

# LOWER MURRAY WATER – TARIFF & OPERATING COST BENCHMARK COMPARISON

---



Final Report Prepared for:

Mr. David Heeps  
Chief Executive Officer  
Essential Services Commission

Ref: Q0378  
May 2013

Contact Details:  
Mr. Sandro Marin  
Tel: 07 3012 6348

[www.indec.com.au](http://www.indec.com.au)

## 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 Draft Report 20130516.docx	S Marin	D O'Neill	P Shepherd	16/05/2013	Draft for review
Final	Z:/Reports/Queensland Reports/Q0378 ESC LMW Benchmarking Comparison/Report/Q03 78 ESC LMW Benchmarking Comparison Final Report 20130521.docx	S Marin	D O'Neill	P Shepherd	21/05/2013	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	16/05/2013
Mr David Heeps Chief Executive Officer Essential Services Commission	Level 37 No.2 Lonsdale Street Melbourne 3000, Australia	23/05/2013

## CONTENTS

<b>MANAGEMENT SUMMARY .....</b>	<b>i</b>
<b>1 BACKGROUND .....</b>	<b>1</b>
1.1 SCOPE OF THE REVIEW .....	1
<b>2 PEER GROUP OF RURAL WATER PROVIDERS .....</b>	<b>2</b>
2.1 MILDURA SOUTH KEY CHARACTERISTICS .....	2
2.2 PEER GROUP OF DELIVERY SYSTEMS .....	2
2.2.1 Robinvale Key Characteristics .....	2
2.2.2 Central Irrigation Trust Key Characteristics .....	2
2.2.3 Summary of Peer Group .....	3
<b>3 IRRIGATION WATER CHARGES COMPARISON (2012/13) .....</b>	<b>4</b>
3.1 METHODOLOGY .....	4
3.2 LOWER MURRAY WATER CHARGES .....	4
3.2.1 Mildura South Charges .....	4
3.2.2 Robinvale Charges .....	4
3.3 CENTRAL IRRIGATION TRUST CHARGES .....	5
3.4 COMPARISON OF 2012/13 IRRIGATION WATER CHARGES .....	5
3.5 PRICING POLICY .....	6
<b>4 IRRIGATION OPERATING COST STRUCTURE COMPARISON (2011/12) .....</b>	<b>8</b>
4.1 METHODOLOGY .....	8
4.1.1 LMW Data .....	8
4.1.2 CIT Data .....	8
4.2 KEY RESULTS .....	8
<b>5 EXPLAINING THE DIFFERENCES .....</b>	<b>10</b>
<b>APPENDIX A - LIST OF SERVICE CHARGES .....</b>	<b>11</b>

## TABLE OF FIGURES

Figure 1 – Peer Group of Delivery Systems.....	i
Figure 2 - 2012/13 Irrigation Water Charges 100ML Usage .....	i
Figure 3 – 2011/12 Operating Cost Analysis.....	i
Figure 4 – Mildura South Delivery System .....	2
Figure 5 – Robinvale Delivery System.....	2
Figure 6– CIT Delivery Systems .....	3
Figure 7 – Peer Delivery Systems .....	3
Figure 8 – 2012/13 Irrigation Water Charges 100ML Usage .....	5
Figure 10 – Pricing Policy.....	6
Figure 9 - Comparison of 2012/13 Irrigation Water Charges – 100ML usage .....	6
Figure 11 – 2011/12 Operating Cost Analysis.....	8
Figure 12 – 2011/12 Operating Costs per ML .....	9

## MANAGEMENT SUMMARY

Indec Consulting completed a high level reasonableness test of the irrigation tariffs and cost structures of Lower Murray Water (LMW) Mildura South high pressure pipeline system against comparable delivery systems operated by Australian rural water providers.

Indec focused on identifying rural water providers supplying irrigation water via a high pressure pipeline system with a minimum pressure of 30 metres of head.

