

LOWER MURRAY WATER  
– TARIFF & OPERATING  
COST BENCHMARK  
COMPARISON – STAGE 2

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Final Report Prepared for:

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Ref: Q0378  
August 2013

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## DOCUMENT CONTROL

### CONTROL SHEET

Version/ revision No.	File name (& path)	Prepared by (author)	Reviewed by	Approved by	Version date	Security Classification
Initial	Z:/Reports/Queensland Reports/Q0378 ESC LMW Benchmarking Comparison/Report/Q03 78 ESC LMW Benchmarking Comparison Stage 2 Draft Report 20130712.docx	S Marin	D O'Neill	P Shepherd	12/07/2013	Draft for Review
Final	Z:/Reports/Queensland Reports/Q0378 ESC LMW Benchmarking Comparison/Report/Q03 78 ESC LMW Benchmarking Comparison Stage 2 Final Report 20130805.docx	S Marin	A Roberts	P Shepherd	05/08/2013	Public

### DISTRIBUTION HISTORY

Name	Location	Issued date
Mr David Heeps Chief Executive Officer Essential Services Commission	Level 37 No.2 Lonsdale Street Melbourne 3000, Australia	16/07/2013
Mr David Heeps Chief Executive Officer Essential Services Commission	Level 37 No.2 Lonsdale Street Melbourne 3000, Australia	07/08/2013

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## MANAGEMENT SUMMARY

### Background

The analysis within this report has examined in more detail the impacts on the level of water charges resulting from the pricing policy and cost allocation methodologies applied by Lower Murray Water (LMW) and Central Irrigation Trust (CIT) in high pressure water delivery systems.

This report builds on the analysis in Indec's report, titled *Lower Murray Water – Tariff and Operating Cost Benchmark Comparison*, which was completed in May 2013.

### Pricing Policies and Cost Allocation

LMW and CIT apply different pricing policies despite both businesses being subject to pricing regulation from the Australian Competition and Consumer Commission (ACCC). The ACCC effectively delegates this task to the Essential Services Commission (Commission) to determine regulated charges of infrastructure operators in Victoria.

The key pricing policy differences between LMW and CIT arise from:

- tariff structure – system based pricing is adopted by LMW whereas CIT adopts a common pricing approach;
- return of capital – LMW recovers a return of capital based on depreciation of the Regulatory Asset Base (RAB) and CIT applies a 120 year renewals annuity;
- return on capital – LMW recovers a return on capital derived from the Weighted Average Cost of Capital (WACC) and the RAB whereas CIT does not recover a return on capital;
- bulk water charges – LMW charges include a bulk water charge and CIT's charges do not include bulk water charges; and
- Government levies differ between LMW and CIT, however the impact on water charges is not very significant.

The analysis identified the application of different cost allocation methodologies between LMW and CIT. However, the analysis was unable to quantify the impacts on water charges due to insufficient data being available for the CIT delivery systems.

### Impacts on 2012/13 Water Charges

Figure A below shows a break-down of the water charges based on 100ML of usage for the four delivery systems under comparison – LMW Mildura South, LMW Robinvale, CIT High Pressure and CIT High Lift High Pressure.

The key impacts on water charges based on 100ML of usage arise from:

- return of capital which is relatively higher for the LMW systems compared to the CIT systems. The estimated return of capital for Mildura South is \$1,417 and Robinvale is \$2,837 compared to \$913 for CIT High Pressure and \$1,346 for CIT High Lift High Pressure;
- return on capital is estimated to account for \$8,445 of the Mildura South and \$6,692 for the Robinvale total charges respectively. CIT does not recover a return on capital; and
- bulk water charges account for \$1,060 of the total water charges in Mildura South and Robinvale whereas CIT's water charges do not include a bulk water charge.

Government levies differ between LMW and CIT however, as highlighted earlier, do not have a material impact on water charges.

### Key Findings

The analysis and scenario modelling undertaken in this report has demonstrated that on a comparative basis the pricing policies of LMW and CIT have a significant impact on the level of water charges.

All the factors under consideration in this report, except for Government levies, result in a relatively larger downwards adjustment to LMW

water charges when compared to CIT water charges.

Figure A includes scenario analysis to show four different comparisons to identify the impacts that the differing pricing policies have on total water charges.

The four scenarios considered by the analysis included:

- Scenario 1 – total charges excluding return on capital;
- Scenario 2 – total charges excluding return on capital and return of capital;
- Scenario 3 – total charges excluding return on capital, Government levies and bulk water charges; and

- Scenario 4 - total charges excluding return on capital, return of capital, Government levies and bulk water charges.

