

Deloitte Access Economics

Review of proposed 'unders' and 'overs' approach

FINAL REPORT

Australian Competition and
Consumer Commission

29 May 2014

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29 May 2014

Dear Darren

Re: Deloitte review of proposed 'unders' and 'overs' approach

Please find attached our final report setting out the findings of our review of the ACCC's proposed 'unders' and 'overs' approach.

Please don't hesitate to contact me (03 9671 6648) or Rob Ball (03 9681 7618) if you have any queries.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Paul Liggins', with a checkmark at the end.

Paul Liggins
Director
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Key findings

- We have reviewed State Water's historical and forecast financial performance using a range of metrics, including in particular the three metrics used by IPART to assess the financeability of water businesses that results from its pricing determinations;
- State Water's financial performance over the 2006-07 to 2012-13 period was reasonable, despite extremely low sales volumes in early years. It was able to ride out poor EBIT and cash flows in the low years, in particular in 2008-09 when net operating cash flow was negative. This was primarily because its low opening debt allowed it to fund capital expenditure from borrowings rather than internal sources. However this same flexibility may not exist in the future due to State Water's higher gearing going into the next regulatory period;
- We estimate that the 'unders' and 'overs' mechanism would have led to approximately \$3.1 million less revenue (0.6 per cent of total revenue) between 2010-11 and 2012-13 had it been in place instead of IPART's volatility allowance. This is primarily due to the return to more normal levels of water extractions over this period after years of drought. Nonetheless, the impact of the 'unders' and 'overs' mechanism on State Water's financial outcomes over this period would have been minimal;
- Based on projections of State Water's financial outcomes from 2013-14 to 2020-21, under a low demand scenario:
 - The ACCC's 'unders' and 'overs' mechanism allows for financial performance that is generally considered sound. While debt generally increases over the period it remains within boundaries considered acceptably by IPART. Similarly, net operating cash flows are positive, with net operating cash flow metrics well within the IPART boundaries;
 - State Water's preferred approach to adjusting prices produces slightly better financial performance over this period, with EBIT improving by up to \$8 million in some years, and lower debt;
 - Under a 'worst case' scenario with no within-period adjustments, State Water's financial performance remain within the IPART benchmarks, with debt-to-RAB remaining low and EBIT positive.
- Under a high demand scenario, State Water's financial performance from 2013-14 to 2020-21 is projected to be sound under all three price adjustment mechanisms;
- State Water has provided modelling of its financial performance indicating outcomes that do not fall within acceptable bounds with respect to debt levels and cash flow in some years. However, we have been unable to verify this analysis as State Water indicated that for confidentiality and intellectual property reasons it was not willing to provide a working model;

- We consider it unlikely, however, that State Water's financial viability will be placed at risk by the ACCC's proposed 'unders' and 'overs' mechanism because:
 - A three-year regulatory provides a measure of risk mitigation by allowing any changes in State Water's operating environment to be reviewed in the relatively short-term and reflected in its future revenue requirements and service standards;
 - The availability of water resources is currently sound, with key storages supplying NSW – Hume, Dartmouth and Blowering Dams – at 64% of total capacity. Coupled with the ACCC's proposal to forecast water extractions using a 20-year moving average, it is likely that water extractions in 2014-15 will at least be above the average of the previous 20 years (which has been used to set prices); and
 - State Water's projected debt at the start of the next regulatory period – approximately 30 per cent of its Regulated Asset Base – is significantly below IPART's benchmark level. Should actual water extractions be less than forecast, there is scope for State Water to increase its gearing to fund its capital programs, or cut back dividends, in order to 'ride out' periods of low extractions.

1 Introduction

1.1 Background

The Australian Competition and Consumer Commission (ACCC) is currently conducting a review of State Water's regulated charges in the Murray-Darling Basin for the 2013-14 to 2016-17 regulatory period.

In its submission to the ACCC, State Water's proposed form of price control was a revenue cap with a 15 per cent 'rebalancing constraint' to limit annual price movements. State Water also proposed to transition from its current 40/60% fixed-to-variable tariff structure to an 80/20% fixed-to-variable tariff structure by 2016-17.

The ACCC determined in its draft decision that a price cap should apply to State Water, with an 'unders' and 'overs' adjustment mechanism to adjust prices within the regulatory period to account for any under- or over-recovery. The ACCC also determined that State Water's 40/60% tariff structure should be maintained over the regulatory period.

In its response to the ACCC's draft decision, State Water claimed that the ACCC's proposed form of price control and tariff structure would adversely impact its financial viability if less than average water extractions take place over the upcoming regulatory period. State Water provided financial modelling showing forecast financial outcomes it considers to be unsustainable, in particular a reduction in its credit rating and increases in its gearing ratio.

The ACCC has engaged Deloitte Access economics (DAE) to perform an independent analysis of State Water's projected financial viability under the ACCC's proposed 'unders' and 'overs' price adjustment mechanism.

1.2 Scope

The scope of our engagement is to model and analyse State Water's:

1. Actual financial performance from 2006-07 to 2012-13 and the relationship between financial performance and volume of water sales;
2. Financial performance from 2006-07 to 2012-13 with the ACCC's proposed unders/overs account in place instead of IPART's revenue volatility allowance;
3. Projected performance from 2014-15 to 2020-21 under two water extraction (demand) scenarios (high and low) with each of the following price adjustment mechanisms in place:
 - The ACCC's proposed 'unders' and 'overs' approach;
 - State Water's preferred 'unders' and 'overs' approach; and

- An end of period adjustment mechanism.

The demand scenarios and price adjustment mechanisms underpinning our analysis are described in section 1.3.3.2.

1.3 Approach

1.3.1 Financial viability

There are a range of measures that can be used to assess financial outcomes. Typically these measures are selected depending on factors including

- Data availability
- The existence of benchmarking and peer information
- Views on the 'most important' measures

Financial measures can be rolled up into a single 'credit metric', as is typically undertaken by credit ratings agencies such as Standard and Poor's or Moody's Investor Services. However, with the exception of when an entity runs out of funds to pay its obligations, there is ultimately no single tipping point or credit metric at which it can be said that any business becomes 'financially unviable' or reaches an 'unsustainable' financial position.

It is also worth noting that when a credit ratings agency considers the credit worthiness of a regulated water entity, financial metrics only comprise an element of the assessment process. For example, under the Moody's approach credit metrics are only 40% of the assessment, with regulatory environment/asset ownership model, operational characteristics and asset risk, and stability of business model and financial structure making up the other 60%. Indeed the equal most important element is the 'stability and predictability of the regulatory environment'.¹

We have assessed State Water's historical and projected financial viability using the following financial metrics (refer to Appendix A for definitions of these metrics).

- EBIT;
- Total assets;
- Return on average assets;
- Return on average equity;
- Indicative credit rating (projections only);

¹ Moody's Investor Services, Infrastructure Finance – Global Regulated Water Utilities, December 2009 p.7.

- Gearing level;²
- Total debt;
- Total debt to Regulated Asset Base (RAB);
- Total debt to total assets;
- Net operating cash flow;
- Net operating cash flow to total debt;
- Net operating cash flow to interest;
- Internal financing ratio;
- Interest cover EBIT; and
- Indicative credit ratings.