### Peer Group of Delivery Systems

Indec identified that the following delivery system as suitable to be included in the peer group for comparison against Mildura South:

- LMW Robinvale;
- Central Irrigation Trust (CIT) – high pressure; and
- CIT – high lift high pressure.

Figure 1 below summarises the key characteristics of the peer group of delivery systems identified by Indec.

Figure 1 – Peer Group of Delivery Systems

Characteristic	Mildura South	Robinvale	CIT High	CIT High Lift High
Pipe (km)	23	77	92	89
Number of customer accounts	159	328	352	1,103
Volume delivered (ML)	2,972	17,583	20,095	12,649
ML delivered per customer	19	54	57	11
Pressure (minimum metres of head)	35	35	35	35

Note: Water delivered for Mildura South and Robinvale relates to 2011-12 and for CIT High and CIT High Lift High to 2010-11

Source: Lower Murray Water and Central Irrigation Trust

### Comparison of 2012/13 Irrigation Water Charges

The charges included in the analysis include those relating to irrigation, drainage, stock and domestic services. Charges collected on behalf of other agencies have also been included.

Figure 2 below shows the comparative analysis of irrigation water charges for 100 megalitres (ML) of irrigation water use across the peer group of delivery systems. Mildura South and Robinvale delivery systems have total irrigation water charges ranging between \$17,500 to \$19,400, which is relatively higher than the

charges for the CIT High and CIT High Lift High Pressure delivery systems. The CIT total irrigation charges range between \$8,500 to \$13,200.

Figure 2 - 2012/13 Irrigation Water Charges 100ML Usage

Service	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High
Fixed/Access	\$8,943	\$13,045	\$2,850	\$4,885
Consumption	\$8,629	\$6,384	\$5,647	\$8,293
Total	\$17,572	\$19,429	\$8,497	\$13,178

The Mildura South delivery system has the highest revenue to operating cost recovery ratio (137%) whereas the CIT High Lift High Pressure has the lowest revenue to operating cost recovery ratio (88%). The revenue to operating cost ratio below 100% suggests that the charges are not recovering the operating costs and charges are not recovering any capital.

### Comparison of 2011/12 Operating Costs

Figure 3 highlights the key results of the 2011/12 operating cost analysis for the peer group of delivery systems.

Figure 3 – 2011/12 Operating Cost Analysis

	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High
Operating cost per ML (excl elec)	\$131.50	\$143.55	\$74.85	\$101.26
Electricity cost per ML	\$71.91	\$54.02	\$62.33	\$63.80
Operating costs per ML	\$203.41	\$197.57	\$137.19	\$165.06
Operating cost per customer (excl elec)	\$2,457.89	\$7,695.21	\$4,279.25	\$1,161.19
Electricity cost per customer	\$1,343.98	\$2,895.62	\$3,563.58	\$731.64
Revenue per ML	\$278.08	\$205.81	\$140.65	\$145.19
Number of customer accounts	159	328	352	1,103
ML delivered per customer	19	54	57	11

Note: Water delivered for Mildura South and Robinvale relates to 2011-12 and for CIT High and CIT High Lift High to 2010-11

During 2011/12, Mildura South operated at \$204 per ML, Robinvale at \$198 per ML and the CIT High Pressure and High Lift High Pressure at \$137 and \$165 per ML respectively.

The electricity cost per ML in 2011/12 is highest in the Mildura South delivery system at \$72 per ML, with the CIT delivery systems ranging between \$62 and \$64 per ML. The electricity cost per ML in 2011/12 for the Robinvale delivery system is \$54 per ML.

On a per customer basis, the operating costs excluding electricity in 2011/12 are highest in

the Robinvale system at \$7,695 per customer, followed by CIT High delivery system \$4,279 per customer with Mildura South at \$2,458 per customer and CIT High Lift High at \$1,161 per customer.

### Explaining the Differences

The scope of this analysis did not include identifying the reasons why any divergences in charges and operating costs across delivery systems may exist. However, it should be noted that a number of factors may be driving the differences identified.