The most significant single impact on total water charges arises from the estimated return on capital (Scenario 1). The total adjusted charges for LMW Mildura South and LMW Robinvale are reduced by \$8,445 and \$6,692 respectively.

When the estimated return on capital is removed from LMW charges (Scenario 1), the total adjusted charges for LMW Mildura South (\$9,127) and CIT High Pressure (\$8,497) are more closely aligned. The adjusted total charges for LMW Robinvale (\$12,737) and CIT High Lift High Pressure (\$13,178) are of a similar magnitude.

**Figure A – Comparison of 2012/13 Irrigation Water Charges (100ML Usage)**

	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High	Average
Fixed charges	7,871	11,985	2,850	4,885	6,898
Variable charges	8,629	6,100	5,112	7,758	6,900
Government levies	12	284	535	535	342
Bulk water	1,060	1,060	0	0	530
<b>Total Charges</b>	<b>17,572</b>	<b>19,429</b>	<b>8,497</b>	<b>13,178</b>	<b>14,669</b>
Return of Capital	1,417	2,837	913	1,346	1,628
Return on Capital	8,445	6,692	0	0	3,784
<b>Scenario 1 - Total Charges excluding return on capital</b>	<b>9,127</b>	<b>12,737</b>	<b>8,497</b>	<b>13,178</b>	<b>10,885</b>
<b>Scenario 2 - Total Charges excluding return of/on capital</b>	<b>7,710</b>	<b>9,899</b>	<b>7,584</b>	<b>11,832</b>	<b>9,256</b>
<b>Scenario 3 - Total Charges excluding return on capital, Govt levies &amp; bulk water</b>	<b>8,055</b>	<b>11,393</b>	<b>7,962</b>	<b>12,643</b>	<b>10,013</b>
<b>Scenario 4 - Total Charges excluding return of/on capital, Govt levies &amp; bulk water</b>	<b>6,637</b>	<b>8,555</b>	<b>7,049</b>	<b>11,297</b>	<b>8,385</b>

## 1 BACKGROUND

Indec Consulting (Indec) completed, on behalf of the Essential Services Commission (the Commission), a reasonableness test of the irrigation tariffs and cost structures of the Lower Murray Water (LMW) Mildura South high pressure delivery system against comparable Australian rural water providers. Indec's report, titled *Lower Murray Water – Tariff and Operating Cost Benchmark Comparison*, was completed in May 2013.

Following on from this report (Stage 1), the Commission engaged Indec to complete additional analysis to further investigate some of the key findings (Stage 2).

### 1.1 SCOPE OF THE REVIEW

The ESC has indicated that it intends to be able to provide LMW (Rural) water customers in the Mildura South irrigation district with a view as to how LMW's tariffs and cost structures compare to peer rural water providers.

Indec has undertaken a Stage 1 reasonableness test of the irrigation tariffs and cost structures for LMW (Rural) high pressure pipeline irrigation delivery services against comparable Australian rural water providers.

The ESC has requested Indec to undertake a second stage analysis to identify how the different pricing policies and cost allocation methodologies adopted by LMW and Central Irrigation Trust (CIT) influence the level of irrigation water charges in high pressure pipeline systems.

The aim of Stage 2 is to identify to what extent the pricing policies and cost allocation methodologies adopted by LMW and CIT influence the level of irrigation water charges in the high pressure pipeline delivery systems.

The Stage 2 analysis was based on currently available information, either in the public domain or provided by LMW and CIT.

Stage 2 focuses on high pressure irrigation water delivery systems and involves:

- Undertaking an analysis of the impacts on irrigation water services pricing from the return of capital. The analysis will consider the methodologies applied to recover the return of capital by LMW and CIT and the impacts the methodologies have on the level of irrigation water service pricing;
- Identifying the impacts on irrigation water service pricing arising from the recovery of a return on capital in irrigation water services charges;
- Identifying the cost allocation methodologies adopted by LMW and CIT to allocate non-direct costs to irrigation water services and between irrigation districts; and
- Summarising any divergences identified above and the impacts on the level of irrigation water service pricing in LMW and CIT.

### 1.2 DATA SOURCES

LMW provided Indec with further information to assist with the Stage 2 analysis, in particular:

- forecast Regulatory Asset Base (RAB), regulatory depreciation and relevant assumptions relating to the 2008-2013 pricing period; and
- further information to better understand the cost allocation methodology.