The Independent Pricing and Regulatory Tribunal (IPART) recently released a final research paper on financeability tests in price regulation³ in which it indicated that the three key measures it would have regard to are:

- Net operating cash flow to interest – which measures a utility's ability to service its debt
- Total debt to Regulated Asset Base (RAB) – which also measures a utility's ability to repay its debt
- Net operating cash flow to total debt – which is a more dynamic measure of leverage and an indicator of a utility's ability to generate cash flows.

These measures will be used by IPART across water utilities and retail energy businesses in IPART's price determinations, as well as certain reviews under section 9 of the IPART Act. The objective is to ensure that utilities have the ability to raise finance, consistent with an investment grade-rated firm, during the regulatory period.

IPART indicated it would seek to ensure that the actual (rather than notional) financial outcomes will equal or exceed the benchmark ratios of a (Moody's rated) Baa2 firm as shaded in the table below.

Table 1.1: IPART financial ratio benchmarks

Financial metric	A3	Baa1	Baa2	Baa3	Ba1
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² We have defined gearing level as total debt divided by total equity, consistent with State Water's calculation of this metric.

³ IPART, Financeability tests in price regulation, Final decision, December 2013

Financial metric	A3	Baa1	Baa2	Baa3	Ba1
Net operating cash flow/Interest ⁴	>2.9	2.3-2.9	1.7-2.5	1.4/1.5-1.7	<1.4/1.5
Total debt/RAB	<60%	80-85%	60-91%	90%-100%	>100%
Net operating cash flow/ total debt	>10%	>10%	>6-10%	5-8%	<4%

Source: State Water 2006-07, 2007-08, 2008-09, 2010-11 and 2012-13 annual reports; Deloitte analysis

We have therefore placed weight on these ratios in our analysis, particularly in respect of State Water's forecast performance.

1.3.2 Historical analysis

To carry out our analysis of State Water's actual performance between 2006-07 and 2012-13 (i.e. scope item 1), we calculated financial metrics using financial information extracted directly from State Water's annual reports over this period.

We also determined State Water's financial outcomes between 2006-07 and 2012-13 assuming the ACCC's 'unders' and 'overs' adjustment mechanism was in place instead of the IPART revenue volatility allowance (i.e. scope item 2). This involved the following key steps:

1. Estimating the 'unders' and 'overs' adjustment that would have been made to each year's revenue allowance as a percentage of revenue requirement;
2. Applying this percentage to each year's actual revenue to develop an alternative time series of actual revenue;
3. Developing an adjusted set of financial statements by assuming that the impact on actual revenue from the application of the 'unders' and 'overs' was reflected in the following financial items:
 - Interest revenue;
 - Profit before tax;
 - Tax expense;
 - Profit after tax;
 - Cash and cash equivalents;
 - Trade and other receivables;
 - Dividend payable;
 - Retained earnings; and
 - Receipts from customers.

⁴ Referred to as 'Interest-cover cash' throughout this report

4. Calculating financial metrics using the adjusted set of historical financial statements.

1.3.3 Projections

1.3.3.1 Models

Our analysis of State Water's **projected** performance from 2014-15 to 2020-21 (i.e. scope item 3) relied upon the following two models:

- The ACCC's 'unders' and 'overs' model (UOM);
- State Water's regulatory building block model (SWBBM);

We note that the version of the SWBBM used in our analysis was submitted to the ACCC by State Water at the beginning of the regulatory review process and therefore did not reflect State Water's most recent financial projections. While we sought State Water's most up-to-date working financial model State Water indicated that for confidentiality and intellectual property reasons it was not willing to provide it.

A large part of our work relies on models provided by State Water and the ACCC. While we have considered the robustness of the UOM and the SWBBM and the assumptions inherent in these models as part of our work, we have not undertaken an audit, review or testing of these models in accordance with generally accepted auditing standards. Thus, to the extent there are errors, inconsistencies or inaccuracies in the UOM or the SWBBM, our work may be compromised accordingly. Similarly, our work assumes that data provided by the ACCC and State Water is true and correct.

The UOM was used to forecast revenue under the scenarios explained further in section 1.3.3.2. In developing our revenue forecasts we adjusted a number of the model's assumptions (explained in section 1.3.3.3).

Using the revenue forecasts from the UOM, we used the SWBBM to assess the impact of each scenario on State Water's financial performance. Section 1.3.3.3 outlines the changes we made to the SWBBM in order to perform our analysis.

1.3.3.2 Scenarios

Demand scenarios

Demand for irrigated water is strongly dependent on water availability, which in turn is a function of past weather conditions. Due to the difficulty inherent in forecasting weather conditions and therefore water demand over regulatory periods, we have projected State Water's financial outcomes under low and high demand scenarios.

These scenarios are designed to represent the 'worst' and 'best' case scenarios with respect to State Water's water sales and revenue and therefore form lower and upper bounds to its potential financial outcomes (holding other factors constant) over the forecast period.

The scenarios were determined as follows:

- The **low demand** assumes water extractions equal to those that occurred from 2004-05 to 2010-11, the lowest consecutive seven-year period between 1992-93 and 2012-13. This period includes water extractions of just over 1,000 GL in 2007-08, the lowest on record and approximately 20% of long-term average water sales.⁵ Total extractions over this period in the eight ACCC regulated valleys – Border, Gwydir, Namoi, Peel, Macquarie, Lachlan, Murrumbidgee and Murray – were 16,534 ML;
- The **high demand** assumes water extractions equal to those that occurred from 1995-96 to 2001-02, the highest consecutive seven-year period between 1992-93 and 2012-13. Total extractions over this period in the eight ACCC regulated valleys – Border, Gwydir, Namoi, Peel, Macquarie, Lachlan, Murrumbidgee and Murray – were 40,442 ML.

Refer to Appendix A for the data underlying each demand scenario.

Price adjustment mechanisms

For each demand scenario, we have projected State Water's financial performance assuming each of the following price adjustment mechanisms are in place over the next regulatory period:

- The **ACCC's proposed 'unders' and 'overs' approach**, which involves adjusting each year's revenue requirement by an amount equal to the rate of return (WACC) multiplied by the balance in the 'unders' and 'overs' account. The balance of this account in a given year is equal to the sum of any unders and overs occurring in the preceding years of the regulatory period.
- **State Water's preferred 'unders' and 'overs' approach**, which involves adjusting each year's revenue requirement by an amount equal to the rate of return (WACC) multiplied by the balance in the 'unders' and 'overs' account *plus* an amount equal to 1/10th of the balance. The balance of this account in a given year is equal to the sum of any unders and overs occurring in the preceding years of the regulatory period.
- An **end of period adjustment mechanism**, which involves all 'unders' and 'overs' in a given regulatory period being carried through to the next regulatory period, resulting in an proportionate adjustments to the revenue requirements determined for the next regulatory period to reflect the amount of under- or over-recovery in the preceding period.

To reflect the ACCC's draft decision with respect to prices in the Peel valley, we have not applied the above price adjustment mechanisms to forecast prices and revenue in this valley and have instead increased prices annually by 10% in real terms.

