



# **Assessing the Financeability of Regulated Water Service Providers**

A report for the Essential Services  
Commission

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## Glossary

CA	Capital adjusted.
The Commission	The Essential Services Commission.
EBITDA	Earnings before interest, tax, depreciation and amortisation.
FFO	Funds from operations - Pre-tax profit plus depreciation minus tax paid minus change in working capital.
IPART	Independent Pricing and Regulatory Tribunal.
Moody's	Moody's Investor Services.
NPV	Net present value.
Ofgem	Office of Gas and Electricity Markets.
Ofwat	Water Services Regulation Authority.
PMICR	Post Maintenance Interest Cover Ratio. Measured as the amount of cash a company generates from the revenues it brings in, excluding capital expenditure, relative to the interest paid on the company's debt. Similar to Moody's measure of Adjusted Interest Cover Ratio.
RAB	Regulatory Asset Base.
RCF	Retained cashflow.
Return in revenue allowed	Net cash flow from operating activities (that is net of capital charges) before tax and adjusted for the movement in working capital.
RoRE	Return on retained earnings.
SWC	Sydney Water Corporation.
WACC	Weighted average cost of capital.
WCIR	Water Charge (Infrastructure) Rules.
WIRO	Water Industry Regulatory Order.

## Executive Summary

This report has been prepared by NERA Economic Consulting (NERA) at the request of the Essential Services Commission (the Commission). Its purpose is to inform the Commission as to the appropriate financial metrics, and relevant bounds, to be used for the purpose of assessing the financeability of Victorian water service providers.

An effective financeability assessment will allow the Commission to determine whether expected revenues in the next regulatory period will be sufficient for an efficient water service provider to finance its operations and undertake its forecast capital program.

## Methodology

In order to understand the role of a financeability assessment in the context of Victorian water service providers we reviewed the relevant legislation, being the Water Industry Regulatory Order (WIRO) and the Water Charge (Infrastructure) Rules (WCIR)<sup>1</sup> and the Commission's regulatory framework and pricing model.

For the purpose of selecting financial metrics that can be used to measure a service provider's financeability we conducted a review of the financial metrics currently used by the Commission, domestic and international regulatory authorities and a leading global credit ratings agency.

This review identified six broad categories of financial metrics commonly used to quantify the financeability of regulated water service providers. We analysed the financial metrics to determine how and why their specifications differ across agencies, what they indicate with respect to financeability and any adjustments which may improve the applicability of the financial metrics to Victorian water service providers.

In addition to quantitative measures, we also considered qualitative measures which may be used to assess financeability. To this end, we reviewed Moody's qualitative analysis of the 'regulatory environment and asset ownership model', to which Moody's assigns a 40 per cent weighting as part of its methodology for rating privately financed regulated water utilities. We then estimated a qualitative rating for Victorian water service providers with reference to Moody's qualitative rating of Sydney Water Corporation (SWC), the only Australian water service provider for which Moody's has provided a credit opinion.

## Analysis

In our opinion, metrics that assess a service provider's ability to obtain debt are more critical in assessing financeability relative to those that assess their ability to raise equity. Further, the assessment of debt financeability can be undertaken against a clear standard that the regulated entity should achieve and maintain an 'investment grade' credit rating over time. Therefore, in our opinion, maintaining an 'investment grade' credit rating is an appropriate objective for

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<sup>1</sup> It is relevant to note that the WCIR rules only relate to water infrastructure fees and charges to customers in the Murray Darling Basin.

a financeability assessment of a regulated water service provider and the most applicable financial metrics with which to assess financeability are:

- FFO and capital adjusted interest cover;
- net debt to RAB;
- FFO to net debt; and
- internal financing.

We also recommend that, where appropriate,<sup>2</sup> the Commission applies a dividend cover metric as a secondary quantitative measure.

A robust financeability assessment should have regard to both quantitative and qualitative factors. Therefore, with respect to the financial metrics, the ranges which must be achieved to maintain an investment grade credit rating must be informed by Victorian water service providers' qualitative results.

Our qualitative analysis indicated that Victorian water service providers would likely achieve an average rating across Moody's 'regulatory environment and asset ownership model' category of A. The strength of this qualitative rating for a Victorian water service provider has direct implications on the financial metrics necessary for Victorian water service providers to achieve an 'investment grade' credit rating. Therefore, we deduced that a Victorian regulated water service provider would achieve an 'investment grade' credit rating with quantitative metrics consistent with a Ba rating.

## Recommendations

We propose that, with reference to the estimated qualitative credit rating of Victorian water service providers, the range applicable to quantitative financeability assessments is that consistent with a Ba credit rating or higher. We set out this range in Table 1 below.

**Table1**  
**Acceptable range for financial metrics**

	<b>Aaa</b>	<b>Aa</b>	<b>A</b>	<b>Baa</b>	<b>Ba</b>	<b>B</b>
<b>Primary metrics</b>						
FFO Interest Cover	>10	7.0-10.0	4.5-7.0	2.5-4.5	1.8-2.5	1.5-1.8
Capital adjusted interest cover	>8.0	4.5-8.0	2.5-4.5	1.5-2.5	1.2-1.5	1.0-1.2
Net debt to RAB	<25%	25-40%	40-55%	55-70%	70-85%	85-100%
FFO to net debt	>40%	25-40%	15-25%	10-15%	6-10%	4-6%
Internal financing	>3.5	3.5-2.5	1.5-2.5	1.0-1.5	0.5-1.0	0.25-0.5
<b>Secondary metrics</b>						
Dividend cover	>1	>1	>1	>1	>1	>1

<sup>2</sup> We understand that the majority of Victorian water service providers do not pay dividends.

If a financeability constraint is identified, in our opinion, a cash flow adjustment should only be made if the financeability constraint is not a result of poor management practices, such as excessive gearing or poor financial decisions. Further, any cashflow adjustment should be made in a net present value (NPV) neutral manner and the appropriate adjustment method should be determined by the Commission on a case-by-case basis.

## 1. Introduction

This report has been prepared by NERA Economic Consulting (NERA) at the request of the Essential Services Commission (the Commission). Its purpose is to inform the Commission as to the appropriate financial metrics, and relevant bounds, to be used for the purpose of assessing the financeability of Victorian water service providers.

A reliable and robust financeability assessment will assist the Commission in determining whether, in the next regulatory period, expected revenues will be sufficient for water service providers to finance their regulated activities and, to the extent any financeability constraint is identified, whether it should be addressed by an adjustment to the water service provider's expected revenue and so net cashflows.

The remainder of this report is structured as follows:

- section 2 summarises the regulatory framework within which Victorian water service providers operate, the process in which prices are set and the role of a financeability assessment;
- section 3 describes the methodologies and financial metrics used by Australian and international regulatory bodies to assess the financeability of regulated service providers as well as that used by Moody's Investor Services (Moody's), a leading global credit ratings agency;
- section 4 elaborates on the financial metrics identified in section 3 and evaluates their comparative strengths and weaknesses as relevant to the assessment of financeability for Victorian water service providers;
- section 5 addresses the question of whether actual or notional financial data should be used in financeability assessments and discusses possible adjustments to the financial statements which may improve the reliability of the financeability assessment;
- section 6 summarises the qualitative factors assessed by Moody's, as relevant to the financeability of Victorian water service providers, and estimates the qualitative rating of Victorian water service providers with reference to Moody's qualitative rating of Sydney Water Corporation (SWC); and
- section 7 sets out our recommendations as to the financial metrics that are most appropriate for assessing the financeability of Victorian water service providers and discusses the acceptable ranges by reference to the qualitative analysis in section 6.

## 2. Context

This section discusses the role of financeability assessments in the broader regulatory framework for Victorian water service providers. The water industry is designated as an essential service in the state of Victoria and is regulated by the Essential Service Commission (the Commission).<sup>3</sup>

In undertaking its functions, the Commission is required to promote the long term interests of Victorian consumers with regard to the price, quality and reliability of essential services.<sup>4</sup> The Commission seeks to promote the long term interests of consumers in the water industry primarily by determining prices or revenue in accordance with principles set out in the Water Industry Regulatory Order (WIRO) and the Water Charge (Infrastructure) Rules (WCIR).<sup>5</sup>

The pricing principles prescribed in the WIRO require prices to be set such that they:<sup>6</sup>

- provide a sustainable revenue stream for a regulated entity that does not reflect monopoly rents;
- allow a regulated entity to recover its operational and capital expenditure and derive a reasonable return on investments;
- provide a regulated entity with incentives to pursue efficiency improvements and promote sustainable use of Victoria's water resources;
- provide an adjustment mechanism to minimise the extent of any under or over recovery of revenue for the costs associated with the desalination plant; and
- take into account the interests of customers.

The Commission uses a building block pricing model to determine the prices charged by Victorian water service providers. The building block model, as applied by the Commission, calculates a price (or revenue) path that is designed so as to provide the water service provider with a reasonable opportunity to recover its forecast costs, including deriving an appropriate return over a three to five year regulatory period. The building block approach applied by the Commission involves:

- a regulated asset base (RAB) that, at the time of price reviews, is updated for actual annual data to reflect:
  - additional capital expenditure net of contributions and asset disposals;
  - inflation adjustments; and
  - regulatory depreciation.

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<sup>3</sup> See *Essential Services Commission Act 2001*, section 3 (Definitions) "essential service".

<sup>4</sup> *Essential Services Commission Act 2001*, section 8.

<sup>5</sup> It is relevant to note that the WCIR rules only relate to water infrastructure fees and charges to customers in the Murray Darling Basin.

<sup>6</sup> WIRO, item 14(1)(a).