CIT provided Indec with further details relating to its pricing policies and referred Indec to the CIT Network Service Plan 2012-2017 (NSP) to gain an understanding of the cost allocation methodologies.

## 2 PRICING POLICIES AND COST ALLOCATION

### 2.1 BACKGROUND

The analysis within this report has examined in more detail the impacts on the level of water charges resulting from the pricing policy and cost allocation methodologies applied by LMW and CIT.

### 2.2 PRICING POLICIES

The Stage 2 analysis identified that LMW and CIT apply different pricing policies despite both businesses being subject to pricing regulation from the Australian Competition and Consumer Commission (ACCC). The ACCC has accredited arrangements in Victoria that allow the Commission to determine regulated charges of infrastructure operators in Victoria.

#### 2.2.1 Lower Murray Water

The key features of LMW's pricing policy is summarised below.

- LMW set prices for each delivery system and in some cases sets tariffs on a sub-system basis such as Mildura South. This approach sets cost reflective tariffs for each system and sub-system;
- LMW tariffs include a return on capital component which is derived from the building blocks approach. The level of the return on capital derives from the weighted average cost of capital (WACC), determined by the Commission, and the Regulatory Asset Base (RAB) for the relevant delivery system or sub-system; and
- LMW achieves a return of capital via the depreciation of the RAB to recover the capital invested in the delivery system infrastructure.

#### 2.2.2 Central Irrigation Trust

CIT's pricing framework is structured around delivery pressure and system lift. CIT has adopted this approach to enable the key cost driver of electricity to be reflected within its tariff

structure. The key features of the CIT pricing policy includes:

- a common pricing approach based on system lift and delivery pressure rather than for each discrete Trust or delivery system. This is a deliberate pricing policy to smooth or average the tariffs within each service type. CIT has four tariff groups based on the service provided:
  - Low pressure;
  - Medium pressure;
  - High pressure; and
  - High lift high pressure.
- CIT does not recover a return on capital within its pricing structures.
- CIT recovers a return of capital derived from a 120 year renewals annuity determined for each Trust. The renewals annuity for each trust is pooled into two groups: High lift high pressure (Golden Heights and Sunlands) and a second pool comprising the remaining 10 Trusts.

### 2.3 COST ALLOCATION

In determining water charges, LMW and CIT adopt different approaches to the allocation of indirect costs. Indirect costs are those costs which are not directly related to a particular delivery system such as corporate overheads.

#### 2.3.1 Lower Murray Water

LMW's philosophy involves in the first instance to directly charge corporate based activities to the relevant function (Corporate, Water, Sewer or Irrigation & Drainage) to which the expense relates. If the expense is allocated to Corporate, the standard or non-standard allocation methodology is applied. If the expense is directly allocated to Water and Sewerage (ie Urban) no more allocation is required. Indirect expenses allocated directly to Irrigation and Drainage are either allocated directly to a district or as a corporate expense and then allocated using customers numbers.



Any indirect costs allocated to the Corporate function are allocated based on the following allocation methodologies.

The standard allocation methodology involves a two-step process with the initial allocation to Urban and Rural on direct labour and contractor expenditure to the urban and rural infrastructure activity components of the business and the second step involves the allocation to customer sector by customer numbers or number of customer services.

The non-standard methodology involves a single step to allocate costs based on the number of customer services within each function and/or district.

The following categories of indirect costs are allocated as follows:

- General – standard;
- Customer/billing – non-standard; and
- Information technology – non-standard.

### 2.3.2 Central Irrigation Trust

According to the CIT NSP, CIT's costs are categorised into fixed, variable and variable-electricity.

Indec's understanding is that fixed costs are allocated into two cost pools:

- Golden Heights and Sunlands; and
- Remaining 10 trusts.

The fixed costs less any fixed cost contributions made by other water sales, such as domestic and industrial customers and termination fees, are deducted to arrive at the costs to be recovered from the fixed tariff. The funding of capital expenditure, as projected by the renewals annuity, is included as a fixed cost. The outcome of this involves two common based fixed charges with customers in Golden Heights and Sunlands charged a different fixed charge than those customers in the remaining 10 Trusts.