1.3.3.3 Assumptions

UOM

The following changes were made to the assumptions contained in the UOM:

⁵ State Water (2008) *07-08 Annual Report*, p.9

- WACC – we have assumed a real pre-tax WACC of 4.82 per cent, equal to the ACCC's draft decision WACC;
- Inflation – from 2014-15 to 2016-17 we have assumed inflation equal to the ACCC's draft decision inflation forecast, while from 2017-17 onwards we have assumed inflation of 2.5 per cent, equal to the midpoint of the Reserve Bank of Australia's inflation target;
- Revenue requirements; we have assumed revenue requirements equal to those determined by the ACCC in its draft decision, adjusted for inflation using the above inflation assumptions;
- Water extractions:
 - For estimating revenue in each year of the forecast, we have assumed extractions equal to the demand scenarios described in section 1.3.3.2;
 - For annual price calculations, we assumed a 20-year moving average, as per the approach proposed in the ACCC's draft decision;
- Fish River and Lowbidgee cost recovery – we have assumed full cost recovery for these valleys, consistent with State Water's projections of its financial viability; and
- State Water's preferred approach – we have modelled State Water's preferred approach to price adjustments as returning 1/10th of the 'unders' and 'overs' account balance, however we have not applied any CPI indexation to this balance to reflect the fact that the revenue requirements are in nominal dollars.

SWBBM

In addition to adjusting the revenue inputs in the SWBBM to reflect revenue forecasts generated by the UOM, we also made the following changes to the model:

- The interest rate was reduced from 9 per cent to 8.26 per cent to reflect State Water's actual cost of borrowing;
- Due to large variances between the figures provided in State Water's response to the ACCC's information request and the existing figures in the SWBBM, the values for the following financial items were set equal to those in State Water's response:
 - Regulated expenses;
 - Non-regulated expenses;
 - Non-regulated revenue;
 - Regulated capital expenditure; and
 - Non-regulated capital expenditure;

- The amount of the MDBA pass-through from 2014-15 to 2020-21 was assumed to be equal to the amount in 2013-14 in real terms;
- To reflect the ACCC's proposed form of price control, the full amount of any under-or over-recovery of MDBA costs was assumed to be recovered the following year; and
- Revenue requirements for IPART-regulated valleys were assumed to be equal to the revenue forecasts included in the SWBBM.

We note that despite these adjustments, our projected financial outcomes (set out in chapter 3) are quite different from the financial outcomes in State Water's response to the ACCC's information request (set out in section 3.2). While both analyses used different demand forecasts, both forecasts reflected a 'low' extractions scenario, suggesting that the variation between the two projections of financial performance are primarily explained by differences in revenue and expense items and other underlying assumptions.

Key differences between the two projections of financial outcomes over the next regulatory period include:

- EBIT of -\$8 million in 2014-15 in State Water's analysis, compared with \$44 million in our analysis;
- Large differences in return on average equity across the period;
- A gearing ratio of 74% in 2016-17 in State Water's analysis, compared with 61.1% in our analysis; and
- Indicative credit rating of BB+ in each year of the period in State Water's analysis, compared with ratings of A, A and BBB in our analysis.

Refer to section 3.2 for further discussion of State Water's projections.

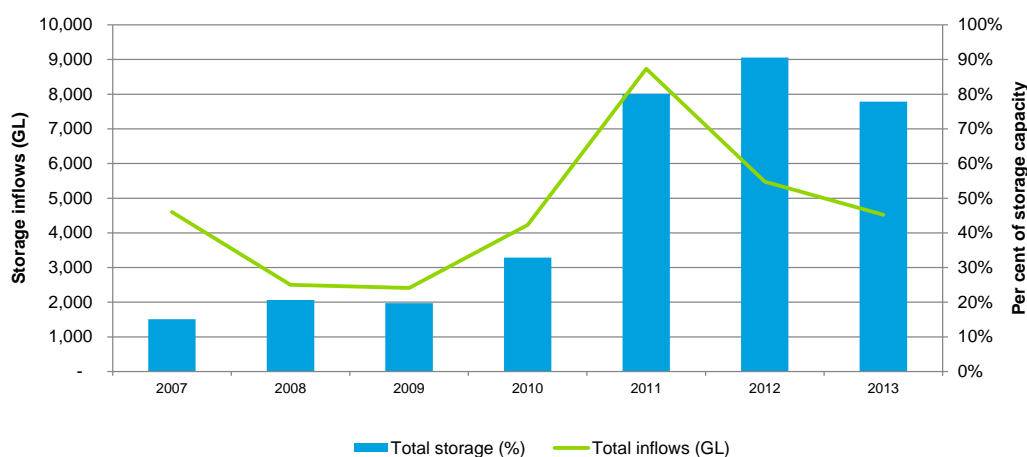
2 Historical financial performance

This chapter sets out our analysis of State Water's financial performance over the 2006-07 to 2009-10 and 2010-11 to 2013-14 regulatory periods, excluding 2013-14 as actual data was not available for this year. Key to this discussion is the relationship between water extractions and State Water's financial performance.

2.1 Resource availability

2006-07 to 2012-13 was characterised by significant variation in weather conditions, including the worst years of the drought. This contributed to a marked difference in water availability between the start and end of this period. The following figure shows inflows to storages and storage levels at three major storages supplying NSW – Hume Dam, Dartmouth Dam and Blowering Dam – from 2006-07 to 2012-13.

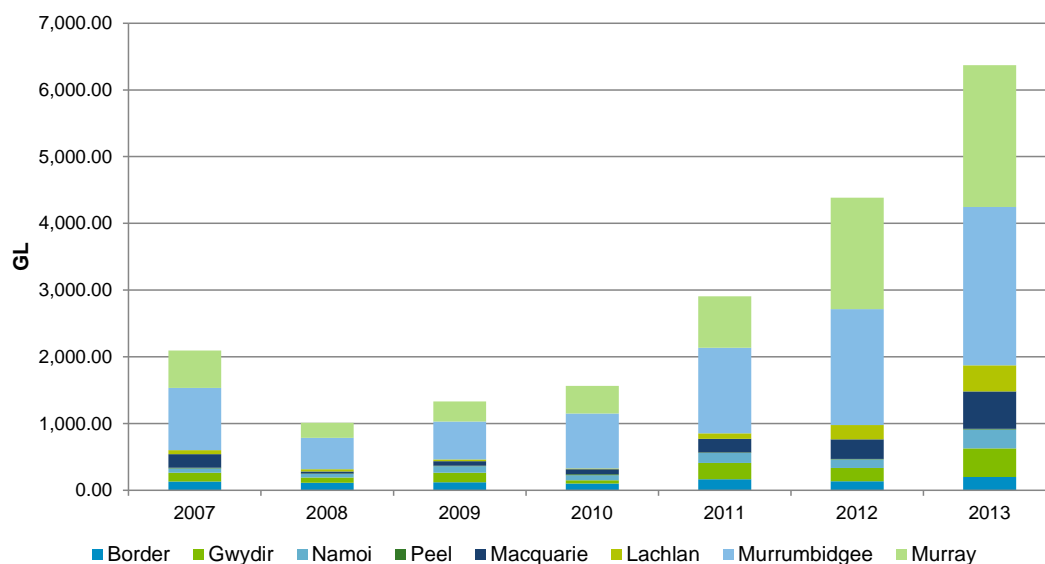
Figure 2.1: Storage levels as at 30 June and inflows to major storages supplying NSW, 2006-07 to 2012-13



Source: Deloitte analysis

The improvement in water availability from 2010-11 led to a stark increase in water allocations for State Water customers and consequently increases in water extractions.