One factor may involve the pricing policy applied by the service provider such as the inclusion of a return on capital or the extent of the return of capital.

A further factor may arise from the governance arrangements which could influence the level of costs as shareholder and regulatory requirements may vary across the delivery systems. This could result in different compliance requirements and associated cost structures.

Furthermore, as no two delivery systems are identical, the underlying cost structures may differ due to differing asset age and conditions and input costs. These differences may emerge due to economies of scale benefits arising from a larger or denser delivery system, the existence of different technologies, environmental, operating and asset management practices.

Further quantitative analysis would be required to make adjustments to the analysis to account for some of the differences that may exist, such as different pricing and capital recovery policies.

Qualitative analysis would identify differences arising from governance arrangements and the existence of different technologies, environmental, operating and asset management practices which impact on cost structures.

Further analysis would highlight the factors contributing to the variations and identify some of the impacts, including their materiality, on the charges paid by irrigators.

## 1 BACKGROUND

The Essential Services Commission (ESC) engaged Indec Consulting to complete 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.

### 1.1 SCOPE OF THE REVIEW

The ESC is seeking to provide LMW Rural water customers with a view as to how LMW's Mildura South tariffs and cost structures compare to peer rural water providers.

The aim of the analysis is to provide an indicative high level assessment of the tariff and cost structures of comparable rural water providers with high pressure irrigation delivery systems. The analysis would be based on currently available information, either in the public domain or provided by the ESC, and relevant data from Indec's infrastructure industry database. The analysis involves:

- Identifying the peer group of rural water providers for the purposes of this analysis;
- Collecting the relevant information and data for the peer group of rural water providers;
- Undertaking a high level benchmark comparison of irrigation water tariffs including identifying any significant differences in pricing policies which may explain any materially different tariff levels;
- Undertaking a high level benchmark comparison of rural water service provider's irrigation delivery system irrigation operating cost structures including commenting on any significant policy, operational and asset condition issues which may materially impact on operating cost structures; and
- Highlighting any divergences in LMW's irrigation tariffs and costs compared to the peer comparison group including any high level explanations.

## 2 PEER GROUP OF RURAL WATER PROVIDERS

The first step in the analysis was the identification of an appropriate and suitable peer group of Australian rural water providers with a high pressure irrigation delivery system.

LMW's area of operation extends from Kerang to the South Australian border taking in the municipalities of Mildura, Swan Hill and Gannawarra. LMW provides the region with urban water and wastewater services, treatment and effluent disposal services, river quality water to stock and irrigation customers, along with the collection and disposal of subsurface irrigation drainage water.

LMW offers a diverse range of services and the focus of this review is the Mildura South high pressure irrigation delivery system.

### 2.1 MILDURA SOUTH KEY CHARACTERISTICS

As the Mildura South delivery system is a high pressure pipeline system, it was important to identify a peer group of rural water providers or irrigation delivery systems that displayed similar characteristic.

Figure 4 below provides a high level summary of the key characteristics of the Mildura South delivery system. LMW provided additional data to enable Indec to undertake its analysis.

Figure 4 – Mildura South Delivery System

Characteristic	
Pipe (km)	22.9
Number of customer accounts	159
Volume delivered 2011-12 (ML)	2,972
ML delivered per customer	19
Pressure (minimum metres of head)	35

Source: Lower Murray Water

It was important that the selection of the peer group captured as many common characteristics as possible to enable a relevant comparison to be made. Indec scanned its industry database containing information on rural water providers and the information available in the public domain to identify a

suitable peer group. The information available in the public domain included the National Water Commission Performance Reports for Rural Water Service Providers and the websites and associated material for the various rural water service providers.

Indec focused on identifying rural water service providers supplying irrigation water via a high pressure pipeline system. A high pressure pipeline is defined as a pipeline with a minimum pressure of 30 metres of head.