Variable costs are grouped into the same two cost pools used for fixed costs. The variable

costs are calculated by determining total costs (excluding variable electricity) and deducting those recovered by fixed charges. The variable costs include a component to fund non-infrastructure capital expenditure such as plant and equipment, vehicles etc. Contributions received from other variable income sources such as domestic and industrial are deducted. The result of this is that the variable costs, excluding electricity, are recovered from the two common based variable charges – Golden Heights and Sunlands and the remaining 10 Trusts.

Variable electricity costs are grouped into the following pools, which are the same as the tariff groups, and based on system pressure and lift:

- Low pressure;
- Medium pressure;
- High pressure; and
- High lift high pressure.

The variable costs to be recovered from the variable tariff are the sum of the variable costs and the variable electricity costs. The variable tariff is also determined on a common basis, however it is based on system pressure and lift, with the following four common variable tariffs determined:

- Low pressure;
- Medium pressure;
- High pressure; and
- High lift high pressure.

Further information on the CIT indirect cost allocation methodology was not available to Indec. The CIT NSP indicates that indirect costs are allocated to the four tariff groups without detailing the allocation approach adopted.

Due to insufficient information being available on the allocation of CIT indirect costs, a quantification of the impacts on tariffs was not possible.

## 2.4 BULK WATER

Bulk water charges typically capture the cost of water harvesting, storage and transmission to the delivery point. Bulk water charges are usually the revenues of the owner and operator of the dams, weirs and other regulating structures. In the case of LMW, the bulk water charge appears on the customer's bill as the GMW Entitlement Storage Fee.

LMW customers are charged a bulk water charge whereas CIT customers do not pay a bulk water charge. The extent of these charges is outlined in Sections 3.4 and 3.5.

## 2.5 GOVERNMENT LEVIES

The charges paid by irrigation customers may include government levies associated with various activities and government programs eg. a salinity fee associated with the management of salt in the soil and water. These levies may or may not be transparent and detailed on the customer's bill.

It is important to note that this report has highlighted only those levies which are transparent on the customer's bill.

LMW's customers in the Mildura South delivery system are charged a Water Share Fee.

LMW's customers in the Robinvale delivery system are charged the following government levies:

- MCMA Salinity Fee;
- District Environmental; and
- Regional Environmental.

CIT's customers are charged a Natural Resource Management Levy.

The extent of these charges is outlined in Section 3.4 and 3.5.

## 2.6 GOVERNMENT CONTRIBUTIONS

The scope of the analysis did not require an assessment of the impacts of Government contributions to fund assets however the likely impacts should be noted.

### 2.6.1 Lower Murray Water

Under the LMW pricing policy, which includes a return on capital and a return of capital, a Government contribution effectively reduces the RAB. This excludes both the return of capital and return on capital from water charges relating to the asset funded by the Government contribution. When the asset is replaced, and the future replacement is not funded by a Government contribution, the capital expenditure increases the RAB and consequently a return on capital and return of capital are included in water charges.

### 2.6.2 Central Irrigation Trust

The pricing impacts for CIT customers resulting from a Government contribution are somewhat different. The impact arises from the return of capital as no return on capital is included in pricing. The renewals annuity is reduced due to the Government contribution funding the initial investment however, the renewals annuity captures the future replacement of the asset.

The impact on CIT water charges resulting from Government contributions is more immediate when compared to LMW. The magnitude of the impact on water charges would differ on a case by case basis and would be dependent upon the level of the capital contribution and the frequency of future asset replacements.

## 2.7 SUMMARY

Figure 1 below summarises the key attributes of the pricing policies of LMW and CIT.

Figure 1 shows that LMW and CIT adopt different policies in relation to tariff structure, return of capital and return on capital. Differences also arise in the bulk water charges and government levies.

Section 2.3 outlined the approaches applied by LMW and CIT in the allocation of costs for the purposes of tariff calculations.

Figure 1 – Summary of Key Pricing Policies

	Lower Murray Water	Central Irrigation Trust
Tariff structure	System based including sub-system high pressure tariff.	Common tariff based on system lift and pressure with 12 trusts grouped into 4 tariff groups - low, medium, high & high lift high.
Return of capital	Depreciation of RAB	120 year renewals annuity for each trust
Return on capital	Yes - based on WACC and RAB	No
Bulk water	Yes	No
Government levies	Mildura South - Water Share Fee Robinvale - MCMA Salinity Fee, District and Regional Environmental	Natural Resource Management Levy

## 3 IMPACTS ON WATER CHARGES

### 3.1 METHODOLOGY

The impact analysis of pricing policies and cost allocation on irrigation water tariffs was based on the 2012/13 fees and charges for the high pressure delivery systems operated by LMW and CIT.