Figure 2.2: Water extractions, ACCC regulated valleys (excluding Lowbidgee and Fish River), 2006-07 to 2012-13



Source: Deloitte analysis

2.2 Historical financial performance

2.2.1 Actual performance

The tables below sets out State Water's financial metrics during the 2006-07 to 2009-10 regulatory period and the first three years of the 2010-11 to 2013-14 regulatory period (the years where data on actual performance is available).

Because large (positive and negative) impairment adjustments to asset values took place in some years of the time series (e.g. \$46.9 million negative adjustment in 2008-09), we have calculated metrics with and without impairment to improve comparability between years with respect to financial performance.

The below financials include a revenue volatility allowance of \$2.2 million per annum (in \$2013-14) from 2010-11 to 2012-13, as determined by IPART.

Note that the shaded metrics in the tables presented in this section are the IPART endorsed metrics and are therefore the focus of our analysis.

Table 2.1: State Water's actual financial performance, 2006-07 to 2009-10

Financial metric	2006-07	2007-08	2008-09	2009-10
EBIT (\$'000)	10,519	1,549	-45,366	63,354
EBIT excl. impairment (\$'000)	10,519	1,549	1,576	8,260
Total assets (\$'000)	443,101	443,530	442,343	592,916
Return on average assets	2.46%	0.35%	-10.24%	12.24%
Return on average assets excl. impairment	2.46%	0.35%	0.36%	1.60%
Return on average equity	3.28%	0.46%	-13.81%	18.32%

Financial metric	2006-07	2007-08	2008-09	2009-10
Return on average equity excl. impairment	3.28%	0.46%	0.48%	2.39%
Total debt (\$'000)	39,197	39,055	54,226	107,911
Gearing level	11.61%	11.74%	16.71%	29.38%
Total debt / total assets	8.85%	8.81%	12.26%	18.20%
Net operating cash flow (\$'000)	24,639	17,609	1,485	26,746
Net operating cash flow / total debt	62.86%	45.09%	2.74%	24.79%
Internal financing ratio	1.61	0.50	-0.12	0.36
Interest cover-cash	14.22	11.23	0.51	4.52
Interest cover EBIT	10.97	0.99	-17.04	22.25
Interest cover EBIT excl. impairment	10.97	0.99	0.59	2.90

Source: State Water 2006-07, 2007-08, 2008-09, 2010-11 and 2012-13 annual reports; Deloitte analysis

Table 2.2: State Water's actual financial performance, 2010-11 to 2012-13

Financial metric	2010-11	2011-12	2012-13
EBIT (\$'000)	31,945	41,065	39,570
EBIT excl. impairment (\$'000)	32,002	41,075	62,427
Total assets (\$'000)	681,626	754,326	804,960
Return on average assets	5.01%	5.72%	5.08%
Return on average assets excl. impairment	5.02%	5.72%	8.01%
Return on average equity	8.67%	11.14%	10.54%
Return on average equity excl. impairment	8.68%	11.14%	16.63%
Total debt (\$'000)	151,167	157,971	158,664
Gearing level	40.88%	43.00%	41.41%
Total debt / total assets	22.18%	20.94%	19.71%
Net operating cash flow (\$'000)	42,708	52,724	94,387
Net operating cash flow / total debt	28.25%	33.38%	59.49%
Internal financing ratio	0.44	0.54	1.51
Interest cover-cash	3.70	3.99	7.25
Interest cover EBIT	7.75	4.96	4.40
Interest cover EBIT excl. impairment	7.76	4.97	6.95

Source: State Water 2006-07, 2007-08, 2008-09, 2010-11 and 2012-13 annual reports; Deloitte analysis

Key points to note:

- There is a clear relationship between extractions and financial performance. Financial performance was particularly poor from an EBIT and cash flow perspective in the years with the lowest extractions;
- In these drought years some of the balance sheet-based indicators such as debt and gearing were generally sound, primarily because State Water's debt was very low in 2006-07;
- State Water's financial outcomes generally improved between 2009-10 and 2012-13 in line with the increase in water extractions. EBIT excluding impairment increased from \$9.1 million in 2009-10 to \$32.5 million in 2010-11, corresponding with the increase in extractions. EBIT excluding impairment increased to more than \$40 million in 2011-12 and 2012-13, aligning with further increases in water sales;

- Higher water sales also improved State Water's cash flow, with its net operating cash flow increasing from -\$1.4 million in 2009-10 to \$31.2 million in 2010-11 before more than doubling to \$81.4 million in 2012-13;
- Both net operating cash flow to total debt and interest cover-cash remained well above IPART benchmarks throughout the period, except for 2008-09 when cash flow was negative;
- State Water's internal financing ratio was low between -0.2 and 0.4 from 2007-08 to 2011-12. This was despite low capital expenditure between 2006-07 and 2008-09 of \$59.6 million in total, compared with \$75.1 million and \$90.6 million in 2009-10 and 2010-11, respectively (not shown in table); and
- Hence it appears that up until 2011-12, State Water funded capex primarily from debt, with debt increasing significantly as a result. This is reflected in its gearing level increasing from 11.6% in 2006-07 to 40.9% by 2010-11.

In summary, State Water's financial performance over the 2006-07 to 2012-13 period was reasonable, despite extremely low sales volumes in early years. It was able to ride out poor EBIT and cash flows in the low years, in particular in 2008-09 when net operating cash flow was negative. This was primarily because its low opening debt allowed it to fund capital expenditure from borrowings rather than internal sources. However this same flexibility may not exist in the future due to State Water's higher gearing going into the next regulatory period.

2.2.2 Performance with 'unders' and 'overs'

The below table sets out State Water's financial metrics between 2010-11 and 2012-13 assuming the ACCC's 'unders' and 'overs' approach was in place instead of IPART's volatility allowance. Accordingly, revenue associated with the volatility allowance has been removed from actual revenue, while revenue resulting from 'under' and 'overs' adjustment has been added.

As IPART did not apply a price adjustment mechanism during the 2006-07 to 2009-10 regulatory period, we have not included this period in the analysis.

As with the analysis above, metrics have been calculated with and without impairment to improve comparability between years.

Our estimate is that the 'unders' and 'overs' mechanism would have led to approximately \$3.1 million less revenue between 2010-11 and 2012-13, or 0.6% of total revenue of \$483.3 million. Note that that this includes an unders and overs adjustment in 2010-11 for under-recovery in 2009-10 (i.e. when there was no volatility allowance) to ensure three-years of comparable data.

Accordingly, the impact of the 'unders' and overs' mechanism on State Water's financial outcomes over this period would have been minimal, with small reductions to the following metrics taking place:

- EBIT;

- Total assets;
- Net operating cash flow;
- Net operating cash flow to interest;
- Internal financing ratio; and
- All interest cover ratios.