- an annual revenue requirement calculated as the sum of:
  - a real,<sup>7</sup> rather than nominal, benchmark rate of return on the RAB, which is calculated as the prevailing real costs of debt and equity at the start of the regulatory period;
  - return of the RAB, ie, regulatory depreciation;
  - forecast operating expenditure;
  - compensation for expected tax costs; and
  - other adjustments (including incentive carryover adjustments).
- a price (or revenue) path provides the water service provider with a reasonable opportunity to recover the costs established by reference to the elements above, over the regulatory control period.

The building block approach adopted by the Commission supports an efficient firm's long term financial viability by providing a water service provider with a reasonable opportunity to recover its costs, including an appropriate return on capital. Notwithstanding its consistency with long term financial viability, some aspects of the approach and associated assumptions adopted by the Commission may not be consistent with short term financeability. However, it is relevant to note that this may not present a significant problem as we understand that financeability is not a major concern for the majority of Victorian water service providers, as we discuss in 2.2.2.

In the following section, we identify a number of features and/or assumptions in the Commission's regulatory framework that may not be consistent with short term financeability in an efficient water service provider.

## **2.1. Potential causes of short term financeability issues**

The building block applied by the Commission does not guarantee the short term financeability of a regulated business. Short term financeability constraints may arise due to:

- the deferment of revenue;
- the use of benchmark costs rather than actual costs; and
- the existence of incentive arrangements, which may have a negative effect on a regulated business' cashflow.

Individually, or collectively, these reasons may hinder the short term financeability of a regulated water service provider.

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<sup>7</sup> We use the term 'real' to refer to a rate of return that excludes any allowance for price inflation.

### 2.1.1. Deferment of revenue

The building block pricing model applied to regulated water service providers indexes the RAB for changes in consumer prices. This approach is a common feature of Australian regulatory frameworks and ensures that the inflation adjusted real value of a regulated asset is maintained through time. It therefore protects the financial value of a regulated service provider's assets from inflation risks.

One consequence of indexing the RAB is that building block revenues provide for only a real return on assets. However, a business is generally required to pay a nominal return on debt. So, although the building block approach ensures that an appropriate return on debt and equity is provided in the long run, in the short run, the cash returns to equity may be below the target return to equity, which may give rise to short term financeability constraints.

### 2.1.2. The assumption of benchmark costs

The second feature of the Commission's regulatory methodology that may cause financeability issues is the use of benchmark costs, particularly in relation to the cost of debt.

The regulatory WACC is set on the basis of an estimate of the cost of debt prevailing prior to the start of the regulatory control period. However, few businesses are able to refinance all their debt obligations at such a precise point in time. It is also questionable whether it would be prudent for a business to refinance all its debt over a short period of time, given that this would expose the business to substantial refinancing risk.<sup>8</sup>

In practice, most regulated businesses raise debt periodically and so their actual debt costs reflect a historic trailing average debt yield, rather than the prevailing costs of debt at the time regulated prices are determined. It follows that when the debt yields prevailing prior to a regulatory determination are substantially lower than the trailing average debt yield, a regulatory determination may also result in financeability constraints.<sup>9</sup>

### 2.1.3. Incentive mechanisms

The inclusion of incentive mechanisms that reward (or penalise) a regulated water service provider for outperforming (underperforming) a specified efficiency benchmark may also affect its financeability. For example, the operating expenditure incentive mechanism allows a business that efficiently lowers its operating costs below forecast to retain the benefit of that cost saving for a period of six years. Alternatively where costs rise above forecast, the service provider bears that cost for six years.

To give effect to these incentive mechanisms necessitates that, in some circumstance, the revenue allowance of a regulated service provider over a regulated period may be less than its forecast costs. Again, this can give rise to short term financeability issues.

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<sup>8</sup> Refinancing risk is the risk that a business is unable to repay all its debt obligations as they come due. A business that refinances all its debt in a short period of time increases the risk that it will not be able to raise sufficient debt in that period to continue to finance its activities.

<sup>9</sup> We note that, in the long run, gains and losses in the trailing average versus the spot rate should balance out.

## 2.2. Role of financeability assessments

The role of any assessment of financeability is not to duplicate the assessment of a water service provider's efficient costs or, specifically, the determination of the regulated WACC. Rather, the role of a regulator's financeability assessment is:

- to determine whether, over the regulatory control period, expected revenues are sufficient for the water service provider to finance its regulated activities; and
- to the extent a financeability constraint is identified, to determine whether this is best addressed by an adjustment to the water service provider's cashflows.

In the remainder of this section, we describe the relevancy of debt and equity financing and the principle of competitive neutrality and address the appropriateness of a cash flow adjustment where a financeability constraint is identified.

### 2.2.1. Competitive neutrality

In our opinion, any financeability assessment should be consistent with the principle of competitive neutrality, as set out in section 16(d) of the *Government Owned Corporations Act 1993*. The principle of competitive neutrality promotes efficiency by ensuring that markets are not unnecessarily distorted by the public ownership of corporations. In practice, enforcing the principle of competitive neutrality involves removing any advantages or disadvantages for publicly owned corporations attributable to the fact that they are publicly owned.

In the context of financeability, a publicly owned company may be able to more easily raise finance, relative to a privately owned company, because governments are more likely to provide support if a publicly owned company is under financial stress. For example, Moody's assessment of the credit rating of SWC included a four-notch credit rating uplift to account for the high likelihood of support from the NSW State government, in accordance with Moody's Joint-Default Analysis approach for government-related issuers.

In our opinion, any financeability assessment should be consistent with the principle of competitive neutrality and, consequently, our analysis does not make any adjustment for the Victorian government's ownership of the regulated Victorian water sector.

### 2.2.2. Relevance of debt and equity

Since regulated water service providers are financed through a mixture of debt and equity, as a matter of principle, financeability assessments should have both a debt and equity dimension. Notwithstanding, in practice, regulators have primarily focused on debt related financeability assessments. The reasons appear to be that:

- all debt must be sourced from external markets;
- debt has a fixed term and, as a result, it must be periodically refinanced; and
- debt is provided on the basis of a loan contract that commonly contains a loan covenant on the borrower, such as the maintenance of a specified credit rating – if the loan covenant is breached, it may result in a default on the loan being declared, which may in

turn cause all future payments due under the loan contract to be deemed to be due and payable immediately.

### ***Victorian water service providers***

Victorian water service providers generally do not seek funding from the open market and rarely seek equity injections from the government. Further, few Victorian water service providers pay dividends and a dividend allowance is not part of the regulatory environment or legislation applying to Victorian water service providers. For completeness, we note that despite only a small portion of Victorian water service providers paying dividends, they do generate cashflow for the Victorian Government through the payment of ‘environmental contributions’ and the ‘financial accommodation levy’.

The Commission has advised us that only one Victorian water service provider<sup>10</sup> has ever requested a financeability adjustment.

### ***Debt Financeability***

With reference to the aforementioned factors, in our opinion, a primary focus on debt financeability is appropriate for Victorian water service providers. Further, the assessment of debt financeability can be undertaken against a clear standard that the regulated entity should achieve and maintain an ‘investment grade’ credit rating over time.

An investment grade credit rating is defined as follows:<sup>11</sup>

The term “investment grade” historically referred to bonds and other debt securities that bank regulators and market participants viewed as suitable investments for financial institution. Now the term is broadly used to describe issuers and issues with relatively high levels of creditworthiness and credit quality. In contrast, the term “noninvestment grade,” or “speculative grade,” generally refers to debt securities where the issuer currently has the ability to repay but faces significant uncertainties, such as adverse business or financial circumstances that could affect credit risk.

Ratings agencies define an ‘investment grade’ credit rating equal to at least:

- Baa3 by Moody’s;
- BBB- by Standard and Poor’s; and
- BBB(low) by Fitch Ratings.

In our opinion, maintaining an ‘investment grade’ credit rating is an appropriate objective for a financeability assessment of a regulated water service provider.

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<sup>10</sup> Coliban Water.

<sup>11</sup> Standard and Poor’s, *Guide to Credit Rating Essentials*, 2011, page 11.

### ***Equity Financeability***

The characteristics of equity finance are substantially different from debt, because:

- equity finance is for an indefinite period and does not need to be ‘refinanced’;
- there are no specified minimum returns attached to equity finance; and
- equity finance can be internally sourced through retained earnings.

Victorian water service providers are financed through a mixture of debt and equity, however, they rarely seek equity injections and do not obtain funding from the open market. Further, there is no dividend allowance in the regulatory framework and legislation and only a minority of Victorian water service providers pay dividends.

Accordingly, in our opinion, equity financeability constraints are of a secondary order of importance and we have treated them as such in this report.

Nevertheless, equity financeability issues are likely to be a relatively greater importance when a business has to issue new equity. Further, short term equity financeability issues are likely to manifest themselves in the form of constraints on the ability of the regulated firm to pay dividends.<sup>12</sup>

#### **2.2.3. Appropriateness of a cashflow adjustment**

When a financeability constraint is identified, the next step is to determine whether it is best addressed by an adjustment to the water service provider’s cashflows. Some financeability constraints are most appropriately addressed by the managers and/or owners of the water service provider. Two examples where financeability issues are best addressed by the managers and/or owners of the water service provider are:

- where the primary cause of a financeability constraint is due to excessive debt gearing – in this circumstance, responsibility rests with the managers/owners of the service provider to raise the level of equity either through reducing dividend payments or injecting new equity; and
- where the primary cause of a financeability constraint is related to the internal management practices (for example, inefficient or imprudent cost of financing decisions) of the water service provider – again managers/owners of the service provider rather are best placed to address these issues.