### 2.2 PEER GROUP OF DELIVERY SYSTEMS

#### 2.2.1 Robinvale Key Characteristics

Indec identified that LMW's Robinvale delivery system was suitable to be included in the peer group as this irrigation system is based on a high pressure pipeline.

Figure 5 below provides a high level summary of the key characteristics of the Robinvale delivery system.

Figure 5 – Robinvale Delivery System

Characteristic	
Pipe (km)	77
Number of customer accounts	328
Volume delivered 2011-12 (ML)	17,583
ML delivered per customer	54
Pressure (minimum metres of head)	35

Source: Lower Murray Water

In comparison to the Mildura South system, the Robinvale system is larger on most measures with a greater length of pipelines, a greater number of customers and higher level of water deliveries.

#### 2.2.2 Central Irrigation Trust Key Characteristics

Indec's scan identified a number of pipeline delivery systems however the number of delivery systems based on a high pressure system with similar characteristics to the Mildura South delivery system was concentrated within the Central Irrigation Trust (CIT).



CIT manages and administers twelve Irrigation Trusts of Berri, Cadell, Chaffey, Cobdolga, Golden Heights, Kingston, Loxton, Lyrup, Moorok, Mypolonga, Sunlands and Waikerie on the River Murray or its anabranches in South Australia. All of the water delivery system are fully automated pressurised pipeline systems.

The location of CIT and its delivery systems neighbours those of Lower Murray Water, providing a further common characteristic.

The relevant CIT delivery systems identified as relevant for the peer group involved those delivery systems with a high pressure pipeline.

The comparison of the CIT irrigation delivery systems is based on the tariff group level which has required Indec to group the data for the relevant systems into the appropriate tariff groups. CIT assisted Indec to undertake this task by providing additional information to enable the data to be presented in a suitable way for the comparisons.

The high pressure system includes the Cooltong section of the Chaffey Irrigation Trust and the Loxton Irrigation Trust.

The high lift high pressure system includes the Golden Heights and Sunlands Irrigation Trusts.

Figure 6 below provides a high level summary of the key characteristics of the comparable CIT delivery systems.

Figure 6– CIT Delivery Systems

Characteristic	CIT High	CIT High Lift High
Pipe (km)	92	89
Number of customer accounts	352	1,103
Volume delivered 2010-11 (ML)	20,095	12,649
ML delivered per customer	57	11
Pressure (minimum metres of head)	35	35

Source: Central Irrigation Trust

In comparison to Mildura South, the CIT delivery systems are significantly larger on most measures. The CIT high pressure and CIT high lift high pressure systems both have a greater length of pipe, a higher number of customers and greater volumes of water deliveries.

### 2.2.3 Summary of Peer Group

Figure 7 below shows a summary table of the peer group of irrigation delivery systems. These systems have been selected for further analysis and comparison to:

- Undertake a high level benchmark comparison of irrigation water tariffs including identifying any significant differences in pricing policies which may explain any materially different tariff levels;
- Undertake a high level benchmark comparison of irrigation operating cost structures including commenting on any significant policy, operational and asset condition issues which may materially impact on operating cost structures; and
- Highlight any divergences in LMW's irrigation tariffs and costs compared to the peer comparison group including any high level explanations.

Figure 7 – Peer Delivery Systems

Characteristic	Mildura South	Robinvale	CIT High	CIT High Lift High
Pipe (km)	23	77	92	89
Number of customer accounts	159	328	352	1,103
Volume delivered (ML)	2,972	17,583	20,095	12,649
ML delivered per customer	19	54	57	11
Pressure (minimum metres of head)	35	35	35	35

Note: Water delivered for Mildura South and Robinvale relates to 2011-12 and for CIT High and CIT High Lift High to 2010-11

Source: Lower Murray Water and Central Irrigation Trust

Indec initially collected relevant information and data for the peer group of delivery systems from the public domain. The data sources included the National Water Commission Performance Reports for Rural Water Service Providers, Annual Reports, Network Service Plans and material located on the service provider's websites.