Table 2.3: State Water's financial performance with 'unders' and 'overs', 2010-11 to 2012-13

Financial metric	2010-11	2011-12	2012-13
EBIT (\$'000)	31,575	39,930	37,686
EBIT excl. impairment (\$'000)	31,632	39,940	60,543
Total assets (\$'000)	681,367	753,258	802,541
Return on average assets	4.96%	5.57%	4.84%
Return on average assets excl. impairment	4.96%	5.57%	7.78%
Return on average equity	8.57%	10.85%	10.06%
Return on average equity excl. impairment	8.58%	10.85%	16.16%
Total debt (\$'000)	151,167	157,971	158,664
Gearing level	40.89%	43.09%	41.48%
Total debt / total assets	22.19%	20.97%	19.77%
Net operating cash flow (\$'000)	42,314	51,458	92,236
Net operating cash flow / total debt	27.99%	32.57%	58.13%
Internal financing ratio	0.43	0.52	1.48
Interest cover-cash	3.67	3.88	7.06
Interest cover EBIT	7.66	4.82	4.17
Interest cover EBIT excl. impairment	7.67	4.82	6.70

Source: State Water 2006-07, 2007-08, 2008-09, 2010-11 and 2012-13 annual reports; Deloitte analysis

We note that had the volatility allowance been in place between 2006-07 and 2009-10 when water availability and extractions were substantially lower, it is likely both mechanisms would have resulted in similar revenue outcomes. This is because the accumulated balance on the 'unders' and 'overs' account would have resulted in increases to the following year's revenue requirement of a similar quantum to the volatility allowance.

For example, State Water's actual revenue in 2006-07 of \$32.6 million was \$23.1 million less than its revenue requirement of \$55.7 million. Based on the real pre-tax WACC of 6.5% determined by IPART, this shortfall would have translated to an increase to the 2007-08 revenue requirement of \$2.1 million, approximately equal to the volatility allowance determined by IPART from 2010-11.

3 Projected financial performance

This chapter sets out our projections of State Water's financial performance over the upcoming 2014-15 to 2016-17 and 2017-18 to 2020-21 regulatory periods under the demand and price adjustment mechanism scenarios discussed in section 1.3.3.2. We also provide commentary of State Water's forecast financial outcomes.

As stated in section 1.3.3.2, to reflect the ACCC's draft decision with respect to prices in the Peel valley, we have not applied any price adjustment mechanism to forecast prices and revenue in this valley and have instead increased prices annually by 10% in real terms.

3.1 Financial performance

3.1.1 Low demand scenario

This section sets out our projections of State Water's financial performance under the low demand scenario using the ACCC's 'unders' and 'overs' approach, State Water's preferred approach and an end of period adjustment approach.

It should be noted that key storages supplying NSW - Hume Dam, Dartmouth Dam and Blowering Dam – were at 64% of total capacity as at 21 May 2014.⁶

Note that the shaded metrics in the tables presented in this section are the IPART endorsed metrics and are therefore the focus of our analysis.

3.1.1.1 ACCC 'unders' and 'overs' approach

Table 3.1: State Water's projected financial performance with ACCC 'unders' and 'overs', low demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	43,623	59,257	52,303
Total assets (\$'000)	999,091	1,117,228	1,198,130
Return on average assets	4.59%	5.60%	4.52%
Return on average equity	10.44%	13.21%	10.87%
Total debt (\$'000)	267,496	299,284	304,269
Gearing level	61.90%	64.34%	61.16%
Total debt / total assets	26.77%	26.79%	25.40%
Total debt / RAB	29.87%	30.97%	30.29%
Net operating cash flow (\$'000)	106,824	105,782	114,555
Net operating cash flow / total debt	0.40	0.35	0.38
Internal financing ratio	0.80	0.87	1.16
Interest cover cash	6.89	5.76	5.79
Interest cover EBIT	2.06	2.47	2.06
Indicative credit rating - Moody's	Baa3	Baa3	Baa3

⁶ <http://waterinfo.nsw.gov.au/>, last accessed 22 May 2014

Financial metric	2014-15	2015-16	2016-17
Indicative credit rating - S&P	A	A	BBB

Source: Deloitte analysis

Table 3.2: State Water's projected financial performance with ACCC 'unders' and 'overs, low demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	51,540	61,567	64,076	86,569
Total assets (\$'000)	1,281,215	1,335,005	1,360,541	1,377,001
Return on average assets	4.16%	4.71%	4.75%	6.32%
Return on average equity	10.03%	11.26%	11.01%	13.96%
Total debt (\$'000)	355,971	377,991	370,136	332,589
Gearing level	67.19%	66.99%	61.73%	51.92%
Total debt / total assets	27.78%	28.31%	27.21%	24.15%
Total debt / RAB	33.90%	35.29%	33.86%	29.83%
Net operating cash flow (\$'000)	66,844	67,950	71,794	88,803
Net operating cash flow / total debt	0.19	0.18	0.19	0.27
Internal financing ratio	0.64	1.04	2.25	5.34
Interest cover cash	3.02	2.69	2.77	3.66
Interest cover EBIT	1.85	1.99	2.03	2.89
Indicative credit rating - Moody's	Baa2	A3	A1	Aa2
Indicative credit rating - S&P	BBB	A	A	AA

Source: Deloitte analysis

Key observations:

- Under this scenario debt generally increases over the period (although it declines at the end in line with higher volumes) but remains relatively low compared to the RAB, and within the IPART boundaries;
- Similarly, net operating cash flows are positive with the net operating cash flow metrics both well within the IPART boundaries;
- Financial performance can generally be considered to be sound.

3.1.1.2 State Water's preferred approach

Table 3.3: State Water's projected financial performance with State Water's preferred approach, low demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	43,623	60,313	53,285
Total assets (\$'000)	999,091	1,117,401	1,198,292
Return on average assets	4.59%	5.70%	4.60%
Return on average equity	10.44%	13.44%	11.06%
Total debt (\$'000)	267,496	298,526	303,007
Gearing level	61.90%	64.14%	60.85%
Total debt / total assets	26.77%	26.72%	25.29%
Total debt / RAB	29.87%	30.89%	30.16%
Net operating cash flow (\$'000)	106,824	106,522	115,515

Financial metric	2014-15	2015-16	2016-17
Net operating cash flow / total debt	0.40	0.36	0.38
Internal financing ratio	0.80	0.88	1.16
Interest cover cash	6.89	5.80	5.86
Interest cover EBIT	2.06	2.51	2.10
Indicative credit rating - Moody's	Baa3	Baa3	Baa3
Indicative credit rating - S&P	A	A	BBB

Source: Deloitte analysis

Table 3.4: State Water's projected financial performance with State Water's preferred approach, low demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	53,070	64,694	67,998	93,989
Total assets (\$'000)	1,281,466	1,335,519	1,361,185	1,378,221
Return on average assets	4.28%	4.94%	5.04%	6.86%
Return on average equity	10.32%	11.80%	11.65%	15.08%
Total debt (\$'000)	353,796	373,876	363,783	321,456
Gearing level	66.68%	66.09%	60.43%	49.86%
Total debt / total assets	27.61%	27.99%	26.73%	23.32%
Total debt / RAB	33.69%	34.91%	33.27%	28.83%
Net operating cash flow (\$'000)	68,150	70,480	75,292	95,065
Net operating cash flow / total debt	0.19	0.19	0.21	0.30
Internal financing ratio	0.65	1.07	2.32	5.64
Interest cover cash	3.10	2.81	2.95	4.02
Interest cover EBIT	1.92	2.11	2.18	3.20
Indicative credit rating - Moody's	Baa2	A3	A1	Aa2
Indicative credit rating - S&P	BBB	A	A	AA

Source: Deloitte analysis

Key observations:

- Under State Water's approach financial performance is better, particularly from 2017-18 onwards;
- EBIT improves by up to \$8m and debt is lower than under the ACCC approach;
- Again all ratios are well within the IPART benchmarks.

