART adjusted interest cover metric and the standard interest cover metric would be seen if inflation suddenly swings upward and this flows through into higher nominal interest rates. Under this scenario, the standard historical cost interest cover indicator would decline for regulated firms with CPI-linked revenue/RABs, whereas the adjusted interest cover indicator would not change. The latter indicator, in this situation, would provide the more relevant guidance, assuming that the targets for the standard historical cost interest cover indicator remain unchanged.

¹⁸ Other methods could be applied to attempt to derive thresholds for the new indicators. One alternative would be to derive cost and revenue components for a benchmark firm and adjust the regulatory settings (for example, the rate of regulatory depreciation) so that the firm's financial indicators were just at the relevant threshold (e.g., FFO/Debt of 6 per cent). The corresponding outcome for the adjusted financial indictor could then be observed and applied as the threshold. This exercise could be repeated for different assumptions about the relativities of the cost and revenue components of the benchmark firm to test the robustness to variation in these assumptions.



- applied the benchmark financing assumptions, and
- limited the sample to the large firms that are most indicative of a standard utility service provider (on this basis, we have excluded the Sydney Desalination Plant, WaterNSW Rural and the Essential Energy Broken Hill business).

In terms of the calculation of the indicators, in a benchmark regulatory setting, the interest cover and FFO/Debt financial indicators can be expressed as follows:¹⁹

 $Interest \ Cover = \frac{Revenue - Opex - Tax}{Interest}$ $\frac{FFO}{Debt} = \frac{Revenue - Opex - Tax - Interest}{Debt}$

The definition of *interest* forms the difference between the standard and real indicators. For the standard indicators interest is calculated by applying the full nominal rate of interest to the benchmark debt, whereas for the real indicators interest is calculated using the real interest rate.²⁰ Thus, compared to the standard indicators, the real indicators result in a lower denominator for interest cover and larger numerator for the FFO/Debt ratio, leading to a higher result in both cases.

Our estimates of the adjustments to the thresholds that this method would deliver are as follows:

¹⁹ In a benchmark regulatory setting these formulae can be simplified even further by noting that, at the time of a price review, the expression "Revenue – Opex – Tax" is equal to the sum of the real return on equity and regulatory depreciation, provided that (i) the return on equity factors in the proportion of company tax that is not explicitly compensated (i.e., the proportion that is assumed to be delivered via imputation credits, or "gamma"), (ii) the revenue that is forecast for the year in question is not materially different to the target revenue (i.e., taking account of the effect of any smoothing of revenue over the regulatory period), and (iii) the target revenue is not adjusted for other factors (such as to give effect to incentive schemes).

As an example, if the nominal interest rate (for corporate debt) is 5.0 per cent and the forecast of inflation is 2.0 per cent, then the real interest rate is 2.9 per cent. If the benchmark debt is 100, then the nominal interest is 5 and the real interest is 2.9.



	Standard	Real	Difference
	indicator	indicator	
Interest Cover (average FY17 to FY27	1) - Benchmark as	sumptions	
Sydney Water Corporation	1.86	2.87	1.01
Hunter Water Corporation	1.81	2.80	0.99
Gosford	1.68	2.83	1.15
Wyong	1.80	3.03	1.23
Sydney Catchment Authority	1.73	2.79	1.06
Average	1.78	2.86	1.08
FFO / Debt (average FY17 to FY21) - I	Benchmark assur	nptions	
Sydney Water Corporation	5.14%	7.31%	2.16%
Hunter Water Corporation	4.93%	7.11%	2.18%
Gosford	4.04%	6.43%	2.39%
Wyong	4.69%	7.07%	2.37%
Sydney Catchment Authority	4.67%	7.08%	2.41%
Average	4.69%	7.00%	2.30%

Figure 2.1 – Derivation of thresholds for the real financial indicators (benchmark financing assumed)

Drawing upon the conclusions above, this would imply adopting thresholds for the new financial indicators of:

- Real interest cover: 1.8 + 1.1 = 2.9 times,²¹ and
- Real FFO/Debt: 6.0% + 2.3% = **8.3 per cent.**

However, we caution that these estimates of the thresholds for the real inductors should be treated as indicative only.

2.4.5 Should the real measures be applied in a benchmark setting?

One implication that some may draw from the above discussion is that the real measures should be dispensed with. This reflects that fact that they are novel, there is no readily available threshold available for the metric and because the measure should not indicate that the NSW water sector is more or less financeable as a whole than suggested by the standard interest cover and FFO metrics.