Consequently, where a financeability constraint is identified, in our opinion, the appropriateness of a cashflow adjustment should be evaluated on a case-by-case basis with reference to whether the financeability constraint is best addressed by the managers and/or owners of the water service provider.

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<sup>12</sup> It has been argued that dividend policies have signal properties. See Miller, M., and Rock, K., *Dividend Policy and Asymmetric Information*, Journal of Finance v.XL, No.4 September 1985.

### 3. Review of Existing Assessments

Broadly speaking, six alternative financial metrics are used by regulators and credit rating agencies to quantify the financeability of regulated service providers, these are:

- interest coverage;
- debt gearing;
- cash flow to net debt;
- internal financing;
- return on regulated equity; and
- dividend cover.

In this section we describe the approach to assessing financeability adopted by domestic and international regulators, as well as a global credit rating agency. We note that each of these organisations adopts a subset of these metrics and that their exact specification often differs.

#### 3.1. Essential Services Commission of Victoria

The Commission's current financeability assessment is designed to assess whether a service provider is in a position to maintain an investment grade credit rating. It analyses only quantitative factors and computes a set of financial metrics which are compared with a range of critical values. This process is used by the Commission to categorise the financeability of the firm, in accordance with the financial metrics and critical values set out in Table 3.1.

**Table 3.1**  
**The Commission's financial metrics**

Metric	Calculation	Low	Mid	High
<b>Interest coverage</b>	$= \frac{\text{FFO} + \text{net interest}}{\text{net interest}}$	1.5	2.25	3
<b>Debt gearing</b>	$= \frac{\text{Interest bearing liabilities} - \text{Cash}}{\text{RAB}}$	65%	55%	45%
<b>Cash flow to net debt</b>	$= \frac{\text{FFO}}{\text{Net debt}}$	10%	10%	10%
<b>Internal financing</b>	$= \frac{\text{FFO} - \text{Dividends}}{\text{Net capital expenditure}}$	35%	35%	35%
<b>Return on regulated equity</b>	Not assessed			
<b>Dividend cover</b>	Not assessed			

Interestingly, the critical values of the cash flow to net debt and internal financing metrics do not change across the low, medium and high categories. This suggests that these metrics are

not relevant in the determination of whether a service provider is in a position to maintain an investment grade credit rating.

We understand that the Commission has had an implicit focus on interest cover. It is also relevant to note that the Commission calculates financial metrics using the regulated service provider's actual costs for the purposes of assessing financeability issues.

### 3.2. Independent Pricing and Regulatory Tribunal (IPART)

IPART assesses the financeability of a regulated service provider using information on its actual financial position, by adopting the reference point of an investment grade firm.<sup>13</sup>

IPART does not calculate a credit rating for regulated service providers,<sup>14</sup> but rather uses only quantitative financial metrics and other financial information to guide an overall assessment of a service provider's financeability over a regulatory period. To assess whether a regulated service provider would be able to obtain finance, IPART compares a firm's financial ratios against those of a Baa3 graded firm.<sup>15</sup> IPART proposed to use the financial metrics and benchmarks set out in Table 3.2 in its recent draft decision on financeability.

**Table 3.2**  
**IPART's financial metrics**

Metric	Calculation	Baa3 Benchmark
Interest coverage	$= \frac{\text{FFO} + \text{net interest expense}}{\text{net interest expense}}$	>1.4/1.5
Debt gearing	$= \frac{\text{Net debt}}{\text{RAB}}$	<100%
Cash flow to net debt	$= \frac{\text{FFO}}{\text{Net debt}}$	>5 per cent
Internal financing	Monitored but not formally assessed	
Return on regulated equity	Not assessed	
Dividend cover	Not assessed	

<sup>13</sup> IPART, *Financeability Tests in Price Regulation: Draft Decision*, August 2013, page 7.

<sup>14</sup> *Op cit*, page 8.

<sup>15</sup> *Op cit*, page 15.

IPART does not assign a fixed quantitative weight to each ratio. Instead, it recognises interest coverage and debt gearing as being more important than cash flow to net debt.<sup>16</sup> IPART calculates each financial metric by:

- using forecast actual interest cost, comprised of the actual gearing and interest rates;
- using nominal input data rather than real data;<sup>17</sup> and
- adjusting financial statements to reflect the liabilities associated with operating leases and superannuation benefits.<sup>18</sup>

### 3.3. Moody's

Moody's Investors Service (Moody's) is a global credit ratings agency that provides credit ratings and research for debt instruments and securities. Moody's evaluates the financeability of a regulated water service provider with reference to both qualitative and quantitative factors. Moody's key ratings factors and their weightings are set out in Table 3.3.

**Table 3.3**  
**Moody's key rating factors**

Key Rating Factor	Type	Weighting
Regulatory environment and asset ownership model	Qualitative	40%
Operational characteristics and asset risk	Qualitative	10%
Stability of business model and financial structure	Qualitative	10%
Key credit (financial) metrics	Quantitative	40%

We note that two of Moody's key factors are under the control of management, being the:

- operational characteristics and asset risk; and
- stability of business model and financial structure.

Furthermore, Moody's rating methodology incorporates an additional weighting framework to recognise that serious weakness in one area cannot be completely offset by strength in another. To this end, Moody's weights lower ratings more heavily than higher ratings, as illustrated in Table 3.4.

<sup>16</sup> IPART, *Financeability Tests in Price Regulation: Draft Decision*, August 2013, page 13.

<sup>17</sup> *Op cit*, page 25.

<sup>18</sup> *Op cit*, page 16.

**Table 3.4**  
**Moody's asymmetric weightings<sup>19</sup>**

<b>Rating Category</b>	Aaa	Aa	A	Baa	Ba	B	Caa
<b>Weighting</b>	1	1	1	1.15	2	3	5

Moody's financial metrics, the specification of those metrics, their assigned weightings and critical values for a Baa rating or higher are set out in Table 3.5. The exact specification of each metric is somewhat at the discretion of the analyst.

In establishing a service provider's credit metrics, Moody's allows its analysts the flexibility to calculate metrics using historical or projected data. Historic metrics are used where they are thought to be representative of the financial structure pursued, or when forecast improvements are uncertain. Alternatively, in cases where the analyst believes that there is a high probability that a company's metrics will deteriorate, they are estimated using the prospective metrics.<sup>20</sup>

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<sup>19</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 7.

<sup>20</sup> *Op cit*, page 22.

**Table 3.5**  
**Moody's financial metrics**

Metric	Calculation	Baa or higher	Weighting
<b>Interest coverage</b>			
Adjusted interest cover	$= \frac{\text{FFO} + (\text{Net interest expense} - \text{Non cash interest}) - \text{Capital charges}}{(\text{Net interest expense} - \text{Non cash interest})}$	>1.5	15%
OR			
FFO interest cover	$= \frac{\text{FFO} + (\text{Net interest expense} - \text{Non cash interest})}{(\text{Net interest expense} - \text{Non cash interest})}$	>1.8	
<b>Debt gearing</b>			
Net debt / RAB	$= \frac{\text{Net debt}}{\text{RAB}}$	>70%	15%
OR			
Debt / Capitalisation	$= \frac{\text{Debt}}{\text{Capitalisation}}$	>70%	
<b>Cash flow to net debt</b>			
FFO / Net debt	$= \frac{\text{FFO}}{\text{Net debt}}$	>10%	5%
OR			
FFO / Gross debt	$= \frac{\text{FFO}}{\text{Net debt}}$	n.a. <sup>21</sup>	n.a. <sup>22</sup>
<b>Internal financing</b>	$= \frac{\text{FFO} - \text{Dividends}}{\text{Net capital expenditure}}$	>1.0	5%
<b>Return on regulated equity</b>	Not assessed		
<b>Dividend cover</b>	Not assessed		

### 3.4. Water Services Regulation Authority (Ofwat)

The water and sewerage service providers of England and Wales were privatised in 1989. Ofwat regulates water and sewerage service providers with the objective of protecting consumers' interests while ensuring efficient companies can carry out and finance their functions.<sup>23</sup>

Many of England and Wales's service providers have a licence condition stating that the firm should seek to maintain an investment grade credit rating, for example.<sup>24</sup>

<sup>21</sup> Not specified.

<sup>22</sup> Not specified.

<sup>23</sup> Ofwat, *Financeability and Financing the Asset Base: A Discussion Paper*, March 2011, page 4.

<sup>24</sup> Frontier Economics, *Assessing Financeability: The Way Forward*, February 2013, page 4.

The Appointee shall use all reasonable endeavours to ensure that it, or any Associated Company as issuer of corporate debt on its behalf, maintains at all times an issuer credit rating which is an Investment grade rating.

Ofwat's financeability assessment reviews the projected levels of a package of financial metrics against target levels that are consistent with those needed to maintain a credit rating well within the investment grade range.<sup>25</sup>

**Table 3.6**  
**Ofwat's financial metrics<sup>26</sup>**

Metric	Calculation	Water and sewage	Water only
<b>Interest coverage</b>			
Cash interest cover	$= \frac{\text{FFO} + \text{interest payable}}{\text{interest payable}}$ <sup>27</sup>	3	3.5
AND		1.6	1.8
Adjusted cash interest cover	$= \frac{\text{Return in allowed revenue}}{\text{interest payable}}$		
<b>Debt gearing</b>	$= \frac{\text{Net debt}}{\text{RAB}}$	<65%	<60%
<b>Cash flow to net debt</b>			
FFO/net debt	$= \frac{\text{FFO}}{\text{Net debt}}$	13%	17%
and			
RCF/net debt	$= \frac{\text{FFO} - \text{Dividends}}{\text{Net debt}}$	8%	10%
<b>Internal financing</b>	Not assessed		
<b>Return on regulated equity</b>	Not assessed		
<b>Dividend cover</b>	$= \frac{\text{Earnings per share}}{\text{Dividend per share}}$ <sup>28</sup>	>1	>1

<sup>25</sup> Ofwat, *Financeability and Financing the Asset Base: A Discussion Paper*, March 2011, page 21.