3.1.1.3 End of period adjustment

Table 3.5: State Water's projected financial performance with end of period adjustment, low demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	43,623	58,460	51,465
Total assets (\$'000)	999,091	1,117,097	1,197,993
Return on average assets	4.59%	5.52%	4.45%
Return on average equity	10.44%	13.03%	10.70%
Total debt (\$'000)	267,496	299,856	305,291
Gearing level	61.90%	64.48%	61.41%

Financial metric	2014-15	2015-16	2016-17
Total debt / total assets	26.77%	26.84%	25.48%
Total debt / RAB	29.87%	31.03%	30.39%
Net operating cash flow (\$'000)	106,824	105,224	113,763
Net operating cash flow / total debt	0.40	0.35	0.37
Internal financing ratio	0.80	0.86	1.15
Interest cover cash	6.89	5.72	5.73
Interest cover EBIT	2.06	2.43	2.02
Indicative credit rating - Moody's	Ba1	Baa3	Baa3
Indicative credit rating - S&P	A	A	BBB

Source: Deloitte analysis

Table 3.6: State Water's projected financial performance with end of period adjustment, low demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	54,717	63,613	64,956	86,566
Total assets (\$'000)	1,281,737	1,335,342	1,360,685	1,377,001
Return on average assets	4.41%	4.86%	4.82%	6.32%
Return on average equity	10.65%	11.62%	11.15%	13.94%
Total debt (\$'000)	354,561	375,840	367,749	330,279
Gearing level	66.89%	66.52%	61.23%	51.47%
Total debt / total assets	27.66%	28.15%	27.03%	23.99%
Total debt / RAB	33.77%	35.09%	33.64%	29.62%
Net operating cash flow (\$'000)	68,859	70,116	72,917	89,051
Net operating cash flow / total debt	0.19	0.19	0.20	0.27
Internal financing ratio	0.67	1.05	2.25	5.32
Interest cover cash	3.11	2.79	2.84	3.70
Interest cover EBIT	1.97	2.06	2.07	2.91
Indicative credit rating - Moody's	Baa1	A3	A1	Aa2
Indicative credit rating - S&P	BBB	A	A	AA

Source: Deloitte analysis

Key observations:

- This scenario represents the 'worst case' outcomes within the regulatory period;
- Nevertheless, financial outcomes are again all within the IPART benchmarks, with debt to RAB remaining low and EBIT positive.

3.1.2 High demand scenario

This section sets out our projections of State Water's financial performance under the high demand scenario using the ACCC's 'unders' and 'overs' approach, State Water's preferred approach and an end of period adjustment approach.

3.1.2.1 ACCC 'unders' and 'overs' approach

Table 3.7: State Water's projected financial performance with ACCC 'unders' and 'overs, high demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	58,734	75,075	81,592
Total assets (\$'000)	1,001,575	1,119,828	1,202,945
Return on average assets	6.17%	7.08%	7.03%
Return on average equity	14.01%	16.55%	16.60%
Total debt (\$'000)	256,390	279,245	264,757
Gearing level	58.89%	59.17%	51.83%
Total debt / total assets	25.60%	24.94%	22.01%
Total debt / RAB	28.63%	28.90%	26.35%
Net operating cash flow (\$'000)	117,654	121,174	140,226
Net operating cash flow / total debt	0.46	0.43	0.53
Internal financing ratio	0.91	0.94	1.36
Interest cover cash	7.73	7.01	7.92
Interest cover EBIT	2.81	3.27	3.49
Indicative credit rating - Moody's	A3	A2	A2
Indicative credit rating - S&P	A	AA	A

Source: Deloitte analysis

Table 3.8: State Water's projected financial performance with ACCC 'unders' and 'overs, high demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	76,279	80,050	92,703	95,885
Total assets (\$'000)	1,285,281	1,338,044	1,365,246	1,378,533
Return on average assets	6.13%	6.10%	6.86%	6.99%
Return on average equity	14.39%	14.08%	15.21%	14.68%
Total debt (\$'000)	302,957	314,675	287,141	244,799
Gearing level	55.18%	53.48%	45.51%	36.25%
Total debt / total assets	23.57%	23.52%	21.03%	17.76%
Total debt / RAB	28.85%	29.38%	26.26%	21.96%
Net operating cash flow (\$'000)	92,238	87,552	97,115	103,526
Net operating cash flow / total debt	0.30	0.28	0.34	0.42
Internal financing ratio	0.76	1.14	2.79	5.20
Interest cover cash	4.94	4.22	4.80	5.94
Interest cover EBIT	3.14	3.03	3.58	4.15
Indicative credit rating - Moody's	A1	Aa3	Aa2	Aa2
Indicative credit rating - S&P	AA	AA	AA	AAA

Source: Deloitte analysis

Under this scenario, financial performance is sound across the period. As this is the case with all high demand scenarios, we have therefore not provided comments on any of the other high demand scenarios.

3.1.2.2 State Water's preferred approach

Table 3.9: State Water's projected financial performance with State Water's preferred approach, high demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	58,734	74,572	79,524
Total assets (\$'000)	1,001,575	1,119,745	1,202,605
Return on average assets	6.17%	7.03%	6.85%
Return on average equity	14.01%	16.44%	16.19%
Total debt (\$'000)	256,390	279,617	266,616
Gearing level	58.89%	59.26%	52.25%
Total debt / total assets	25.60%	24.97%	22.17%
Total debt / RAB	28.63%	28.93%	26.54%
Net operating cash flow (\$'000)	117,654	120,811	138,555
Net operating cash flow / total debt	0.46	0.43	0.52
Internal financing ratio	0.91	0.94	1.35
Interest cover cash	7.73	6.98	7.80
Interest cover EBIT	2.81	3.25	3.39
Indicative credit rating - Moody's	A3	A2	A2
Indicative credit rating - S&P	A	A	A