We think this implication would go too far. We think the real financial indicators may deliver relevant insights for different businesses, as well as over time.

For example, probably the most significant difference between the IPART real interest cover metric and the standard interest cover metric would be seen if inflation suddenly swings upward and this flows through into higher nominal interest rates. Under this scenario, the standard historical cost interest cover indicator would decline for regulated firms with CPI-linked revenue/RABs, whereas the real interest cover indicator would not change. The latter indicator, in this situation, would provide the more relevant guidance, assuming that the targets for the standard historical cost interest cover

²¹

We have used IPART's threshold of 1.8x, which is based on the thresholds that Moody's applies, as the start point. We have advised that S&P would be likely to apply a threshold of 1.5x for interest cover. Applying S&P's threshold as the start point would imply a threshold for the adjusted interest cover financial indicator of 2.6x.



indicator remain unchanged. The reverse outcome would also be shown where there is a reduction in inflation, namely that the increase in financeability suggested by the standard measure would be an overstatement of the true position.


A. Moody's ratings methodology

A.1 Moody's methodology vs Standard & Poor's

As discussed in the text, under the Standard & Poor's methodology (see Appendix B) the rating agency's judgments regarding volatility, business risk and financial risk regarding industry sectors are already made for the 'anchor' credit rating, so the translation of metrics to credit rating threshold is often straightforward. Departures from anchor ratings are not normally applied for a stand-alone single operation business single. Under the Moody's methodology, by contrast, the credit metrics are more generic inputs, together with other factors that determine credit rating. Hence, there is no neat translation of the observed credit metric to a credit rating threshold that is observed to be typical for regulated infrastructure businesses.

A.2 The Moody's methodology

The Moody's methodology centres around the preparation of a "scorecard" or "grid", that determines the initial credit rating based on weightings assigned to four broad risk factors:

- Business Profile
- Financial Policy
- Leverage and Coverage
- Uplift for structural considerations

1. The Scorecard factors

The scorecard factors are set out in Table B-1 below.²² These factors are for water utilities but are very similar to those used for regulated energy (i.e. the same weightings on business profile and financial policy, and slightly different weightings on the leverage and coverage ratios).

Moody's Financial Services (June, 2018), Rating Methodology - Regulated Water Utilities, p.4.



Table B-1: Scorecard for Regulated Water Utilities

	Factor		Sub-Factor
Rating Factors	Weighting	Sub-Factors	Weighting
BUSINESS PROFILE	50%	Stability and Predictability of Regulated Environment	15%
		Asset Ownership Model	5%
		Cost and Investment Recovery (Sufficiency & Timeliness)	15%
		Revenue Risk	5%
		Scale and Complexity of Capital Programme & Asset Condition Risk	10%
FINANCIAL POLICY	10%	5 Financial Policy	10%
LEVERAGE AND COVERAGE	40%	Adjusted Interest Coverage OR FFO Interest Coverage	12.5%
		Net Debt / Regulated Asset Base OR Debt / Capitalisation	10%
		FFO / Net Debt	13%
		RCF / Net Debt	5%
Total	100%	5 Total	100%
UPLIFT FOR STRUCTURAL CONSIDERAT	IONS	Up to 3 notches	

It is noteworthy that in this framework the credit metrics account for a 40 per cent weighting of the total score.

2. Measurement or estimation of factors in the Scorecard

Each factor in the scorecard is addressed, with a dynamic forward-looking approach that forecasts these factors, including the financial metrics that are calculated.

3. Mapping Scorecard factors to the ratings categories

After estimating / calculating each sub-factor, the outcomes for each sub-factor are mapped to a broad Moody's rating category (Aaa, Aa, Baa, Ba, B, Caa, or Ca).

4.Assumptions, limitations and rating considerations not included in the Scorecard

Moody's then discusses the limitations of the scorecard, including consideration of factors that may not be included in the scorecard.

5.Determining the Overall Scorecard-Indicated Outcome

Each of the sub-factor scores is converted into a numeric value based on the following scale:

Aaa	Aa	Α	Baa	Ba	В	Caa
1	3	6	9	12	15	18

An additional "overweighting" is applied by rating category as shown below:

Aaa	Aa	Α	Baa	Ba	В	Caa
1	1	1	1.15	2	3	5

Moody's weights the lower rating scores more heavily than higher scores because:



- It wants to adjust for cases where an issuer exhibits weak characteristics across the first two factors, which are not usual in the ratings universe and would require more demanding thresholds for the credit metrics; and
- It recognises that a serious weakness in one of the areas can't always be completely offset by strengths in others (e.g. constraints associated with a high degree of leverage can increase risks).