<sup>26</sup> Ofwat, *Financeability and Financing the Asset Base: A Discussion Paper*, March 2011, page 22.

<sup>27</sup> Ofwat defines FFO = Return in allowed revenue + Current Cost Depreciation + Infrastructure renewals charge – interest payable, where Return in revenue allowed is net cash flow from operating activities (that is net of capital charges) before tax and adjusted for the movement in working capital.

<sup>28</sup> The specification of Ofwat's dividend cover metric is not specified. We provide the general specification.

### 3.5. Office of Gas and Electricity Markets (Ofgem)

Ofgem regulates the UK's electricity and gas markets and is responsible for setting price controls for gas and electricity network service providers, as well as ensuring that those price controls are sufficient to maintain financeability.

Ofgem's price determination model puts emphasis on the role of equity in delivering the outputs that consumers expect in a financeable manner. As a result, Ofgem includes two equity metrics in its financeability analysis. It states that the return on retained earnings (RoRE) ratios tend to capture the impact of the price control package on each firm's financial position.<sup>29</sup>

Ofgem tests the financeability of the regulated firms using the financial metrics set out in Table 3.7. As with Ofwat, Ofgem calculates its financial metrics based on notional gearing rather than actual gearing. Ofgem also uses credit rating agency's thresholds to inform the target credit ratios in its financeability analysis; however, it does not explicitly specify those targets.

**Table 3.7**  
**Ofgem's financial metrics**

Metric	Calculation
<b>Interest coverage</b>	
FFO interest cover	$= \frac{\text{FFO} + \text{Net interest expense}}{\text{Net interest expense}}$
AND	
PMIRC	$= \frac{\text{FFO} + \text{interest} - \text{nominal RAB depreciation}}{\text{interest}}$
<b>Debt gearing</b>	$= \frac{\text{Net debt}}{\text{RAB}}$
<b>Cash flow to net debt (FFO/net debt)</b>	$= \frac{\text{FFO}}{\text{Net debt}}$
<b>Internal financing</b>	$= \frac{\text{Retained cash flow}}{\text{Capital expenditure}}$
<b>Return on regulated equity</b>	
Regulated equity / EBITDA	$= \frac{\text{Regulated equity}}{\text{EBITDA}}$
AND	
Regulated equity / regulated earnings	$= \frac{\text{Regulated equity}}{\text{Regulated earnings}}$
<b>Dividend Cover</b>	Not assessed

<sup>29</sup> OFGEM, *Decision on Strategy for the Next Transmission and Gas Distribution Price Controls - RII0-T1 and GDI Financial Issues*, 2011, page 39.

Ofgem does not expect firms to pass all ratios in all years. Instead, it seeks to understand why the regulated businesses may:

- fail to meet a target ratio for a sustained period, ie, several years;
- deviate significantly from a target ratio for two or more consecutive years; and/or
- repeatedly fail one target ratio while passing all others.<sup>30</sup>

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<sup>30</sup> OFGEM, *Decision on Strategy for the Next Transmission and Gas Distribution Price Controls - RII0-T1 and GDI Financial Issues*, 2011, page 40.

## 4. Financial Metrics

In section 3 of this report we identified six broad categories of financial metrics used to assess financeability, being: interest coverage; debt gearing; cash flow to net debt; internal financing; return on regulated equity; and dividend cover.

In this section we describe how and why the specifications of those metrics differ across agencies and what they indicate with respect to financeability. We then recommend specifications suitable to assessing the financeability of Victoria's regulated water service providers.

### 4.1. Interest cover

Interest cover is designed to quantify the number of times that interest payments are covered by the earnings of the business. The higher the interest cover ratio, the greater the company's ability to meet interest payments.

A low interest cover ratio suggests that the firm may not be able to meet its debt expenses through its available cashflows from operations. When the ratio is sufficiently low, it signals that the firm is generating insufficient revenues to adequately cover its interest expenses and this increases the risk that the firm will not be able to meet its debt obligations.

All regulators and credit rating agencies identified in section 3 use some form of an interest coverage metric. The major differences in the specification of the metric relates to the incorporation of an allowance for capital charges to maintain the firm's assets and the treatment of non-cash interest.

#### 4.1.1. FFO interest cover

FFO is the fundamental measure of the firm's cash flow after meeting operating expenses, including taxes and interest. An FFO interest cover calculates the number of times that cash flow after taxes, but before interest expenses, covers interest expenses. FFO interest cover is one of the simplest specifications of an interest cover metric. It is calculated as follows:

$$\text{FFO interest cover} = \frac{\text{FFO} + \text{net interest expense}}{\text{net interest expense}}$$

All regulators and credit rating agencies identified in section 3 use some form of FFO interest coverage metric. However, Moody's specification deducts non-cash interest where appropriate in the context of the regulatory financial model.

$$\text{Moody's FFO interest cover} = \frac{\text{FFO} + (\text{Net interest expense} - \text{Non cash interest})}{(\text{Net interest expense} - \text{Non cash interest})}$$

For example, in the UK, the regulatory regime provides a real rate of return so revenues and the regulatory asset base are adjusted for inflation. Similarly, Moody's excludes the indexation element of index-linked debt in calculating the net interest expense. However, the

indexation is captured by the leverage ratio since it increases the outstanding debt amount.<sup>31</sup> We note that Australian businesses do not generally issue indexed bonds.

#### 4.1.2. Capital adjusted interest cover

Moody's and Ofgem adopt an alternative specification of interest cover which has regard to cash flows that are used to maintain the asset base.

A capital adjusted (CA) interest cover metric quantifies the amount of headroom afforded by the company's cash flows in servicing its debt after taking into account the cost of maintaining a stable asset base.<sup>32</sup> This metric can be specified as:

$$\text{CA interest cover} = \frac{\text{FFO} + \text{Net interest expense} - \text{Capital charges}}{\text{Net interest expense}}$$

Regulatory capital charges represent the proportion of revenues, or FFO, that is not available to cover a service provider's debt because it needs to be allocated to replenish the asset base. Capital charges correspond to the concept of regulatory depreciation, accounting depreciation and maintenance expenditure.<sup>33</sup> For example, Ofgem specifies that its CA interest cover metric uses nominal RAB depreciation, while Ofwat specifies that current cost depreciation and infrastructure renewals charges must be used.

In our opinion, some form of interest cover ratio should comprise part of the Commission's financeability assessment of regulated water service providers. The principle that regulated water service providers offer services on a continuing (indefinite) basis supports the adoption of CA interest cover as a relevant metric.

## 4.2. Debt gearing

A debt gearing ratio expresses the proportion of a firm's debt to its value, ie, debt plus equity. It is a measure of the firm's financial leverage and it demonstrates to what extent a firm is funded by its owners' funds (ie, equity) compared with its creditors' funds. Since debt owners must be paid before equity owners, a higher proportion of debt increases the risk to creditors that the business will default.

All regulators and credit rating agencies identified in section 3 use some form of debt gearing metric. Most use net debt to RAB as a measure of gearing, but Moody's also give its analysts the discretion to use total debt to capitalisation.

### 4.2.1. Net debt to RAB

This ratio is designed to measure leverage as the proportion of debt relative to the value of assets on which the service provider is allowed to earn a regulated rate of return. The RAB

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<sup>31</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 20.

<sup>32</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 20.

<sup>33</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, pages 20-21.

represents the net present value of the future cash flow earnings potential of the service provider.<sup>34</sup> For completeness it is specified as:

$$\text{Net debt to RAB} = \frac{\text{Net debt}}{\text{RAB}}$$

The ratio of net debt to RAB therefore represents ratio of debt to revenue generating assets.

#### **4.2.2. Debt to Capitalisation**

Debt capitalisation is the ratio of debt to market capitalisation, where market capitalisation is normally defined as the book value of debt plus the market value of equity. This ratio is specified as:

$$\text{Debt to capitalisation} = \frac{\text{Debt}}{\text{Capitalisation}}$$

In our view, the ratio of net debt to RAB represents a ratio of debt to revenue generating assets and should form part of the Commission's financeability assessment of regulated water service providers.

#### **4.3. Cash flow to debt**

A cash flow to debt metric can be a useful indicator of a firm's ability to pay its debts using only its operating income. It quantifies the number of times the financial obligations of a company are covered by its earnings. If the cash flow to gross debt metric is greater than one, the firm can meet its financial obligations. If it is less than one, it indicates that the firm would be unable to pay its debts in the absence of an increase in its earnings.

All regulators and credit rating agencies identified in section 3 use a cash flow to debt metric in the form of an FFO to debt ratio. We note that Ofwat and Moody's use additional metrics to assess the sensitivity of gross debt and dividends on the outcome.

##### **4.3.1. FFO to gross debt**

Gross debt refers to all debt outstanding in a firm. The FFO to gross debt metric is generally used if the net debt is not reported or not able to be calculated with a reasonable degree of certainty.

$$\text{FFO to gross debt} = \frac{\text{FFO}}{\text{Gross debt}}$$

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<sup>34</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 21.