Source: Deloitte analysis

Table 3.10: State Water's projected financial performance with State Water's preferred approach, high demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	73,213	77,088	89,247	91,281
Total assets (\$'000)	1,284,777	1,337,557	1,364,678	1,377,776
Return on average assets	5.89%	5.88%	6.61%	6.66%
Return on average equity	13.84%	13.59%	14.70%	14.05%
Total debt (\$'000)	306,802	320,258	294,961	255,777
Gearing level	56.00%	54.61%	46.96%	38.09%
Total debt / total assets	23.88%	23.94%	21.61%	18.56%
Total debt / RAB	29.22%	29.90%	26.98%	22.94%
Net operating cash flow (\$'000)	89,401	84,565	93,762	99,139
Net operating cash flow / total debt	0.29	0.26	0.32	0.39
Internal financing ratio	0.74	1.11	2.73	5.02
Interest cover cash	4.74	4.01	4.52	5.47
Interest cover EBIT	2.99	2.88	3.38	3.83
Indicative credit rating - Moody's	A1	Aa3	Aa2	Aa2
Indicative credit rating - S&P	A	AA	AA	AAA

Source: Deloitte analysis

3.1.2.3 End of period adjustment

Table 3.11: State Water's projected financial performance with end of period adjustment, high demand scenario, 2014-15 to 2016-17

Financial metric	2014-15	2015-16	2016-17
EBIT (\$'000)	58,734	75,455	83,236

Financial metric	2014-15	2015-16	2016-17
Total assets (\$'000)	1,001,575	1,119,891	1,203,215
Return on average assets	6.17%	7.11%	7.17%
Return on average equity	14.01%	16.63%	16.93%
Total debt (\$'000)	256,390	278,964	263,290
Gearing level	58.89%	59.10%	51.50%
Total debt / total assets	25.60%	24.91%	21.88%
Total debt / RAB	28.63%	28.87%	26.21%
Net operating cash flow (\$'000)	117,654	121,448	141,550
Net operating cash flow / total debt	0.46	0.44	0.54
Internal financing ratio	0.91	0.94	1.38
Interest cover cash	7.73	7.03	8.02
Interest cover EBIT	2.81	3.29	3.57
Indicative credit rating - Moody's	A3	A2	A2
Indicative credit rating - S&P	A	A	A

Source: Deloitte analysis

Table 3.12: State Water's projected financial performance with end of period adjustment, high demand scenario, 2017-18 to 2020-21

Financial metric	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	69,196	74,733	86,513	91,371
Total assets (\$'000)	1,284,117	1,337,170	1,364,229	1,377,791
Return on average assets	5.56%	5.70%	6.41%	6.66%
Return on average equity	13.06%	13.18%	14.26%	14.08%
Total debt (\$'000)	307,143	321,452	297,756	258,108
Gearing level	56.05%	54.85%	47.47%	38.49%
Total debt / total assets	23.92%	24.04%	21.83%	18.73%
Total debt / RAB	29.25%	30.01%	27.23%	23.15%
Net operating cash flow (\$'000)	87,443	81,860	91,120	98,410
Net operating cash flow / total debt	0.28	0.25	0.31	0.38
Internal financing ratio	0.69	1.10	2.67	5.07
Interest cover cash	4.68	3.88	4.36	5.36
Interest cover EBIT	2.84	2.79	3.26	3.80
Indicative credit rating - Moody's	A2	A1	Aa2	Aa2
Indicative credit rating - S&P	A	AA	AA	AAA

Source: Deloitte analysis

3.2 State Water's projections

In its response to an ACCC information request, State Water provided a forecast of its financial statements from 2014-15 to 2020-21 assuming the ACCC's 'unders' and 'overs' adjustment is applied over this period. State Water provided a set of financial statements for each of the following scenarios:

- A scenario where water extractions are assumed to equal actual extractions from 2003-04 to 2012-13 without fixed repayment of any revenue shortfall;
- A scenario where water extractions are assumed to equal actual extractions from 2003-04 to 2012-13 with fixed repayment of any revenue shortfall;

- A demand scenario where water extractions are assumed to equal actual extractions from 2003-04 to 2012-13 *plus one standard deviation* without fixed repayment of any revenue shortfall; and
- A demand scenario where water extractions are assumed to equal actual extractions from 2003-04 to 2012-13 *plus one standard deviation* with fixed repayment of any revenue shortfall.

The following tables show financial metrics we calculated using State Water's forecast financial statements. As a general rule the financial performance provided by State Water is worse than under the scenarios we have modelled above. However, as State Water has not provided a working model it is difficult for us to identify key reasons for the differences.

We note that the negative EBIT result occurring in 2014-15 across all scenarios is a result of impairment of \$27.6 million and asset write-offs of \$20.3 million forecast for that year. These expenses reflect changes in the value of State Water's assets and thus are independent of the price adjustment mechanism in place.

Table 3.13: State Water's projected financial performance, 2014-15 to 2020-21 using actual extractions from 2003-04 to 2012-13, without fixed repayment of revenue shortfall

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	-7,967	46,095	43,087	54,741	37,516	43,323	44,353
Total assets (\$'000)	874,823	992,503	1,035,807	1,116,794	1,147,185	1,178,762	1,173,285
Return on average assets	-0.90%	4.94%	4.25%	5.09%	3.31%	3.73%	3.77%
Return on average equity	-2.04%	11.68%	10.47%	12.82%	8.42%	9.28%	9.07%
Total debt (\$'000)	221,726	269,127	304,802	339,945	387,977	415,785	426,926
Gearing level	58.63%	65.48%	73.95%	76.90%	86.36%	85.87%	86.41%
Total debt / total assets	25.35%	27.12%	29.43%	30.44%	33.82%	35.27%	36.39%
Total debt / RAB	29.37%	33.11%	36.25%	39.10%	43.20%	44.85%	44.64%
Net operating cash flow (\$'000)	57,812	50,677	58,573	55,289	45,205	49,032	54,549
Net operating cash flow / total debt	0.26	0.19	0.19	0.16	0.12	0.12	0.13
Internal financing ratio	0.28	0.40	0.69	0.62	0.81	1.89	3.92
Interest cover-cash	4.25	3.24	2.95	2.70	1.82	1.62	1.60

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Interest cover EBIT	-0.59	2.95	2.17	2.67	1.51	1.43	1.30

Source: State Water; Deloitte analysis

Table 3.14: State Water's projected financial performance, 2014-15 to 2020-21 using actual extractions from 2003-04 to 2012-13, with fixed repayment of revenue shortfall

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	-7,967	46,952	44,994	56,750	40,713	48,413	50,844
Total assets (\$'000)	874,823	992,503	1,035,807	1,116,794	1,147,185	1,178,762	1,173,285
Return on average assets	-0.90%	5.03%	4.44%	5.27%	3.60%	4.16%	4.32%
Return on average equity	-2.04%	11.90%	10.93%	13.29%	9.13%	10.36%	10.38%
Total debt (\$'000)	221,726	269,127	303,934	337,071	382,823	406,951	412,179
Gearing level	58.63%	65.48%	73.74%	76.23%	85.16%	83.94%	83.22%
Total debt / total assets	25.35%	27.12%	29.34%	30.18%	33.37%	34.52%	35.13%
Total debt / RAB	29.37%	33.11%	36.14%	38.77%	42.62%	43.89%	43.10%
Net operating cash flow (\$'000)	57,812	50,677	58,573	55,289	45,205	49,032	54,549
Net operating cash flow / total debt	0.26	0.19	0.19	0.16	0.12	0.12	0.13
Internal financing ratio	0.28	0.40	0.69	0.62	0.81	1.89	3.92
Interest cover-cash	4.25	3.24	2.95	2.71	1.85	1.65	1.64
Interest cover EBIT	-0.59	3.00	2.26	2.78	1.66	1.62	1.52