The actual weighting that Moody's applies to each sub-factor is "the product of that sub-factor's standard weighting and its over-weighting, divided by the sum of these products for all the sub-factors (an adjustment that brings the sum of all the sub-factor weightings back to 100%)."

Moody's multiplies the numerical score it obtains for each sub-factor by the adjusted weight for that sub-factor. The results then summed to produce a composite weighted-factor score, which is mapped back to the alphanumeric rating shown by the ranges in Table B-2.

Indicated Outcome	Indicated Rating Overall Score
Aaa	x < 1.50
Aa1	1.50 ≤ x < 2.50
Aa2	2.50 ≤ x < 3.50
Aa3	3.50 ≤ x < 4.50
A1	4.50 ≤ x < 5.50
A2	5.50 ≤ x < 6.50
A3	6.50 ≤ x < 7.50
Baa1	7.50 ≤ x < 8.50
Baa2	8.50 ≤ x < 9.50
Baa3	9.50 ≤ x < 10.50
Ba1	10.50 ≤ x < 11.50
Ba2	11.50 ≤ x < 12.50
Ba3	12.50 ≤ x < 13.50
B1	13.50 ≤ x < 14.50
B2	14.50 ≤ x < 15.50
B3	15.50 ≤ x < 16.50
Caa1	16.50 ≤ x < 17.50
Caa2	17.50 ≤ x < 18.50
Caa3	18.50 ≤ x < 19.50

Table B-2: Mapping of indicated rating overall score to credit rating outcome

Source: Moody's Financial Services (June, 2018), p.6.

6. Uplift for structural considerations

Finally, notching adjustments are made based "structural enhancements where they are incorporated either in the company's corporate structure, its regulatory license or its financing arrangements".



A.3 Examples of Moody's rating methodology

A.3.1 Sydney Water

To provide an example of Moody's methodology, Moody's considers that "Sydney water's business and regulatory risks are comparable to those of rated Australian regulated transmission and distribution networks," and has a long term rating of Aa3.²³ Sydney Water's weightings for its credit metrics are mainly in the Ba credit rating band, but:

- its weighted sub-factor score places it in the Baa1 band (equivalent to BBB+); and
- it obtains a 4-notch uplift to Aa3 based on "a high likelihood of support from the state [of New South Wales]" due to its 100 per cent ownership, Sydney Water's primary role of water and wastewater services in its are of operations and the absence of a privatisation policy.

A.3.2 Australian Gas Networks (AGN)

AGN is headquartered in Adelaide and owns and operates gas networks in South Australia, Queensland and New South Wales. It was rated Baa1 / BBB+ by Moody's in 2015, which was assessed in two stages.²⁴ According to its scorecard, the key credit metrics were assessed at Ba, but were outweighed by factor weightings of Baa to Aaa for the remaining factors, which resulted in a weighted credit rating of Baa2. However, in additional analysis this rating was raised one notch to Baa1 / BBB+ on grounds that the Baa2 result was influenced by previously lower metrics. Being rated at Baa1 / BBB+, Moody's expressed an opinion that it could be downgraded to BBB if the Debt / RAB ratio increased above 80 per cent on a consistent basis. This raises the question of whether an upper threshold of 70 per cent for a regulated water business is appropriate to maintain a broad BBB credit rating.

A.3.3 Aurizon Network

Another example is provided by Aurizon Network, which as noted in Appendix A, owns and operates a regulated 2,670 kilometer below-rail network in Australia's Central Queensland Coal Network.

Moody's scorecard places most of Aurizon Network's credit risk metrics in the Ba credit rating band, but this is offset by the positive impact of the other factors (accounting for 60 per cent of the score), which have higher ratings assigned through the scoring process. As a result, Aurizon Network obtains an overall rating from the scorecard of Ba2. However, this is upward notched (adjusted upwards) in the final assessment to Baa1. As explained by Moody's:²⁵

"The difference between this grid rating and the assigned rating recognizes the company's strong market position, the contractual and regulatory features of the network's business model, and our expectation that management will implement countermeasures to support the Baal rating if required".

²³ Moody's Financial Services (10 October, 2017), *Sydney water Corporation*, p.5.