### 4.3.2. FFO to net debt

Net debt is the difference between gross debt and the cash balance of the firm. Where firms maintain large cash balances, analysts may prefer to work with net debt ratios. The FFO to net debt metric quantifies the ability of a company to repay its debts when they are due. Further, relative to FFO to gross debt, FFO to net debt provides a better measure of whether the firm is over- or under-leveraged.

$$\text{FFO to net debt} = \frac{\text{FFO}}{\text{Net debt}}$$

### 4.3.3. Retained cash flow to net debt

The retained cash flow (RCF) to net debt metric differs slightly from the FFO to net debt metric in that it quantifies a firm's ability to pay its debts using its FFO less dividends paid to shareholders. Moody's gives its analysts the discretion to assess this metric in conjunction with the FFO to net debt metric to assess the impact of dividend payments on a company's financial profile.<sup>35</sup> It is calculated as:

$$\text{RCF to net debt} = \frac{\text{FFO} - \text{dividends}}{\text{Net debt}}$$

In our opinion, in the absence of any restrictions on the balance sheet cash holding of regulated water service providers, there should be separate indicators for equity. Therefore, we recommend that the Commission includes a FFO to net debt assessment rather than a retained cash flow to net debt assessment in its financeability assessment.

## 4.4. Internal financing

The internal financing metric quantifies the degree to which a firm is able to fund its capital expenditure internally. A firm that has a significant capital expenditure program relative to available cash flows has less flexibility to react to changing economic circumstances than a firm that can easily fund its capital expenditure requirements by internally generated cash flows.<sup>36</sup>

The Commission, Moody's and Ofgem calculate an internal financing metric as part of their financeability assessment. Internal financing is calculated as follows:

$$\text{Internal financing} = \frac{\text{FFO} - \text{dividends}}{\text{Capital expenditure}}$$

For the purposes of calculating this ratio, capital expenditure is net of any government grants, subsidies or developer's contributions.<sup>37</sup>

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<sup>35</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 22.

<sup>36</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 21.

<sup>37</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 22.

In our opinion, a degree of conservatism in any financeability assessment is warranted when a firm is required to undertake a substantial new capital program. As a result, we recommend that the Commission have regard to an internal financing metric in its assessment of financeability.

## 4.5. Equity financeability assessments

In section 2.2.2 we noted that, since regulated water service providers are financed through a mixture of debt and equity, any financeability assessment should also consider the possibility of short term equity financeability issues. However, we also noted that, in the context of Victorian water service providers, equity financeability constraints are of a secondary order of importance.

We note that none of the regulators identified in section 3 use profitability as a measure of financeability. This is because statutory profit does not give a clear indication of the near term requirements for payments to equity and debt providers, which should be the basis for any regulator's decision to adjust the cash flows of a regulated entity. Further, the adequacy of statutory profitability in the long term is addressed in the building block model through the setting of an appropriate return on equity. For the purpose of assessing short term equity financeability we consider the two financial metrics used by other regulators.

### 4.5.1. Return on regulated equity

Ofgem recognises that the use of notional gearing and cost of debt may not reflect actual gearing and the cost of debt, so it assess the firm's return on regulated equity (RoRE) to check the overall implications of the regulatory settlement. The RoRE is compared to the cost of equity originally allowed in the price control settlement and to the return achieved by shareholder of other regulated firms.<sup>38</sup> Further, Ofgem uses the RoRE to establish the level of notional gearing that would allow an efficient company to achieve reasonable returns and ensure sufficient cover against downside risk.<sup>39</sup> The metric can be calculated in two ways:

$$\text{RoRE} = \frac{\text{Regulated equity}}{\text{Regulated earnings}} \text{ OR } = \frac{\text{Regulated equity}}{\text{EBITDA}}$$

It is worth noting that, if actual gearing is used to calculate all the financial metrics of a financeability assessment, it is not necessary to the firm's RoRE to confirm the shareholders were receiving a reasonable return.

In our opinion, this metric is of limited value in a financeability assessment since the appropriateness of the regulated return on equity is determined as part of the building block assessment.

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<sup>38</sup> Ofgem, *Glossary of Terms: RIIO-T1 and GD1 Review*, 31 March 2010, page 12

<sup>39</sup> OFGEM, *Decision on Strategy for the Next Transmission and Gas Distribution Price Controls - RIIO-T1 and GD1 Financial Issues*, 2011, page 41.

#### 4.5.2. Dividend cover

A dividend cover metric quantifies the degree to which a firm has the ability to pay dividends to its shareholders. Ofwat uses a dividend cover ratio because the water service providers it regulates are privatised and it wants to ensure the dividends received by its shareholders are sustainable. If the metric equals less than one, the firm is using its retained earnings from a previous year to fund its dividends. Such an outcome suggests that the current dividend policy of the firm is unsustainable.

$$\text{Dividend cover} = \frac{\text{Earnings per share}}{\text{Dividends per share}}$$

We noted in section 2.2.2 that only the minority of Victorian water service providers pay dividends and they are publicly owned, therefore, the applicability of this metric may be limited.

## 5. Adjustment to Financial Metrics

Before any financial metrics can be calculated it is necessary to make a decision regarding the extent to which;

- actual or notional financial data will be assessed; and
- any adjustments need to be made to that financial data.

We assess each of these decisions in the following sections.

### 5.1. Actual versus notional costs

An assessment that gave more emphasis to notional or benchmark data would involve the financial metrics being calculated using:

- expected operating and maintenance costs;
- expected debt gearing ratio;
- the benchmark cost of debt; and
- the building block company tax costs.

The calculation of financial metrics using notional data assumes that the regulated water entity's actual costs match the benchmark assumptions. We discussed in section 2.1.2 that it is questionable whether a regulated entity's costs will match all of its cost assumptions, particularly the gearing and cost of debt assumptions. As a result, the use of notional data is unlikely to provide an understanding of a water service provider's actual financeability.

With the exception of the three adjustments we set out below, we recommend that the Commission continue to use a regulated water service provider's actual costs to calculate the financial metrics.

### 5.2. Other adjustments

Moody's undertakes a number of adjustments to the financial statements of a business to better reflect the underlying economics of transactions and to improve the comparability of a company's financial statements with those of its peers.<sup>40</sup>

We recommend the Commission adjust the actual costs of regulated water service provider's to account for:

- operating leases;
- defined benefit superannuation schemes; and
- capitalised interest costs.

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<sup>40</sup> Moody's Investor's Service, *Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations*, 21 December 2010.

Each of these adjustments are discussed in greater detail below.

### 5.2.1. Superannuation obligations

Some accounting regimes do not recognise, or only partially recognise, the economic obligation arising from a business's commitments to its superannuation trust and employees in general.

Moody's view is that, in regard to an underfunded superannuation plan, the balance sheet should be adjusted to reflect a debt-like liability equal to the underfunded status of a superannuation plan. In our opinion, and consistent with that of IPART,<sup>41</sup> making such an adjustment may be appropriate when conducting a financeability assessment. Moody's methodology for implementing an adjustment for underfunded superannuation plans involves the following steps.<sup>42</sup>

- Balance sheet – record as debt the amount by which the underfunded superannuation obligation is underfunded;
- Income statement – adjust superannuation expenses to eliminate smoothing and exclude net periodic superannuation income; and
- Cash flow statement – recognise only the service cost as an outflow from 'cash from operations' and reclassify employer cash superannuation contributions in excess of the service cost from an 'operating cash outflow' to a 'financing cash outflow', however, no adjustment is necessary if superannuation contributions are less than the service cost.

### 5.2.2. Operating leases

Despite the contractual obligation to make operating lease payments, and the fact that their non-payment often triggers a default, businesses do not recognise operating leases as debt on their balance sheet. In our opinion, and consistent with that of IPART,<sup>43</sup> operating leases have debt-like qualities and, therefore, it may be relevant to adjust the financial statements accordingly. Moody's implements adjustments for operating leases as follows.<sup>44</sup>

- Balance sheet – multiply the current rent expense by a multiple of between 4 and 10 and add the resulting figure to debt, or, if the present value of the minimum lease commitments is higher, add that amount to debt instead;
- Income statement – classify one third of the rent expense to interest expense and the remaining two thirds to 'depreciation – capitalised operating leases' (a component of operating profit) – we note that proportional changes must be made to operating expenses; and

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<sup>41</sup> IPART, *Financeability Tests in Regulation*, Draft Decision, August 2013, page 15.

<sup>42</sup> Moody's, *Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations*, December 2010, page 7.

<sup>43</sup> IPART, *Financeability Tests in Regulation*, Draft Decision, August 2013, page 14.

<sup>44</sup> Moody's, *Moody's Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations*, December 2010, page 10.

- Cash flow statement – reclassify a portion of rent expense from an ‘operating cash flow’ to a ‘financing cash outflow’, for newly acquired leased assets, simulate capital expenditure by increasing the ‘capital expenditures’ line in ‘investing cash flows’ and entering a concomitant borrowing in ‘financing cash outflow’ to fund the capital expenditures.

### 5.2.3. Capitalised Interest

Some accounting standards require interest to be capitalised as a part of property, plant and equipment, the result of which is that, in a year in which interest is capitalised, reportable capital assets, income and cash flows from operations all increase relative to what they would have been if interest was expensed.

We agree with Moody’s view that an analysis of interest coverage should expense all incurred interest cost regardless of the accounting treatment, ie, whether interest is included as an expense on the income statement or as an asset on the balance sheet. Therefore, for the purpose of a financeability assessment, it may be appropriate to make the following adjustments with respect to capitalised interest.<sup>45</sup>

- Balance sheet – subtract the amount of capitalised interest during the period from property plant and equipment and adjust deferred taxes and reduce retained earnings by the after tax cost of the additional interest expense recognised on the income statement;
- Income statement – increase interest expense by the amount of capitalised interest during the current period and reduce the applicable tax expense; and
- Cash flow statement – no adjustment is necessary.