The analysis in this section of the report estimates the impacts on water charges arising from pricing policies. Due to insufficient information being available on CIT indirect costs and their allocation, a quantification of the impacts on tariffs was not possible.

The charges relating to irrigation, drainage, stock and domestic services were included in the analysis. The list of the respective charges for each delivery system was outlined in the Stage 1 Report.

Charges and fees collected on behalf of other agencies have been included to capture all the charges which would appear on an irrigator's bill. The existence of these charges may introduce inherent differences across the delivery systems particularly if a charge is unique to a particular system.

Excluding these charges does not necessarily remove them from all delivery system charges as some systems may not show the charge separately and may bundle the charge within an existing tariff.

The comparison of charges across the peer group of delivery systems was based on the assumptions applied in the Stage 1 Report, which involve the following annual supply arrangements:

- Single connection for irrigation supply;
- Single connection for domestic and stock supply;
- Irrigation supply of 100 megalitres (ML);
- Domestic and Stock supply of 2ML; and
- Domestic only supply of 500kl.

### 3.2 LOWER MURRAY WATER CHARGES

To estimate the return on capital and return of capital components within the LMW tariff structure, Indec was required to source the forecast data and assumptions applied to set the 2012/13 charges. The key parameters include the RAB, regulatory depreciation and WACC. LMW made this information available to Indec.

The calculation of the return of capital and return on capital was estimated based on the data outlined above and undertaking a smoothed tariff calculation on a net present value (NPV) basis. This was required to replicate the tariff calculation made to set the prices for the 2008 to 2013 pricing period.

The WACC applied in the NPV calculation and to estimate the return on capital was 5.8% (real post-tax), which was the rate determined by the Authority for the 2008 to 2013 pricing period.

#### 3.2.1 Mildura South

At the time that the 2012/13 tariffs were set, the Mildura system was operating under the control of the First Mildura Irrigation Trust (FMIT) and the RAB was not detailed to the Mildura South level. LMW has established a RAB for the Mildura South system based on actual data in 2013 dollars.

LMW advised Indec that it is highly probable that the actual RAB closely resembles the forecast RAB as minimal capital expenditure activity has occurred.

Given that no alternative data was available, Indec based its analysis on the RAB provided by LMW. For the purposes of this analysis, Indec has indexed the RAB and regulatory depreciation to 2007 dollars to restate the RAB as applied in the calculation of tariffs for the 2008 to 2013 pricing period.

Figure 2 below details the reconstructed RAB for the Mildura South delivery system based in 2007 dollars.

**Figure 2 – Mildura South Regulatory Asset Base - \$m (\$2007)**

	2008/09	2009/10	2010/11	2011/12	2012/13
Opening asset base	7.572	7.341	7.216	7.100	7.007
plus capital expenditure	0.000	0.030	0.001	0.024	0.000
less customer contributions	0.000	0.000	0.000	0.000	0.000
less government contributions	0.000	0.000	0.000	0.000	0.000
less regulatory depreciation new	-0.071	-0.073	-0.067	-0.068	-0.071
less disposals	-0.160	-0.082	-0.051	-0.048	0.000
Closing asset base	7.341	7.216	7.100	7.007	6.936
Average Asset Base	7.456	7.278	7.158	7.053	6.972

Source: Based on data provided by Lower Murray Water

Figure 3 below details the estimated return on capital and return of capital components included in the 2012/13 charges for Mildura South on a per delivery right basis.

**Figure 3 – Mildura South 2012/13 (\$ per delivery right)**

	2012/13
Return on capital	703.72
Return of capital	118.10

### 3.2.2 Robinvale

Figure 4 below details the forecast RAB for Robinvale based in 2007 dollars, as provided by LMW.

**Figure 4 – Robinvale Regulatory Asset Base - \$m (\$2007)**

	2008/09	2009/10	2010/11	2011/12	2012/13
Opening asset base	4.495	23.031	22.680	22.136	21.620
plus capital expenditure	21.664	0.218	0.026	0.052	0.258
less customer contributions	-2.773	0.000	0.000	0.000	0.000
less government contributions	0.000	0.000	0.000	0.000	0.000
less regulatory depreciation new	-0.333	-0.547	-0.548	-0.547	-0.547
less disposals	-0.022	-0.022	-0.022	-0.022	-0.022
Closing asset base	23.031	22.680	22.136	21.620	21.309
Average Asset Base	13.763	22.856	22.408	21.878	21.465

Source: Lower Murray Water

Figure 5 below details the estimated return on capital and return of capital components included in the 2012/13 charges for Robinvale on a per delivery right basis.