²⁴ Moody's Investor Services (19 January, 2015), *Australian Gas Networks Limited*.

²⁵ Moody's Investor Services (11 August, 2018), *Aurizon Network Pty Ltd*, p.7.



B. Standard & Poor's rating methodology

In this appendix we summarise the methodology that is employed by Standard & Poor's (S&P) to determine a credit rating.

B.1 Steps applied in a credit rating assessment

S&P's standard method comprises a number of steps, which are as follows.

B.1.1 Anchor credit rating (Step 1)

First, an "anchor credit rating" is calculated, which is the product of an assessment of the firm's "business risk profile" and its "financial risk profile". A matrix is applied that displays the anchor credit rating that results for a given combination of **business risk profile** and **financial risk profile**, was follows:

Table B-1: Anchor credit rating matrix

				Financial risk profile								
			1	2	3	4	5	6				
			Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged				
	1	Excellent	AAA/AA+	AA	A+ / A	A-	BBB	BBB-/BB+				
Business risk profile	2	Strong	AA / AA-	A+ / A	A-/BBB+	BBB	BB+	BB				
	3	Satisfactory	A/A-	BBB+	BBB / BBB-	BBB-/BB+	BB	B+				

Source: S&P (19 November, 2013), p. 35.

Business risk profile

The "business risk profile" is expressed as a score from 1 to 6, ranging from "excellent" to "vulnerable". This assessment is based on an assessment of **country risk** (score of 1 to 6, although this is irrelevant for low levels of country risk) and the risk of the **industry** in which the firm operates (score of 1 to 6), as well as an assessment of the **competitive position of the firm** in question.

Our observation is that, for regulated utilities that undertake minimal non-regulated activities, the "business risk profile" is typically consistent (i.e., the same) across entities within the same sector. As an example, all of the regulated energy networks that are rated by S&P have an "excellent" business risk profile.

Financial risk profile

The "financial risk profile" is also determined on the basis of a score of 1 to 6, ranging from "minimal" to "highly leveraged". The financial risk profile is established from a consideration of financial indicators, which are discussed below.

The assessment of the financial risk profile is dependent in part on the risk of the industry within which the firm operates, with tougher thresholds applying for firms operating in a more risky industry. Standard and Poor's has three sets of financial ratios, which are as follows:



Table B-2:	Cash Flow / L	everage An	alysis Ratios	s - "Standar	d volatility"	industries	
	Core	ratios	Supplementary	coverage ratios	Sup	plementary payback ra	atios
	FFO / debt	Debt / EBITDA	FFO / cash interest	EBITDA / interest	CFO / debt	FOCF / debt	DC

	FFO /	debt	Debt / E		FFO / cash	interest	EBITDA /	interest	CFO /	debt	FOCF	debt	DCF /	debt
	From	" To	From	^, To	From	То	From	То	From	To	From	, To	From	" To
[1] Minimal	60	+	<	1.5	> 1	3	> 1	15	> ;	50	40	+	25	+
[2] Modest	45	60	2	1.5	9	13	10	15	35	50	25	40	15	25
[3] Intermediate	30	45	3	2	6	9	6	10	25	35	15	25	10	15
[4] Significant	20	30	4	3	4	6	3	6	15	25	10	15	5	10
[5] Aggressive	12	20	5	4	2	4	2	3	10	15	5	10	2	5
[6] Highly leveraged	< 1	2	>	5	<2)	<	2	< 1	10	<	5	<	2

Table B-3: Cash Flow / Leverage Analysis Ratios - "Medial volatility" industries

		Core	ratios		Supp	lementary	coverage	ratios	Supplementary payback ratios					
	FFO /	debt	Debt / E	BITDA	FFO / cas	h interest	EBITDA	/ interest	CFO	/ debt	FOCF	/ debt	DCF	/ debt
	(%)	()	K)	(x	()	(x)	(0	6)	(%	6)	(%	6)
	From	То	From	То	From	То	From	То	From	То	From	То	From	То
0	50	+	< 1	.75	10.	5+	14	4+	4()+	30)+	18	3+
[1] Minimal	35	50	1.75	2.5	7.5	10.5	9	14	27.5	40	17.5	30	11	18
[2] Modest	23	35	2.5	3.5	5	7.5	5	9	18.5	27.5	9.5	17.5	6.5	11
[3] Intermediate	13	23	3.5	4.5	3	5	2.75	5	10.5	18.5	5	9.5	2.5	6.5
[4] Significant	9	13	4.5	5.5	1.75	3	1.75	2.75	7	10.5	0	5	-11	2.5
[5] Aggressive	<	9	> {	5.5	< 1.	.75	< 1	.75	<	7	<	0	<	-11

Table B-4: Cash Flow / Leverage Analysis Ratios - "Low volatility" industries.