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<sup>45</sup> Moody’s, *Moody’s Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations*, December 2010, page 12.

## 6. Qualitative Factors of Financeability

Moody's methodology for rating privately financed regulated water entities applies a 60 per cent weighting to the assessment of qualitative factors, with the remaining 40 per cent weighting applying to financial metrics. A number of the qualitative factors assessed by Moody's are within the control of management and generally should not influence the parameters of a financeability assessment undertaken by a regulator for the purpose of adjusting a firm's price or revenue path.

However, a benchmark regulated water service provider's revenue and cash flow are dependent on tariff levels and the tariff-setting mechanism used by the regulatory body. It follows that, in our opinion, Moody's qualitative analysis of the 'regulatory environment & asset ownership model' is relevant to an assessment of financeability. It is also relevant to note that Moody's methodology applies a 40 per cent weighting to the analysis of the 'regulatory environment & asset ownership model'.

The remainder of this section describes Moody's qualitative analysis of the 'regulatory environment & asset ownership model' and estimates a qualitative rating for Victorian water service providers by reference to:

- Moody's qualitative factors described in section 6.1;
- the qualitative ratings given to SWC; and
- a high-level analysis of SWC's characteristics compared to those of Victorian water service providers.

### 6.1. The 'Regulatory Environment & Asset Ownership Model'

Moody's qualitative analysis of the 'regulatory environment & asset ownership model' assesses the stability of a regulated water service provider's cash flows by analysing and assigning a rating to four sub-factors, being the:

- stability and predictability of regulatory environment;
- asset ownership model;
- cost and investment recovery (ability & timeliness); and
- revenue risk.

Moody's describes these sub-factors as being 'of paramount importance in determining the service providers overall business risk and thus debt capacity' and, accordingly, Moody's applies a 40 per cent weighting to the analysis of the qualitative factors listed above.<sup>46</sup>

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<sup>46</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 6.

### 6.1.1. Stability and predictability of regulatory environment

The stability and predictability of a regulatory regime is a critical determinant of a water service provider's business risk profile and, in assessing this sub-factor, Moody's ratings methodology gives reference to:

- how long the regulatory regime has regulated water;
- whether there are clearly defined, easily accessible and consistently applied risk allocation principles;
- the independence of the regulatory regime and the risk of politically motivated intervention; and
- the general rule of law within the jurisdiction and whether there is an independent judiciary which can be used to enforce legal rights.

Moody's applies a 15 per cent weighting to the 'stability and predictability of regulatory regime' sub-factor due to its importance in determining a water service provider's business risk profile.<sup>47</sup>

### 6.1.2. Asset ownership

Moody's rating methodology is designed to apply to regulated water service providers that own their assets outright in perpetuity or under a concession or other contractual arrangement.

A water service provider that owns its assets outright in perpetuity has ultimate control over its assets and will have a higher rating, whereas a service provider which holds assets under a short term concession would score lower. Similarly, a water service provider that holds its assets under a concession and is subject to a legal framework that does not provide clear principles for recovering the residual asset value upon termination, or has an untested mechanism for doing so, will be rated relatively lower.

Moody's applies a 10 per cent weighting to this sub-factor.<sup>48</sup>

### 6.1.3. Cost and investment recovery (ability & timeliness)

Under this sub-factor, Moody's evaluates the ability of a water service provider to recover the cost of its operations and investment in a timely manner. More specifically, this factor measures the allocation of risk between the water service provider and its customers by reference to the tariff regime.

Regulators have a number of often competing regulatory objectives. To the extent that a regulatory regime prioritises social or other objectives over the ability of a water service provider to derive an adequate return, the financial viability of that water service provider will be hindered and Moody's will assign a lower rating.

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<sup>47</sup> Moody's, *Global Regulated Water Utilities: Rating Methodology*, December 2009, page 7.

<sup>48</sup> *Ibid.*

For example, a water service provider that has the ability to adjust tariffs freely and without regulatory approval will score highest. On the other hand, a service provider will be assigned a lower rating if it:

- operates under a regulatory regime which does not allow the recovery of its full costs;
- provides no ex-post adjustment mechanism for costs not recovered during a regulatory period; and/or
- is subject to politically motivated low tariffs.

Moody's rating methodology applies a 12 per cent weighting to this sub-factor.<sup>49</sup>

#### 6.1.4. Revenue risk

The 'revenue risk' sub-factor addresses the potential volatility of a water service provider's revenues. To this effect, Moody's analyses the volatility of demand and any regulatory mechanisms that protect water service providers from divergences in forecast and outturn revenues.

Water service providers that are not exposed to volume or revenue volatility risks will score highest, whereas those exposed to seasonality, weather patterns or changes in demand patterns will be subject to comparatively more revenue volatility and will receive a lower rating.

### 6.2. Analysis of Victorian water service providers

SWC is the only Australian water service provider for which Moody's has provided a credit opinion.<sup>50</sup> SWC's rating for the sub-factors which comprise the 'regulatory environment & asset ownership model' factor, as rated by Moody's in 2013, are displayed in Table 6.1 below.

**Table 6.1**  
**Moody's rating of SWC for the Regulatory Environment and Asset Ownership Model**

Regulatory Environment & Asset Ownership Model (40%)	Weight	Investment grade				Non-investment grade		
		Aaa	Aa	A	Baa	Ba	B	Caa
a) Stability and Predictability of Regulatory Regime	15%			X				
b) Asset Ownership Model	10%		X					
c) Cost and Investment Recovery (Ability & Timeliness)	12%			X				
d) Revenue Risk	3%			X				

Source: Moody's, *Credit Opinion: Sydney Water Corporation*, 11 March 2013.

<sup>49</sup> *Ibid.*

<sup>50</sup> Moody's, *Credit Opinion: Sydney Water Corporation*, 11 March 2013.

We estimated the Victorian water service providers' qualitative rating for 'regulatory environment & asset ownership model' by reference to:

- Moody's qualitative factors and criteria described in section 6.1;
- the qualitative ratings given to SWC; and
- a high-level analysis of SWC's characteristics compared to those of Victorian water service providers.

The remainder of this section sets out our analysis estimate of the qualitative ratings for Victorian water service providers.

### **6.2.1. Stability and Predictability of Regulatory Environment**

Taking as its reference point the regulatory regime administered by IPART, Moody's gave SWC an A rating for the 'stability and predictability of the regulatory regime' sub-factor.

In this section we describe the factors that contributed to this rating and estimate the appropriate rating for Victorian water service providers with reference to the regulatory environment created by the Commission.

#### **6.2.1.1. Sydney Water Corporation**

IPART is an independent regulatory body which has regulated water service providers for less than 10 years. IPART is transparent in its approach to regulation and publishes guidance as to its methodologies.<sup>51</sup>

In making price determinations, IPART is required to have reference to 12 broad objectives, which include an array of social objectives and financial objectives for the regulated business.<sup>52</sup> This introduces a degree of uncertainty as to whether, when making price determinations, IPART will prioritise social objectives over the financial objectives of a water service provider. Notably, there is no independent judiciary to which water service providers can appeal the merits of IPART's determinations.

#### **6.2.1.2. Victorian Water service providers**

Victorian water service providers are regulated by the Commission, an independent regulatory body which was established in 2001 and has been regulating water service providers for approximately 8 years.

The Commission is transparent in its approach to regulation and is required to develop and publish a Charter of Consultation and Regulatory Practice, which includes information on the processes for making determinations and other regulatory decisions and conducting

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<sup>51</sup> IPART, *Methodology Paper – Sydney Desalination Plant – Efficiency and Energy Adjustment Mechanisms*, April 2012.

<sup>52</sup> IPART Act, Section 15.

inquiries.<sup>53</sup> It also publishes draft decisions, engages external consultants and, in contrast to IPART, the merits of its determinations are appealable to an independent third party.<sup>54</sup>

The Commission is consistent in its determinations and is explicitly required to have regard to consistency in regulation between states and on a national basis.<sup>55</sup> Although the Commission's primary objective is to promote the long term interests of Victorian consumers,<sup>56</sup> when making determinations it must also have regard to a water service provider's ability to recover its costs.<sup>57</sup> Despite these sometimes conflicting objectives, in our opinion, the Commission's objectives are more narrowly defined than those of IPART and, hence, its determinations more predictable.

In our opinion, the various characteristics of the Commission relative to that of IPART establish a balance between positive and negative influences, in particular, the Commission has a relatively shorter history regulating water service providers, while on the other hand its decisions are appealable and are likely to have greater predictability. Therefore, we estimate that Victorian Water service providers would attract the same rating as SWC, ie, Victorian water service providers would be likely to be rated A with respect to Moody's 'stability and predictability of regulatory regime' sub-factor.

### 6.2.2. Asset Ownership

Moody's assigned an Aa rating to SWC for the 'asset ownership' sub-factor. In this section we describe the characteristics of SWC that contributed to this rating and estimate the appropriate rating for Victorian water service providers.

#### 6.2.2.1. Sydney Water Corporation

The Aa rating assigned to SWC was a result of SWC owning its assets outright and in perpetuity and, as a result, having ultimate control of them.

#### 6.2.2.2. Victorian water service providers

Consistent with SWC's asset ownership, Victorian water service providers own their substantive assets outright and in perpetuity. Therefore, with reference to Moody's ratings criteria and the Aa rating assigned to SWC, we estimate that Victorian water service providers would also be rated Aa with respect to Moody's 'asset ownership' sub-factor.