**Figure 5 – Robinvale 2012/13 (\$ per delivery right)**

	2012/13
Return on capital	557.66
Return of capital	236.46

### 3.3 CENTRAL IRRIGATION TRUST

As previously outlined, CIT does not recover a return on capital within its pricing, however it does recover a return of capital. The return of capital is recovered based on a 120 year renewals annuity.

Figure 6 below details the renewals annuity component included in the 2012/13 prices, as provided by CIT.

**Figure 6 – CIT Renewals Annuity 2012/13 (\$ per water delivery right)**

	2012/13
Golden Heights and Sunlands	13.46
Other 10 Trusts	9.13

Source: Central Irrigation Trust

### 3.4 LOWER MURRAY WATER CHARGES

#### 3.4.1 Mildura South Charges

Figure 7 below details the 2012/13 water charges for Mildura South based on 100ML of delivery entitlement and usage. Figure 7 shows an estimate of the key components of the total charge, in absolute and relative terms.

**Figure 7 – Mildura South 2012/13 Irrigation Water Charges 100ML Usage**

	2012/13	
	\$	%
Fixed charges	7,871	45%
Variable charges	8,629	49%
Government levies	12	0%
Bulk water	1,060	6%
<b>Total Charges</b>	<b>17,572</b>	<b>100%</b>
Return of Capital	1,417	8%
Return on Capital	8,445	48%
<i>Total Charges excluding return of/on capital</i>	<i>7,710</i>	<i>44%</i>
<i>Total Charges excluding return of/on capital, Govt levies &amp; bulk water</i>	<i>6,637</i>	<i>38%</i>

The key issues to note from Figure 7 are:

- return of capital is estimated to represent \$1,417 or 8% of the total bill;
- return on capital is estimated to represent \$8,445 or 48% of the total bill;
- government levies represent \$12 of the total bill;
- bulk water charges account for \$1,060 or 6% of the total bill; and
- The return of capital, return on capital, government levies and bulk water charges in total are estimated to represent \$10,934 or 62% of the total bill.

Indec notes that the total estimated return of capital and return on capital of \$9,862 is greater than the level of fixed charges, which total \$7,871. Given the fixed nature of the return of capital and return on capital, it would be expected that the recovery of these revenues would be made via fixed charges. This suggests that

perhaps the reconstructed RAB provided by LMW is not consistent with the forecast RAB applied in the tariff calculation or a portion of the return of capital and return on capital is being recovered from variable charges.

#### 3.4.2 Robinvale Charges

Figure 8 below outlines the 2012/13 water charge for Robinvale based on 100ML of delivery entitlement and usage. Figure 8 details an estimate of the key components of the total charge, in absolute and relative terms.

**Figure 8 – Robinvale 2012/13 Irrigation Water Charges 100ML Usage**

	2012/13	
	\$	%
Fixed charges	11,985	62%
Variable charges	6,100	31%
Government levies	284	1%
Bulk water	1,060	5%
<b>Total Charges</b>	<b>19,429</b>	<b>100%</b>
Return of Capital	2,837	15%
Return on Capital	6,692	34%
<i>Total Charges excluding return of/on capital</i>	<i>9,899</i>	<i>51%</i>
<i>Total Charges excluding return of/on capital, Govt levies &amp; bulk water</i>	<i>8,555</i>	<i>44%</i>

The key issues to note from Figure 8 are:

- return of capital is estimated to represent \$2,837 or 15% of the total bill;
- return on capital is estimated to represent \$6,692 or 34% of the total bill;
- government levies represent \$284 or 1% of the total bill;
- bulk water charges account for \$1,060 or 5% of the total bill; and
- The return of capital, return on capital, government levies and bulk water charges in total are estimated to represent \$10,873 or 56% of the total bill.

### 3.5 CENTRAL IRRIGATION TRUST WATER CHARGES

#### 3.5.1 High Pressure Charges

Figure 9 below shows the 2012/13 water charge for CIT High Pressure systems based on 100ML of delivery entitlement and usage. Figure 9 details a break-down of the total charges, in absolute and relative terms.