This information was supplemented by additional and more detailed information provided by both LMW and CIT.

### 3 IRRIGATION WATER CHARGES COMPARISON (2012/13)

#### 3.1 METHODOLOGY

The comparison of irrigation water tariffs involved collecting the 2012/13 fees and charges made to the irrigators for the peer group of delivery systems.

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 is included in Appendix A.

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.

Furthermore, an assessment of materiality of these charges and fees was not possible as the charges and fees collected on behalf of other agencies are not transparent or unbundled across all service providers.

The comparison of charges across the peer group of delivery systems was based on 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

##### 3.2.1 Mildura South Charges

In the case of the Mildura South delivery system, the tariff structure involves the following charges:

- Customer Charge per account basis;
- Service Point Charge per connected outlet;
- Goulburn-Murray Water Entitlement Storage Fee charged per mega litre of entitlement;
- Department of Sustainability & Environment Water Share Fee per water share held in the Water Register;
- Delivery Capacity Share charged on the basis of the maximum megalitre requirement over a 14 day period;
- Mildura Metered Usage Charge per megalitre of water supplied;
- Mildura South Levy per megalitre of water supplied from the Mildura South Pumping Station;
- Drainage Fee on a per megalitre of drainage annual use limit;
- Domestic and Stock Service Point Charge per connected service;
- Domestic and Stock Delivery Charge on a per garden supply basis; and
- Domestic and Stock Mildura Metered Usage Charge based on per megalitre of water supplied; and
- Domestic and Stock Mildura South Levy per megalitre of water supplied from the Mildura South Pumping Station.

##### 3.2.2 Robinvale Charges

The Robinvale delivery system includes the following charges:

- Service Fee on a per assessment basis;

- Goulburn-Murray Water Entitlement Storage Fee charged per mega litre of entitlement;
- Delivery Share Fee per delivery share;
- Delivery Fee per mega litre of water supplied;
- MCMA Salinity Fee per mega litre used
- Regional Environmental Fee per water share;
- District Environmental Fee per water share; and
- Property Drainage Fee per delivery share.

Robinvale does not charge a separate domestic and stock charge for an existing irrigation customer as the domestic and stock charges are captured within the irrigation tariffs.

### 3.3 CENTRAL IRRIGATION TRUST CHARGES

The CIT has a uniform tariff structure across all its delivery systems however the levels of some charges vary across the delivery systems.

The CIT charges separately for domestic services and supply and applies a peak and off-peak tariff structure. Drainage fees are included in the irrigation tariffs for those customers with an irrigation connection.

CIT tariffs include the following charges to its irrigation customers:

- Irrigation Service per megalitre based on Water Delivery Rights and any use above the Water Delivery Rights. A minimum charge of \$580 applies;
- Irrigation consumption charge, with a different rate for peak and off-peak consumption, based on per mega litre of supply;
- Natural Resource Management Levy per mega litre based on Irrigation Rights;

- Domestic Service charge per connection; and
- Domestic Supplies based on cents per kilolitres supplied.

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

Figure 8 below details the 2012/13 total irrigation water charges for 100ML usage for the peer group of delivery systems.

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

Service	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High
Fixed/Access	\$8,943	\$13,045	\$2,850	\$4,885
Consumption	\$8,629	\$6,384	\$5,647	\$8,293
Total	\$17,572	\$19,429	\$8,497	\$13,178