		Core	ratios		Suppl	ementary	coverage	ratios	Supplementary payback ratios					
	FFO/debt Debt/EBI		BITDA	FFO/ cash	n interest	EBITDA	/interest	CFO	debt	FOCF	/debt	DCF	/ debt	
	(%)	(X)	(X))	(x)	(%	6)	(%	6)	(%	6)
	From	То	From	То	From	Το	From	То	From	То	From	То	From	То
[1] Minimal	35	+	<	2	> {	В	>	13	> ;	30	20)+	11	1+
[2] Modest	23	35	3	2	5	8	7	13	20	30	10	20	7	11
[3] Intermediate	13	23	4	3	3	5	4	7	12	20	4	10	3	7
[4] Significant	9	13	5	4	2	3	2.5	4	8	12	0	4	0	3
[5] Aggressive	6	9	6	5	1.5	2	1.5	2.5	5	8	-10	0	-20	0
[6] Highly leveraged	<	6	>	6	< 1.	.5	<	1.5	<	5	< -	10	<.	-20

Source: S&P (19 November, 2013), p. 35.

As noted above, the ratios that are applied when assessing the credit rating for a particular firm reflect the risk characteristics of the industry, and are identified in credit rating assessments. As noted in the case studies below, the "low volatility" table has been applied to regulated energy networks and transport infrastructure that is regulated on a building block basis (Aurizon Networks), and from our research the low volatility table has also been applied to regulated water businesses.

B.1.2 Stand Alone Credit Profile (Step 2)

Standard & Poor's then considers a range of factors that may affect the rating from the "anchor", which include such factors as diversification, quality of capital structure, financial policy, liquidity, management and governance. These factors may cause the rating to be raised, or lowered, or left unchanged. An overall check is then applied (with the opportunity for an overall judgement to be exercised), which may result in a rating being increased or decreased. The product of this assessment is the "stand-alone credit rating".



B.1.3 Issuer Credit Rating (Step 3)

Finally, where the firm exists as part of a wider group, then the effects of being part of the group are considered. This may cause the rating to be raised (for example, for firms with a government owner), or reduced (for example, if the parent has a lower rating than the issuer's stand-alone rating).

B.1.4 Comment – the anchor credit rating appropriate for benchmark regulation

In a benchmark regulation context, with the exception noted below, we consider there are no reasons to expect the second and third steps would necessarily change the credit rating, because such factors as diversification, quality of capital structure, financial policy, liquidity, management and governance are assumed constant in the benchmark. Relevantly, these factors do not typically result in a change to a rating (and any change may be up or down) – it is reasonable to a firm that is prudent and efficient firm would be unaffected by these steps. Furthermore, the benchmark business can be assumed to be stand-alone (i.e. not affected by having a parent or government owner).

Just to recap how the S&P method may be applied in the benchmark context:

- the business risk profile of a benchmark firm can be determined by comparison with the business risk profile that is assigned to rated entities, on the assumption that the benchmark entity will have the same business risk profile as other firms in the industry (for regulated water businesses, this is likely to be an "excellent" business risk profile, as with the regulated energy networks)
- the relevant matrix of financial target thresholds can be ascertained from credit rating reports, and as this choice depends on the industry risk, this will not vary across entities (the "low volatility" is likely to be applied to regulated water businesses, as with the regulated energy networks)
- the product of the two will determine an anchor credit rating and, with one exception, this can be assumed to be the expected credit rating.

As an example of the process that one would follow:

- a regulated water business can be assumed to have an excellent business risk profile
- for a BBB credit rating, it would be able to have an aggressive financial risk profile, and
- the lower limit for the FFO/debt financial indicator for an aggressive financial risk profile from the low volatility tables is 6%, which can be applied in the regulatory benchmark calculations.

The one exception noted in the text above reflects the fact that, for firms that have an "excellent" business risk profile, there is a gap in the anchor credit ratings when a firm moves from an "aggressive" financial risk profile to a "significant" financial risk profile (i.e., the anchor moves from BBB to A-). The practice of S&P in relation to Australian Gas Networks (see below) suggests that a firm whose ratios are at the lower end of the "significant" range will have their anchor rating reduced by one notch (i.e., to BBB+) so that a continuous spectrum of ratings will apply in practice.