**Figure 9 – CIT High Pressure 2012/13 Irrigation Water Charges 100ML Usage**

	2012/13	
	\$	%
Fixed charges	2,850	34%
Variable charges	5,112	60%
Government levies	535	6%
Bulk water	0	0%
<b>Total Charges</b>	<b>8,497</b>	<b>100%</b>
Return of Capital	913	11%
Return on Capital	0	0%
<b>Total Charges excluding return of/on capital</b>	<b>7,584</b>	<b>89%</b>
<b>Total Charges excluding return of/on capital, Govt levies &amp; bulk water</b>	<b>7,049</b>	<b>83%</b>

The key issues to note from Figure 9 are:

- return of capital represents \$913 or 11% of the total bill;
- no return on capital is recovered in the water charges;
- government levies represent \$535 or 6% of the total bill;
- no bulk water charges are included in the water bill; and
- The return of capital and government levies represents \$1,448 or 17% of the total bill.

#### 3.5.2 High Lift High Pressure Charges

Figure 10 below shows the 2012/13 water charge for CIT High Lift High Pressure systems based on 100ML of delivery entitlement and usage. Figure 10 outlines a break-down of the total charges, in absolute and relative terms.

**Figure 10 – CIT High Lift High Pressure 2012/13 Irrigation Water Charges 100ML Usage**

	2012/13	
	\$	%
Fixed charges	4,885	37%
Variable charges	7,758	59%
Government levies	535	4%
Bulk water	0	0%
<b>Total Charges</b>	<b>13,178</b>	<b>100%</b>
Return of Capital	1,346	10%
Return on Capital	0	0%
<b>Total Charges excluding return of/on capital</b>	<b>11,832</b>	<b>90%</b>
<b>Total Charges excluding return of/on capital, Govt levies &amp; bulk water</b>	<b>11,297</b>	<b>86%</b>

The key issues to note from Figure 10 are:

- return of capital represents \$1,346 or 10% of the total bill;
- no return on capital is recovered in the water charges;
- government levies represent \$535 or 4% of the total bill;
- no bulk water charges are included in the water bill; and
- The return of capital and government levies represents \$1,881 or 14% of the total bill

### 3.6 COMPARISON OF 2012/13 IRRIGATION WATER CHARGES

This section of the report compares the relevant LMW and CIT charges and the impacts that the pricing policies have on these charges.

#### 3.6.1 Summary of Key Differences

Section 2 of this report outlined the key differences in pricing policies and cost allocation methodologies adopted by LMW and CIT. In summary, the key pricing policy differences arise from:

- tariff structure – system based pricing is adopted by LMW whereas CIT adopts a common pricing approach;

- return of capital – LMW recovers a return of capital based on depreciation of the RAB and CIT applies a 120 year renewals annuity;
  - return on capital – LMW recovers a return on capital derived from the WACC and the RAB whereas CIT does not recover a return on capital;
  - bulk water charges – LMW charges include a bulk water charge and CIT’s charges do not include bulk water charges; and
  - Government levies differ between LMW and CIT, however the impact on water charges is not very significant.
- Robinvale total charges respectively. CIT does not recover a return on capital; and
- bulk water charges account for \$1,060 of the total water charges in Mildura South and Robinvale whereas CIT’s water charges do not include a bulk water charge.
- Government levies differ between LMW and CIT however, as highlighted earlier, they do not have a material impact on water charges.
- Figure 11 also includes some scenario analysis to show four different comparisons to identify the impacts that the differing pricing policies have on total water charges.

The analysis in this report identified differences in the cost allocation methodologies and was unable to quantify the impacts on water charges due to insufficient data available for the CIT delivery systems. Section 2.3 provides further details of the differences identified.

Figure 11 below shows the water charges based on 100ML of usage for four delivery systems under comparison – LMW Mildura South, LMW Robinvale, CIT High Pressure and CIT High Lift High Pressure.

The key impacts on water charges based on 100ML of usage arise from:

- return of capital which is relatively higher for the LMW systems compared to the CIT systems. The estimated return of capital for Mildura South is \$1,417 and Robinvale is \$2,837 compared to \$913 for CIT High Pressure and \$1,346 for CIT High Lift High Pressure;
- return on capital is estimated to account for \$8,445 of the Mildura South and \$6,692 of the

### 3.6.2 Scenario 1

Scenario 1 removes the estimated return on capital component from the total charges. Under this scenario, Figure 11 shows that the adjusted total water bills are:

- LMW Mildura South - \$9,127
- LMW Robinvale - \$12,737
- CIT High Pressure - \$8,497
- CIT High Lift High Pressure - \$13,178

Scenario 1 results in the systems clustering into two groups of similar water charges - LMW Mildura South and CIT High Pressure are closely aligned while LMW Robinvale and CIT High Lift High Pressure having a similar level of charges.