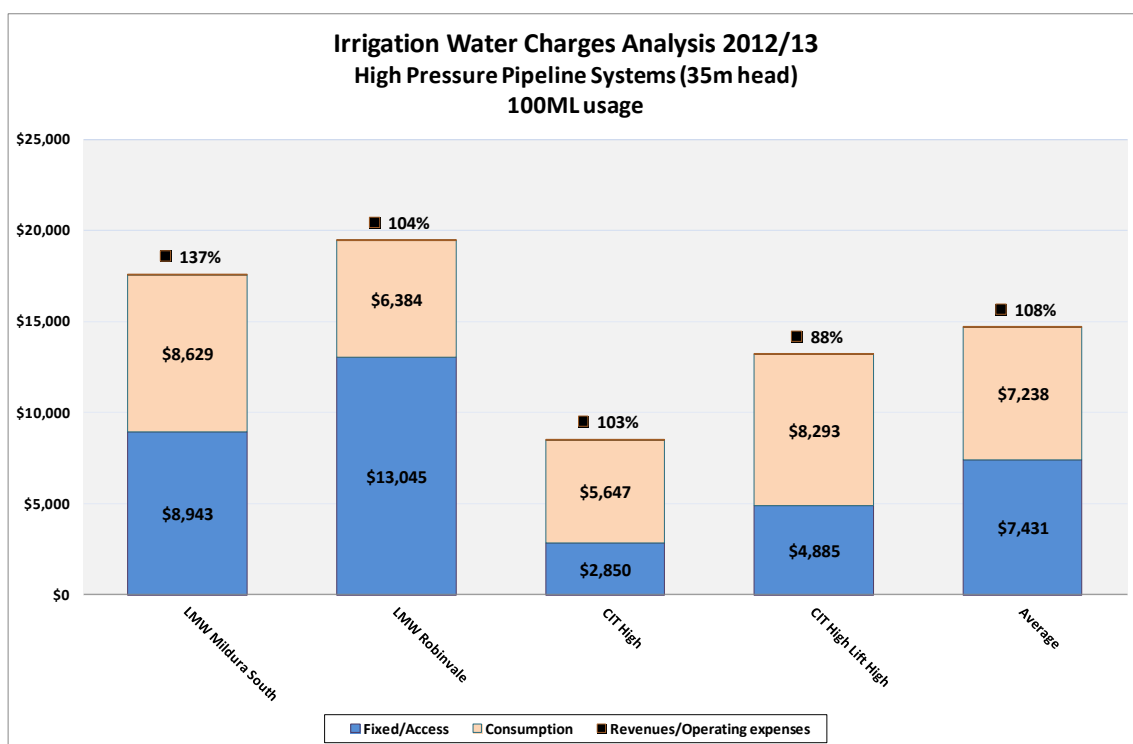
The comparative analysis of irrigation water charges for 100ML of irrigation water use across the peer group of delivery systems is showing that Mildura South and Robinvale delivery systems have similar total irrigation water charges ranging between \$17,500 to \$19,400, which are relatively higher than the charges for the CIT High and CIT High Lift High Pressure delivery systems. The CIT total irrigation charges range between \$8,500 to \$13,200.

Figure 9 below includes a graph to show the 2012/13 total irrigation water charges for the peer group of irrigation delivery systems based on 100ML of usage.

The graph shows the charges on a fixed and variable basis to highlight the differing tariff structures in place across the peer group of delivery systems.

The graph also includes the revenues to operating cost ratios to provide a measure of the extent that revenues recover operating costs. As operating costs exclude depreciation and assuming that operating costs are relatively stable and do not vary greatly between years, this ratio may provide an indication of the impacts on charges of the pricing policies in place.

Figure 9 - Comparison of 2012/13 Irrigation



A revenue to operating cost ratio above 100% implies that revenues are recovering a proportion of capital costs. The capital costs fund capital expenditure, both past and future, and any return on capital.

The Mildura South delivery system has the highest revenue to operating cost recovery ratio (137%) whereas the CIT High Lift High Pressure has the lowest revenue to operating cost recovery ratio (88%).

The revenue to operating cost ratio for CIT High Lift High Pressure is below 100% which suggests that the charges are not recovering the operating costs and charges are not recovering any capital. CIT is addressing this issue and has in place a 10 year program with a special levy included in prices to establish an asset replacement reserve.

It should also be noted that the Golden Heights and Sunlands Irrigation Trusts are currently benefiting from a common pricing allocation from other irrigation trusts within CIT to bridge the revenue shortfall.