B.2 Case studies of application of the S&P methodology

B.2.1 Jemena

Jemena owns and operates a portfolio of regulated monopoly and contracted energy distribution and transmission assets on the eastern seaboard of Australia. It is rated A- by Standard & Poor's, which has assessed it to have:²⁶

- An "excellent" (score 1) business risk profile, "based on the company's position as the owner of a portfolio of regulated monopoly network businesses."
- Its financial risk profile was assessed against Standard & Poor's "low volatility" cash-flow financial metrics, and found to be "significant" (score 4).
- It was assessed to have an anchor credit rating of A- (as per Table B-5 below).

Table B-5: Jemena anchor credit rating assessment

		Financial risk profile									
		1	2	3	4	5	6				
		Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged				
	1 Excellent	AAA / AA+	AA	A+ / A	A-	BBB	BBB- / BB+				
Business risk profile	2 Strong	AA / AA-	A+ / A	A- / BBB+	BBB	BB+	BB				
	3 Satisfactory	A / A-	BBB+	BBB / BBB-	BBB-/BB+	BB	B+				

- Standard & Poor's applied a one negative notch credit modifier based on a forecast of declining metrics from debt funding of capex, hence a stand-alone credit rating of BBB+.
- However, a positive notch was applied due to its majority owner being State Grid International Development of China (A+), resulting in a final credit rating of A-.

Standard & Poor's notes that to maintain its A- credit rating, Jemena needs to maintain "its FFO-to-debt ratio of more than 9.5%, FFO interest coverage of at least 2.5x, and total leverage of less than 65%." ²⁷

B.2.2 Australian Gas Networks (AGN)

AGN is headquartered in Adelaide and owns and operates gas networks in South Australia, Queensland and New South Wales. As shown in Appendix A, AGN was rated Baa1 / BBB+ by Moody's in 2015 through a one notch uplift relative to its assessed scorecard rating. At the same time, Standard & Poor's applied an equivalent BBB+ / Baa1 credit rating.²⁸

• An "excellent" (score 1) business risk profile, based on a stable transparent regulatory regime and stable cash flows.

²⁶ S&P, (5 October, 2016), SGSP (Australia) Assets Pty Ltd.

²⁷ S&P, (5 October, 2016), SGSP (Australia) Assets Pty Ltd., p.7.

²⁸ S&P (29 April, 2015), Standard & Poor's Rating Services Presentation to Australian Gas Networks Ltd.



- Its financial risk profile was assessed against Standard & Poor's "low volatility" cash-flow financial metrics, and found to be "significant" (score 4).
- It was assessed to have an anchor credit rating of A- (as per Table B-6 below).

The A- anchor rating was lowered by one notch to BBB+ because the "comparative rating analysis" was considered "negative". As discussed above, AGN's metrics were at the lower end of the "significant" range, and the one-notch reduction was applied to give effect to a continuous spectrum of credit ratings.

Table B-6: Australian Gas Networks anchor credit rating assessment

		Financial risk profile									
		1 2 3 4				5	6				
		Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged				
	1 Excellent	AAA / AA+	AA	A+ / A	A-	BBB	BBB-/BB+				
Business risk profile	2 Strong	AA / AA-	A+ / A	A- / BBB+	BBB	BB+	BB				
	3 Satisfactory	A / A-	BBB+	BBB / BBB-	BBB-/BB+	BB	B+				

B.2.3 Aurizon Network

Aurizon Network owns and operates a regulated 2,670 kilometre below-rail network in Australia's Central Queensland Coal Network. It is rated BBB+ by Standard & Poor's, which has assessed it to have:²⁹

- A "strong" (score 2) business risk position, "monopolistic position and supportive regulatory framework ... solid market position and low business risk."
- Like Jemena, Aurizon Network has its financial risk profile assessed against Standard & Poor's "low volatility" cash-flow financial metrics, and found to be "intermediate" (score 3).
- It was assessed to have an anchor credit rating of BBB+ (as per Table B-7 below).