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<sup>53</sup> Victorian Government, *Essential Services Commission Act 2001*, July 2008, Part 2, item 14.

<sup>54</sup> *Op Cit*, item 55(1)(c).

<sup>55</sup> ESC Act, Part 2, item 8A(1)(f).

<sup>56</sup> ESC Act, Part 2, item, 8(1).

<sup>57</sup> WIRO 2012, item 14(1)(a)(ii) to (iii).

### 6.2.3. Cost and Investment Recovery (Ability & Timeliness)

Moody's gives SWC an A rating for the 'cost and investment recovery (ability and timeliness)' sub-factor. In this section we describe the characteristics of SWC that contributed to this rating and estimate the appropriate rating for Victorian water businesses.

#### 6.2.3.1. Sydney Water Corporation

IPART sets the maximum prices that SWC can charge by reference to a notional revenue requirement.<sup>58</sup> To determine SWC's notional revenue requirement, IPART applies a building block approach<sup>59</sup> to estimate SWC's efficient level of operating and capital costs,<sup>60</sup> which includes a return on capital and return of capital, ie, depreciation.<sup>61</sup> SWC's cost recovery is based on ex-ante allowances set by IPART at four-yearly price reviews and, therefore, in accordance with Moody's guidance,<sup>62</sup> SWC assumes a moderate degree of risk allocation.

In calculating the notional revenue requirement, IPART also forms a view of the efficiency gains that SWC could reasonably achieve and sets prices such that there is an incentive for SWC to achieve efficiency gains, ie, prices are not set with reference to costs actually incurred.<sup>63</sup>

It is relevant to note that, in the past, IPART has not allowed SWC to recover all of its expected costs. In 2005, IPART set SWC's prices such that it did not recover \$98 million in costs<sup>64</sup> and, in the following 2008 determination, IPART set SWC's prices such that its revenue was \$17 million less than the notional revenue requirement calculated by IPART.<sup>65</sup>

To mitigate the possibility of SWC over- or under-recovering its costs, IPART allows an adjustment to be made in the next price review if outturn water demand differs from forecast demand by greater than 10 per cent.<sup>66</sup>

#### 6.2.3.2. Victorian water service providers

Consistent with IPART's approach, the Commission applies a building block model to determine a tariff structure such that Victorian water service providers recover:<sup>67</sup>

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<sup>58</sup> IPART, *Review of Prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services*, Final Report, June 2012, page 29.

<sup>59</sup> *Op cit*, page 29.

<sup>60</sup> *Op cit*, page 43.

<sup>61</sup> *Op cit*, page 69.

<sup>62</sup> Moody's Investor Service, *Global Regulated Water Utilities*, December 2009, page 10.

<sup>63</sup> *Op cit*, page 19.

<sup>64</sup> IPART, *Determinations Nos 5, 6, 7, 2005*, Final Report, page 145.

<sup>65</sup> IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services*, Final Report, June 2008, page 23.

<sup>66</sup> *Op cit*, page 38.

<sup>67</sup> WIRO, item 14(1)(a)(ii), (iii) and (iv).

- operational, maintenance and administrative costs; and
- expenditure on renewing and rehabilitating existing assets; and
- derive a rate of return on investments.

The Commission conducts regulatory reviews for Victorian water service providers every 5 years and does not backload revenues. In addition, during the regulatory period, Victorian water service providers have the ability to apply to the Commission for price changes, or a change in the manner in which prices are calculated.<sup>68</sup>

Taking account of IPART's previous disallowance of the recovery of all of SWC's costs, in our opinion, Victorian water service providers have the same, if not a greater, ability to recover their costs and investments relative to SWC. However, the efficiency and productivity hurdles that the Commission imposes on Victorian water service providers precludes Victorian water service providers from being rated better than SWC, ie, to be given an Aa rating.<sup>69</sup>

We estimate that Victorian water service providers would be rated A in relation to Moody's 'cost and investment recovery (ability and timeliness)' sub-factor.

#### 6.2.4. Revenue Risk

Moody's assigned SWC an A rating with respect to the 'revenue risk' sub-factor. In this section we describe the characteristics of SWC that contributed to this rating and estimate the appropriate rating for Victorian water service providers.

##### 6.2.4.1. Sydney Water Corporation

IPART sets the maximum prices that SWC may charge, and so, SWC assumes some degree of water volume related revenue risk. However, Moody's deemed SWC's revenues to be reasonably stable due to:<sup>70</sup>

- the ability to reset water volume in future regulatory periods;
- the adjustment allowed in the next regulatory period if revenue varies by greater than 10 per cent because of variations in the volume of water.
- IPART's assumption of low forecast demand from 2012/13 to 2015/16;
- SWC's diversified revenue base from to its fixed service charges;
- 80 per cent of SWC's revenue coming from residential users, which Moody's considers to be more resilient than industrial customers; and
- 10 per cent of SWC's revenue coming from non-regulated activities.

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<sup>68</sup> *Op cit*, item 12AA(a).

<sup>69</sup> Moody's Investor Services, *Credit Opinion: Sydney Water Corporation*, 11 March 2013, page 13.

<sup>70</sup> Moody's, *Credit Opinion: Sydney Water Corporation*, 11 March 2013.

These factors, along with SWC's market position as the primary provider of water in the wider Sydney region, contributed to the A rating given to SWC for the 'revenue risk' sub-factor.

#### 6.2.4.2. Victorian water service providers

The Commission allows an uncertain and unforeseen events mechanism to apply to Victorian water service providers, whereby either a water service provider or the Commission can reopen a determination to account for events that were uncertain or unforeseen at the time prices were set, ie, unwarranted differences between actual and forecast demand.<sup>71</sup> For example, the Commission used the re-opening provisions for Coliban Water in a previous regulatory period to address an unexpected fall in demand.

Consistent with SWC's customer base, the customer base of the majority of Victorian water service providers is comprised of residential customers, which Moody's considers to be more resilient than industrial customers.

Victorian water service providers can choose either a price or revenue cap pricing structure. While the majority of water service providers opt for a price cap pricing structure,<sup>72</sup> those which chose a revenue cap will minimise their revenue risk. For completeness, we note that Moody's applies only a 3 per cent weighting to the 'revenue risk' sub-factor and, therefore, in our opinion, water service providers that adopt a revenue cap pricing structure should not have lower critical values for the financial metrics recommended in section 7.1.

In consequence, the level of revenue risk assumed by Victorian water service providers is likely to be low and consistent with that of SWC. Therefore, we estimate that the Victorian water service providers would be rated A with respect to Moody's 'revenue risk' sub-factor.

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<sup>71</sup> ESC, *Price Review 2013: Greater Metropolitan Water Businesses*, Final decision, June 2013, page 180.

<sup>72</sup> All but one of the metro water utilities use a price cap price structure, whereas rural water utilities typically opt for revenue caps.

### 6.2.5. Conclusion

We summarise our assessment of Victorian water service providers relative to SWC for Moody's analysis of the 'regulatory environment and asset ownership model' in Table 6.2 below.

**Table 6.2**  
**Comparison of qualitative factors**

<b>Moody's sub-factor</b>	<b>SWC Rating</b>	<b>Victorian water service providers</b>
Stability and Predictability of Regulatory Regime	A	Same if not better
Asset Ownership Model	Aa	Same
Cost and Investment Recovery	A	Same
Revenue Risk	A	Same
<b>Overall</b>	<b>A</b>	<b>Same</b>

Our high level analysis of the regulatory characteristics of Victorian water service providers relative to those of SWC indicated that Victorian water service providers should be rated the same as SWC with respect to Moody's criteria for the 'regulatory environment and asset ownership model'. In other words, we estimate Victorian water service providers to be rated 'A' for Moody's 'regulatory environment and asset ownership model' factor, to which Moody's methodology applies a 40 per cent weighting.

## 7. Recommended Implementation

This section describes which financial metrics should be used to assess Victorian water service providers' financeability. We propose a set of primary and secondary metrics and a range of values for each over which the service provider should fall in order to be deemed financeable.

### 7.1. Financial metrics

The objective of a regulator's financeability assessment is to determine whether its expected revenue is sufficient for an efficient service provider to finance its operations and undertake its forecast capital program over the regulatory control period.

The objective has two components. One assesses the service provider's ability to obtain finance on a continual basis, ie, debt. The other assesses the ability of the service provider to raise funds for specific capital expenditure, ie, equity. Given that debt must be obtained on a continuous basis and equity is less essential to the short term financeability of a service provider, metrics that assess a service provider's ability to obtain debt are more critical in assessing financeability relative to those that assess their ability to raise equity.

#### 7.1.1. Primary metrics

Primary metrics are used to assess the ability of water service provider to finance its operations over the regulatory control period. The most applicable metrics for this purpose are similar to those adopted by Moody's. They include:

- FFO and capital adjusted interest cover;
- net debt to RAB;
- FFO to net debt; and
- internal financing.

We discuss the appropriate specification of these metrics below.

#### *Interest cover*

Interest cover quantifies the ability of a service provider to meet its debt expenses through its available cashflows from operations. All regulators and credit rating agencies identified in section 3 use some form of FFO interest cover metric, therefore, we recommend that the Commission have regard to the FFO interest cover metric.