Source: State Water; Deloitte analysis

Table 3.15: State Water's projected financial performance, 2014-15 to 2020-21 using actual extractions from 2003-04 to 2012-13 plus one standard deviation, without fixed repayment of revenue shortfall

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	-4,723	50,319	43,982	59,322	45,752	49,719	51,419
Total assets (\$'000)	875,357	993,198	1,035,954	1,117,547	1,148,539	1,179,813	1,174,447

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Return on average assets	-0.53%	5.39%	4.33%	5.51%	4.04%	4.27%	4.37%
Return on average equity	-1.21%	12.62%	10.53%	13.60%	9.93%	10.16%	9.90%
Total debt (\$'000)	218,899	258,534	287,273	315,279	347,901	355,854	346,329
Gearing level	57.53%	62.06%	68.54%	69.53%	74.31%	69.74%	65.47%
Total debt / total assets	25.01%	26.03%	27.73%	28.21%	30.29%	30.16%	29.49%
Total debt / RAB	29.00%	31.81%	34.16%	36.27%	38.74%	38.38%	36.21%
Net operating cash flow (\$'000)	60,524	54,740	60,014	59,264	52,840	55,731	61,504
Net operating cash flow / total debt	0.28	0.21	0.21	0.19	0.15	0.16	0.18
Internal financing ratio	0.31	0.44	0.70	0.67	0.94	2.15	4.42
Interest cover-cash	4.49	3.61	3.18	3.15	2.37	2.11	2.15
Interest cover EBIT	4.21	3.87	3.76	3.47	2.91	2.65	2.55

Source: State Water; Deloitte analysis

Table 3.16: State Water's projected financial performance, 2014-15 to 2020-21 using actual extractions from 2003-04 to 2012-13 plus one standard deviation, with fixed repayment of revenue shortfall

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
EBIT (\$'000)	-4,723	50,851	45,149	60,519	47,691	52,747	55,237
Total assets (\$'000)	875,357	993,198	1,035,954	1,117,547	1,148,539	1,179,813	1,174,447
Return on average assets	-0.53%	5.44%	4.45%	5.62%	4.21%	4.53%	4.69%
Return on average equity	-1.21%	12.76%	10.80%	13.87%	10.35%	10.78%	10.62%
Total debt (\$'000)	218,899	258,534	286,734	313,511	344,768	350,488	337,435
Gearing level	57.53%	62.06%	68.41%	69.13%	73.62%	68.64%	63.70%
Total debt / total assets	25.01%	26.03%	27.68%	28.05%	30.02%	29.71%	28.73%

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total debt / RAB	29.00%	31.81%	34.10%	36.06%	38.39%	37.80%	35.28%
Net operating cash flow (\$'000)	60,524	54,740	60,014	59,264	52,840	55,731	61,504
Net operating cash flow / total debt	0.28	0.21	0.21	0.19	0.15	0.16	0.18
Internal financing ratio	0.31	0.44	0.70	0.67	0.94	2.15	4.42
Interest cover-cash	4.49	3.61	3.18	3.16	2.39	2.14	2.19
Interest cover EBIT	-0.35	3.35	2.39	3.23	2.16	2.02	1.96

Source: State Water; Deloitte analysis

Key observations:

- Under State Water's first scenario (where water extractions are assumed to equal actual extractions from 2003-04 to 2012-13 without fixed repayment of any revenue shortfall) there are some concerns with the financial position:
 - Earnings are negative in 2014-15 (as noted, due to asset impairment and write-offs);
 - Debt/RAB increases significantly over the period (by around 50%) although it stabilises in the last year;
 - Interest cover cash falls to 1.60 which is below the IPART range; and
 - Net operating cash flow to total debt falls to close to the IPART limit.
- The second scenario (low demand, with fixed repayment of revenue shortfall) provides for very similar financial outcomes to the first scenario, and again are below or at the IPART benchmarks for two of the metrics; and
- The third and fourth scenarios, which have higher demand, provide for improved and generally acceptable financial outcomes.

Appendix A

Demand scenario data

Table A 1: Water demand (ML), low scenario

	2014- 15	2015- 16	2016- 17	2017- 18	2018- 19	2019- 20	2020- 21	Total
Border	108	134	132	112	118	101	164	869
Gwydir	155	219	130	79	143	47	245	1,017
Namoi	97	141	67	51	98	75	150	679
Peel	15	15	10	9	10	18	7	83
Macquarie	64	181	205	31	65	74	203	822
Lachlan	21	112	57	31	28	12	86	347
Murrumbidgee	1,533	1,943	934	471	569	823	1,280	7,553
Murray	1,245	1,645	559	226	302	415	773	5,164
Total	3,237	4,389	2,093	1,011	1,332	1,564	2,908	16,534

Table A 2: Water demand, high scenario

	2014- 15	2015- 16	2016- 17	2017- 18	2018- 19	2019- 20	2020- 21	Total
Border	139	170	188	164	181	232	183	1,257
Gwydir	178	395	455	375	418	425	443	2,689
Namoi	98	199	323	217	247	249	280	1,612
Peel	6	6	16	6	7	10	15	65
Macquarie	199	349	404	336	386	464	546	2,684
Lachlan	385	436	414	278	285	407	440	2,645
Murrumbidgee	2,159	2,611	2,442	2,119	1,713	2,198	2,254	15,496
Murray	2,034	2,372	1,972	2,064	1,253	2,225	2,076	13,996
Total	5,198	6,537	6,214	5,558	4,489	6,210	6,236	40,442

Financial metric definitions and calculations

Financial metric	Calculation
Earnings before interest & tax (EBIT)	Revenue – expenses, excluding finance and interest expenses
Earnings before interest & tax (EBIT) excluding impairment	Revenue – expenses, excluding finance, interest and impairment expenses
Total assets	Current assets + non-current assets
Return on average assets	EBIT / average of prior and current year total assets
Return on average assets excl. impairment	EBIT excluding impairment / average of prior and current year total assets
Return on average equity	EBIT / average of prior and current year total

Financial metric	Calculation
Return on average equity excl. impairment	equity EBIT excluding impairment / average of prior and current year total equity
Total debt	Short-term + long-term borrowings
Gearing level	Total debt / total equity
Total debt to total assets ratio	Total debt / total assets
Total debt to RAB ratio	Total debt / RAB
Net operating cash flow	Cash provided by operating activities – cash paid on operating expenses
Net operating cash flow to total debt	Net operating cash flow / total debt
Net operating cash flow to interest	Net operating cash flow / net interest cash expense
Internal financing ratio	(Net operating cash flow – dividends paid) / capital expenditure
Interest cover cash	Net operating cash flow / net interest cash expense
Interest cover EBIT	EBIT / net interest expense
Interest cover EBIT excl. impairment	EBIT excluding impairment/ net interest expense
Indicative credit rating	Calculated in SWBBM according to Moody's and S&P ratings tables

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