Table B-7: Aurizon Network anchor credit rating assessment

		1	1 2 3 4 5							
		Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged			
Business risk profile	1 Excellent	AAA / AA+	AA	A+ / A	A-	BBB	BBB-/BB+			
	2 Strong	AA / AA-	A+ / A	A- / BBB+	BBB	BB+	BB			
	3 Satisfactory	A / A-	BBB+	BBB / BBB-	BBB-/BB+	BB	B+			

Note that the anchor credit rating could have been A- or BBB+. In cases where there are multiple possible ratings, the choice depends on the financial risk profile – if this is 4 or stronger, the anchor is based on the comparative strength of the business risk profile within its class, and if the financial risk profile is 5 or weaker, the anchor is based on the comparative strength of its financial risk profile within its class. In the case of Aurizon, the financial risk profile (score of 3) the choice depended on where Aurizon's business risk profile sat within

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S&P, (5 October, 2016), SGSP (Australia) Assets Pty Ltd.



the class of "strong", and this was assessed to be ayt the lower half of that range, hence the BBB+ rating was applied.

• Aurizon Network is a stand-alone business, with ring fencing from Aurizon Ltd's other rail operations, which do not provide credit support. Therefore, a final credit rating of BBB+ was applied.

Standard & Poor's expects "the company to operate with an FFO-to-total debt ratio of about 13%-14% over the next three years, slightly higher than the current rating downgrade trigger of 13%.³⁰

B.2.4 Chorus Network

Chorus Network owns and operates a network of copper and fibre telecommunications infrastructure throughout New Zealand. In its last credit rating assessment,³¹ Standard and Poor's made the following conclusions about Chorus Ltd:

- A "strong" (score 2) business risk profile.
- Its financial risk profile is assessed against Standard & Poor's "standard volatility" cash-flow financial metrics because it operates on an industry with intermediate risk, and was found to be "significant" (score 4).
- It has been assessed to have an anchor credit rating of BBB (as per Table B-8 below).

Table B-8: Chorus anchor credit rating assessment

		Financial risk profile							
		1	2	3	4	5	6		
		Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged		
Business risk profile	1 Excellent	AAA / AA+	AA	A+ / A	A-	BBB	BBB-/BB+		
	2 Strong	AA / AA-	A+ / A	A- / BBB+	BBB	BB+	BB		
	3 Satisfactory	A / A-	BBB+	BBB / BBB-	BBB-/BB+	BB	B+		

• None of the modifiers led to a change to the credit rating, and there were no relevant group effects, and so a BBB credit rating was provided.

³⁰ S&P, (5 October, 2016), SGSP (Australia) Assets Pty Ltd., p.7.

³¹ S&P, (30 May, 2017), Chorus Ltd.



C. Characteristics of Australian-issued CPI indexed bonds

Using the Bloomberg service, we undertook a search for extant AUD denominated CPI-linked bonds, which resulted in a total of 50 bonds (Using search "Underlying Reference Index" "AUCPI Index"). We arranged these bonds by industry, size and term at issuance, which provided a picture of this market and how it relates to Australian regulatory corporate benchmarks. This indicated the non-standard benchmark characteristics of this debt market:

- The average issue size was \$116 million, which is materially below the benchmark bond issue size in the Australian markets (\$250 million)
- The average term at issuance was 25 years, which is materially longer than the benchmark term of issuance (10 years)
- Only four of these bonds were issued by firms in the Utilities sector, and only one of these issues (by Australian Gas Networks / Envestra in 2006) is a regulated utility (the two other issuers being BOOT and energy generation projects).
- The vast majority of the CPI issues were made during the low market volatility period of 2000 to 2008 (i.e. prior to the Global Financial Crisis), with only one issue, by The University of Wollongong, since that time.

From Table C.1 it is apparent that the CPI-linked bonds market was active in the pre-Global Financial Crisis period but has completely dried up since 2008.

	Number of issues	Pre-2000	2000 to 2008	Post 2008	Ave. term at issue	Ave. issue size
Aerospace & Defense	1		1		14.0	52.0
Banks	2		2		13.3	25.4
Consumer Finance	3		3		21.8	25.4
Educational Services	5		4	1	26.9	58.3
Financial Services	21	1	20		26.4	72.0
Health Care Facilities & Services	3	1	2		27.4	105.7
Industrial Other	2		2		29.0	140.0
Railroad	2		2		29.1	150.0
Real Estate	2		2		27.3	46.3
Supranationals	1		1		13.9	50.0
Transportation & Logistics	4	2	2		26.5	238.8
Utilities	4	1	3		21.8	155.5
Average					25.2	116.3
Total	50	5	44	1		5,814.4

Table C.1: Current CPI-linked bonds issued in AUD

Source: Bloomberg and Incenta analysis



D. Moody's practice for the UK utilities

IPART's real interest cover metric draws upon the adjusted interest cover measure that Moody's applies to the regulated water and electricity businesses in the UK.