However, Victorian water service providers are obliged to provide water services in perpetuity and as a result they are required to reinvest a proportion of their cash flows into maintaining their assets. Therefore the capital adjusted interest cover metric is also relevant because it measures the extent to which the service provider's cash flows can service its debt burden after taking into account the cost of maintaining a stable asset base. There are myriad ways to calculate capital adjusted interest cover – we suggest that it be calculated as:

$$\text{Capital adjusted interest cover} = \frac{\text{FFO} + \text{interest expense} - \text{nominal RAB depreciation}}{\text{interest expense}}$$

We note that we have not included net cash interest because it is assumed to be zero.

To summarise, in our opinion, the Commission should have regard to both the FFO interest cover metric and the capital adjusted interest cover metric.

### ***Net debt to RAB***

Net debt to RAB measures a service provider's leverage as a proportion to the capital invested on which the company is allowed to earn a return. Every regulator and credit rating agency identified in section 3 employs this metric to assess the debt burden of a service provider.

### ***FFO to net debt***

FFO to net debt quantifies the ability of a company to repay its debts when they are due. It is a typical metric used by regulators and credit rating agencies to assess the financeability of firms across regions and industries. As a result, this metric allows for the comparison of a water service provider's financeability with similar firms elsewhere in the world. We note that the FFO to net debt metric is of limited use relative to the other three metrics because it does not take into account the need of maintenance investments when comparing cash flows to future debt repayments. As a result, we recommend that this primary metric be assigned less weight than the others.

### ***Internal financing***

The internal financing metric assesses to what extent a firm can internally fund its capital expenditure, where capital expenditure is net of any government grants, subsidies or developers' contributions. We note that the internal financing metric is not definitive in determining the financeability because a service provider with strong leverage ratios and a poor internal financing position is still likely to attract investors.

## **7.1.2. Secondary Metric**

Secondary metrics assess the ability of the service provider to undertake its forecast capital program over the regulatory control period, ie, raise equity. The most applicable metrics for this purpose is the dividend cover metric.

We note that Victorian water service providers are publicly owned, however, in our opinion, any financeability assessment should be consistent with the principle of competitive neutrality.<sup>73</sup> Therefore, we have disregarded Victorian water service water providers' public ownership in recommending financial metrics.

The dividend cover metric quantifies a firm's ability to pay its dividend to shareholders and whether those dividends are sustainable. However, where the metric suggests that the firm is using its retained earnings from a previous year to fund its dividends, the financeability of the

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<sup>73</sup> See section 2.2.1.

firm is likely to deteriorate. This metric is particularly important where the service provider plans to access external equity markets to raise new equity for a capital expenditure program.

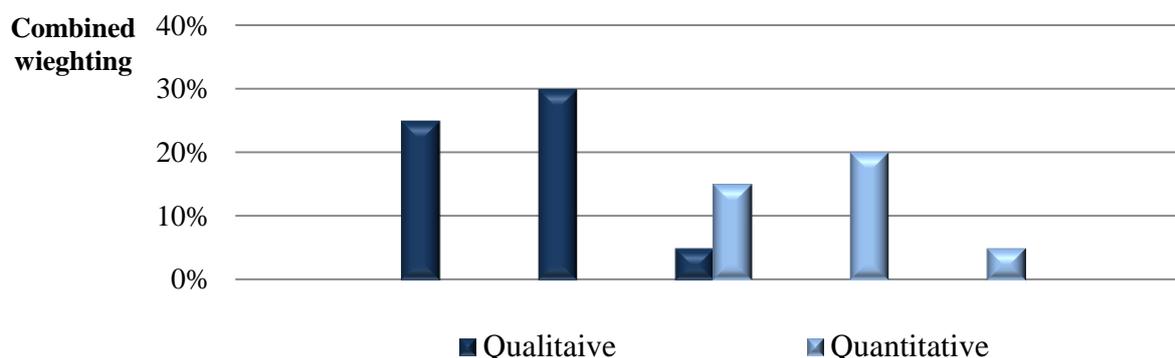
We understand that the majority of Victorian water service providers do not pay dividends and, therefore, the dividend cover ratio would not be applicable to these service providers.

## 7.2. Consideration of qualitative factors

Financeability assessments hinge on defining an acceptable range for the qualitative and quantitative categories. Given we propose that the Commission only evaluates quantitative financial metrics, the ranges adopted by Commission must be informed by Victorian water service providers' qualitative results.

We discussed in section 6 that Moody's assigned SWC a higher rating in the qualitative categories relative to the quantitative categories. Moody's assigned SWC an overall baseline credit assessment of Baa2.<sup>74</sup> It follows that the strength of SWC's qualitative factors compensated for its relatively weak financial metrics, and as a result it was able to achieve an investment grade credit rating.

**Figure 7.1**  
SWC distribution of ratings by category type



Similarly, when establishing an acceptable range for a financeability assessment based on financial metrics alone, it is necessary to consider the strength of the evaluated firm in qualitative categories. We have undertaken a high-level assessment of the performance of Victorian's regulated water service providers in qualitative categories by inferring from Moody's evaluation of SWC and comparing the circumstances facing Victorian regulated water service providers with SWC. We have assessed only the first qualitative broad category: Regulatory Environment & Asset Ownership Model, for two reasons:

- first, it accounts for the majority of the weighting assigned to qualitative factors; and

<sup>74</sup> We note that Moody's issuer rating of SWC was increased from the baseline credit rating of Baa2 to A1 reflecting a high likelihood of support from NSW Treasury Corporation and its very high credit rating profile. However, we are assessing the financeability of the service provider as distinct from the State Government, and as such only assess the service provider's base-line credit rating.

- second, and most importantly, the factors within the other two broad qualitative categories are within the control of the management and should not influence the parameters of a financeability assessment.

We summarise our assessment of Victorian regulated water service providers, relative to SWC, in Table 7.1. We determine that overall qualitative ratings of Victorian regulated water service providers within the regulatory environment & asset ownership model category are similar if not better than SWC.

**Table 7.1**  
**Comparison of qualitative factors**

<b>Moody's sub-factor</b>	<b>SWC Rating</b>	<b>Victorian water service providers</b>
Stability and Predictability of Regulatory Regime	A	Same if not better
Asset Ownership Model	Aa	Same
Cost and Investment Recovery	A	Same
Revenue Risk	A	Same
<b>Overall</b>	<b>A</b>	<b>Same</b>

### 7.3. Financial metric ranges

Based on our analysis in Table 7.1, we conclude that Victorian water service providers are likely to achieve an average rating across the 'regulatory environment and asset ownership model' category of A. We deduce that a Victorian regulated water service provider would also achieve an investment grade credit rating with quantitative metrics consistent with a Ba rating. As a result, we propose that the range applicable to quantitative financeability assessments is that consistent with a Ba credit rating or higher.<sup>75</sup> We set out this range in Table 7.2.

<sup>75</sup> We note that Moody's does not distinguish between Ba1, Ba2 and Ba3 when determining credit metrics, ie, the utility will rate a Ba for net debt to RAB metric for any value between 70-85%.

**Table 7.2**  
**Acceptable range for financial metrics**

	<b>Aaa</b>	<b>Aa</b>	<b>A</b>	<b>Baa</b>	<b>Ba</b>	<b>B</b>
<b>Primary metrics</b>						
FFO interest cover	>10	7.0-10.0	4.5-7.0	2.5-4.5	1.8-2.5	1.5-1.8
Capital adjusted interest cover	>8.0	4.5-8.0	2.5-4.5	1.5-2.5	1.2-1.5	1.0-1.2
Net debt to RAB	<25%	25-40%	40-55%	55-70%	70-85%	85-100%
FFO to net debt	>40%	25-40%	15-25%	10-15%	6-10%	4-6%
Internal financing	>3.5	3.5-2.5	1.5-2.5	1.0-1.5	0.5-1.0	0.25-0.5
<b>Secondary metric</b>						
Dividend cover	>1	>1	>1	>1	>1	>1

In determining our recommended range, we recognised that weakness of one factor does not completely offset strength of another. We also took account of the asymmetric weighting adopted by Moody's (see Table 3.4). Had the weightings not been altered to reflect poor outcomes, it is likely that the financeability assessment would have extended the appropriate range for financial metrics to the equivalent of a B rating.

## **7.4. Targeted financeability adjustments**

If the financeability assessment indicates that a regulated water service provider has short term financeability constraints, the next step is to determine whether a cashflow adjustment is warranted, as discussed in section 2.2.3.

### **7.4.1. Appropriateness of a cash flow adjustment**

If the cause of a financeability constraint is determined to be poor management practices such as excessive gearing or imprudent financial decisions, in our opinion, the financeability constraint is the responsibility of the owners/management and should be addressed accordingly, ie, by the owners/management.

It follows that, in our opinion, a cashflow adjustment is not appropriate when a financeability constraint is caused by poor management practices.

### **7.4.2. Implementing a cashflow adjustment**

In our opinion, this adjustment to cashflows should be made in a net present value (NPV) neutral manner. The reason for making a NPV neutral adjustment is that the Commission's building block determination ensures that the regulated water service provider revenues are sufficient to recover all costs including an appropriate return on capital. To provide a non-NPV neutral adjustment would therefore result in a regulated water service provider recovering either more, or less than its efficient costs.

There are a number of methods of making a NPV neutral cashflow adjustment, all of which have comparative advantages and disadvantages. For example, the Commission could adjust the depreciation allowances to bring forward revenues. While this would increase cashflows

in the short term, the lower regulatory values would mean that prices in the future would be lower and the net effect would be NPV neutral. Alternatively, the Commission could make an adjustment resembling an operating expense allowance, with that additional revenue being withdrawn in a NPV neutral manner from the regulated water service provider's operating expenditure allowance in future regulatory periods. In our opinion, the appropriate adjustment method should be determined by the Commission on a case-by-case basis.

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