### 3.6.3 Scenario 2

Scenario 2 involves a comparison of LMW and CIT water charges excluding the return of capital and return on capital.

Figure 11 below shows the estimated adjusted total charges under this scenario would be:



- LMW Mildura South - \$7,710
- LMW Robinvale - \$9,889
- CIT High Pressure - \$7,584
- CIT High Lift High Pressure - \$11,832

Under Scenario 2, the level of total adjusted charges for LMW Mildura South and CIT High Pressure remain closely aligned. The adjusted total charges for LMW Robinvale are above those of LMW Mildura South and CIT High Pressure but are below those of CIT High Lift High Pressure.

#### 3.6.4 Scenario 3

Scenario 3 shows adjusted water charges with the exclusion of return on capital, Government levies and bulk water charges.

Scenario 3 in Figure 11 shows that the estimated adjusted water charges are:

- LMW Mildura South - \$8,055
- LMW Robinvale - \$11,393
- CIT High Pressure - \$7,962
- CIT High Lift High Pressure - \$12,643

Scenario 3 shows that the level of total charges for LMW Mildura South and CIT High Pressure remain closely aligned at around \$8,000. The adjusted total charges for LMW Robinvale of \$11,393 and CIT High Lift High Pressure of \$12,643 are above those of the other two delivery systems.

#### 3.6.5 Scenario 4

Scenario 4 in Figure 11 adjusts the total water charges to exclude the return of capital, return on capital, bulk water charges and government

levies. The estimated adjusted total charges under this scenario are:

- LMW Mildura South - \$6,637
- LMW Robinvale - \$8,555
- CIT High Pressure - \$7,049
- CIT High Lift High Pressure - \$11,297

This scenario shows that the adjusted total water charges show alignment between LMW Mildura South and CIT High Pressure. LMW Robinvale is above Mildura South and CIT High Pressure however, is below CIT High Lift High Pressure.

### 3.7 SUMMARY OF KEY FINDINGS

The analysis and scenario modelling undertaken in this report has demonstrated that on a comparative basis the pricing policies of LMW and CIT have a significant impact on the level of water charges.

All the factors under consideration in this report, except for Government levies, result in a relatively larger downwards adjustment to LMW water charges when compared to CIT water charges.

The most significant single impact on total water charges arises from the estimated return on capital (Scenario 1). The total adjusted charges for LMW Mildura South and LMW Robinvale are reduced by \$8,445 and \$6,692 respectively.

When the estimated return on capital is removed from LMW charges (Scenario 1), the total adjusted charges for LMW Mildura South (\$9,127) and CIT High Pressure (\$8,497) remain closely aligned. The adjusted total charges for LMW Robinvale (\$12,737) and CIT High Lift High (\$13,178) are of a similar magnitude.

Figure 11 – Comparison of 2012/13 Irrigation Water Charges (100ML Usage)

	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High	Average
Fixed charges	7,871	11,985	2,850	4,885	6,898
Variable charges	8,629	6,100	5,112	7,758	6,900
Government levies	12	284	535	535	342
Bulk water	1,060	1,060	0	0	530
<b>Total Charges</b>	<b>17,572</b>	<b>19,429</b>	<b>8,497</b>	<b>13,178</b>	<b>14,669</b>
Return of Capital	1,417	2,837	913	1,346	1,628
Return on Capital	8,445	6,692	0	0	3,784
<b>Scenario 1 - Total Charges excluding return on capital</b>	<b>9,127</b>	<b>12,737</b>	<b>8,497</b>	<b>13,178</b>	<b>10,885</b>
<b>Scenario 2 - Total Charges excluding return of/on capital</b>	<b>7,710</b>	<b>9,899</b>	<b>7,584</b>	<b>11,832</b>	<b>9,256</b>
<b>Scenario 3 - Total Charges excluding return on capital, Govt levies &amp; bulk water</b>	<b>8,055</b>	<b>11,393</b>	<b>7,962</b>	<b>12,643</b>	<b>10,013</b>
<b>Scenario 4 - Total Charges excluding return of/on capital, Govt levies &amp; bulk water</b>	<b>6,637</b>	<b>8,555</b>	<b>7,049</b>	<b>11,297</b>	<b>8,385</b>