The adjusted interest cover measure that Moody's applies in those sectors is as follows.

- For the water businesses, the indexation component of any inflation-linked debt is removed from the measure of interest, which flows through into the top and bottom lines of the interest cover calculation. For the electricity sector, a broader concept is applied whereby any non-cash element that is included in interest expense that reflects escalation of the debt principal is excluded from funds from operations and interest.
- In addition, other adjustments are made for both sectors:
 - In water, capital maintenance (proxied by the regulatory allowance) is treated as an expense and so deducted from funds from operations, and
 - In the electricity sector, the allowance for capital maintenance is also removed from FFO. In addition, adjustments are made for the three "regulatory levers" that may distort the cash flow for a particular UK electricity distributor relative to the other UK electricity distributors, namely the rate of depreciation applied, the split between fast money and slow money (the totex equivalent of operating and capital expenditure) and the effect of any profiling of revenue within a regulatory period).

From our reading, the principal driver for Moody's application of the adjusted interest cover measures were to improve comparability across the relevant sector and with other relevant peers, for example, as follows:³²

For regulated networks that utilize unconventional debt funding, such as zero-coupon, capital accretion, index-linked bonds or swap arrangements, we seek to make the appropriate adjustments to the ratio calculations to improve consistency and comparability to the peer portfolio.

When calculating its adjusted measure, Moody's only adjusts the FFO for any accretion in debt that is reflected in the actual debt instruments of the businesses (i.e., any additional cash flow that is available through increasing fixed rate borrowings to match the growth in CPI is ignored). Moody's notes the potential for a firm to achieve a similar outcome to having inflation-indexed by raising additional debt to match the inflation escalation component as we discussed above.³³ Given this, it observed that having the debt accretion arrangements pre-arranged (i.e., through having indexed debt

³² Moody's Investors Service, (16 March 2017) *Rating Methodology – Regulated electric and gas networks*, p.29, n.8. Moody's was similarly explicit that its reason for including the capital charges adjustment for the water businesses was to derive a financial indicator that is sensitive to what it considered to be a material variation in capital maintenance requirements across the UK water sector: Moody's Investors Service, (March 2006) *Special comment – UK Water Sector: Key Ratios Used by Moody's in Assessing Companies' Credit Strength*, , p.6.

³³ Moody's Investors Service, (March 2006), p.9.



arrangements in place) would be particularly relevant to highly-geared firms for whom it may be difficult to raise new debt to match the inflation indexation component:³⁴

... index-linked debt has the advantage of lower cash interest payments in the current period for a given level of leverage, which can be an important consideration for companies that are highly leveraged and would otherwise be highly dependent on their ability to continually re-borrow a percentage of the growth in the RAV to cover current interest payments.

For this reason, Moody's suggested that the adjusted interest cover would be less relevant to companies that are not highly geared:³⁵

Clearly, for companies that are not highly leveraged and show adequate levels of Adjusted ICR even with conventional fixed-rate debt, the benefit of index-linked debt is tantamount to that of liquidity. Accordingly, when assessing the financial profiles of water companies, Moody's regards the Net Debt to RAV ratio as the primary indicator, placing less weight on interest cover ratios for companies that maintain an overall good degree of financial flexibility, including strong liquidity.

The target that Moody's applies for the adjusted interest cover measure is materially *lower* than the target for the standard FFO interest cover measure, although this would reflect the net effect of all of the adjustments described above.

Ofwat applies a test of financeability when setting price controls, and in this process has applied the Moody's adjusted interest cover measure as one of its critical ratios. In this assessment, Ofwat typically models the outcomes for a benchmark efficient business, and in this practice has assumed that such a business would have 33 per cent of their debt in inflation-linked terms (meaning that FFO and interest would be adjusted by 33 per cent of the maximum possible inflation-accretion).³⁶

³⁴ Moody's Investors Service, (March 2006), p.8.

³⁵ Moody's Investors Service, (March 2006), p.8.

³⁶ See Ofwat, (July, 2015), *Towards Water 2020 – policy issues: regulating monopolies*, p.20, where it states that: "Water companies have a significant amount of long dated RPI-linked debt and our view of a notional company in PR14 assumed that 33% of debt was RPI linked."