### 3.5 PRICING POLICY

The pricing policy adopted by the service providers may provide some explanation for the different level of irrigation charges.

Figure 10 below highlights the key pricing policy attributes which could be influencing the level of irrigation water charges.

Figure 10 – Pricing Policy

Attribute	LMW Mildura South	LMW Robinvale	CIT High Lift High
	Economic regulation of pricing	ESC Price Review	
Rate of return pricing		Yes	No
Return of capital		Depreciation based on regulatory asset base	Renewals annuity

LMW and CIT have differing pricing policy attributes with the key differences arising from rate of return pricing and the return of capital.

LMW sets prices which includes a return on capital which is determined by the weighted average cost of capital (WACC) and its regulatory asset base (RAB). CIT does not include a return on capital in its pricing structure.

The other key pricing policy difference arises from the return of capital. LMW achieves a return of capital via depreciation of its RAB whereas CIT recovers a return of capital in its pricing with the use of a renewals annuity.

It should be noted that LMW's charges are regulated by the ESC based on a price review basis. CIT operates under the ACCC compliance monitoring framework. The economic regulatory frameworks may have differences which influence the level of charges made by the service providers.

## 4 IRRIGATION OPERATING COST STRUCTURE COMPARISON (2011/12)

### 4.1 METHODOLOGY

The next stage of the comparative analysis was to assess the operating cost structure of the peer group of delivery systems.

This involved the collection of operating cost data for both LMW and CIT. Operating cost data was sourced from financial accounts with depreciation costs excluded.

Other customer related data was collected such as water rights/entitlements, water deliveries, customer connections and accounts.

#### 4.1.1 LMW Data

Indec sourced the financial and customer data required for the purposes of this analysis from LMW.

#### 4.1.2 CIT Data

The financial and customer data for CIT was sourced from the CIT Annual Report 2011/12 and Network Service Plan 2012-2017. Indec was required to group financial and customer data into the respective tariff groups – High Pressure and High Lift High Pressure.

As the CIT financial data was consolidated for all customer sectors, Indec was required to identify the revenues and costs associated with irrigation water and exclude industrial/parks & ovals/bulk town supply. This required Indec to remove the revenues and costs for activities excluded from this analysis from the CIT consolidated data.

### 4.2 KEY RESULTS

Figure 11 highlights the key results of the 2011/12 operating cost analysis for the peer group of delivery systems.

The key metrics included in this table are operating costs excluding electricity and electricity costs. These costs are shown on a per customer and per ML delivered basis.

The table also shows the revenues per customer and per ML delivered and the average ML delivered per customer.

Figure 11 – 2011/12 Operating Cost Analysis

	LMW Mildura South	LMW Robinvale	CIT High	CIT High Lift High
Operating cost per ML (excl elec)	\$131.50	\$143.55	\$74.85	\$101.26
Electricity cost per ML	\$71.91	\$54.02	\$62.33	\$63.80
Operating costs per ML	\$203.41	\$197.57	\$137.19	\$165.06
Operating cost per customer (excl elec)	\$2,457.89	\$7,695.21	\$4,279.25	\$1,161.19
Electricity cost per customer	\$1,343.98	\$2,895.62	\$3,563.58	\$731.64
Revenue per ML	\$278.08	\$205.81	\$140.65	\$145.19
Number of customer accounts	159	328	352	1,103
ML delivered per customer	19	54	57	11

Note: Water delivered for Mildura South and Robinvale relates to 2011-12 and for CIT High and CIT High Lift High to 2010-11

Figure 11 shows that the operating costs (excluding electricity) per ML for the LMW delivery systems range between \$132 and \$144 per ML, which is higher than the CIT delivery systems which range between \$75 and \$101 per ML.

The electricity cost per ML are highest in Mildura South at \$72 per ML, with the CIT delivery systems ranging between \$62 and \$64 per ML. The electricity cost per ML for the Robinvale is \$54 per ML.

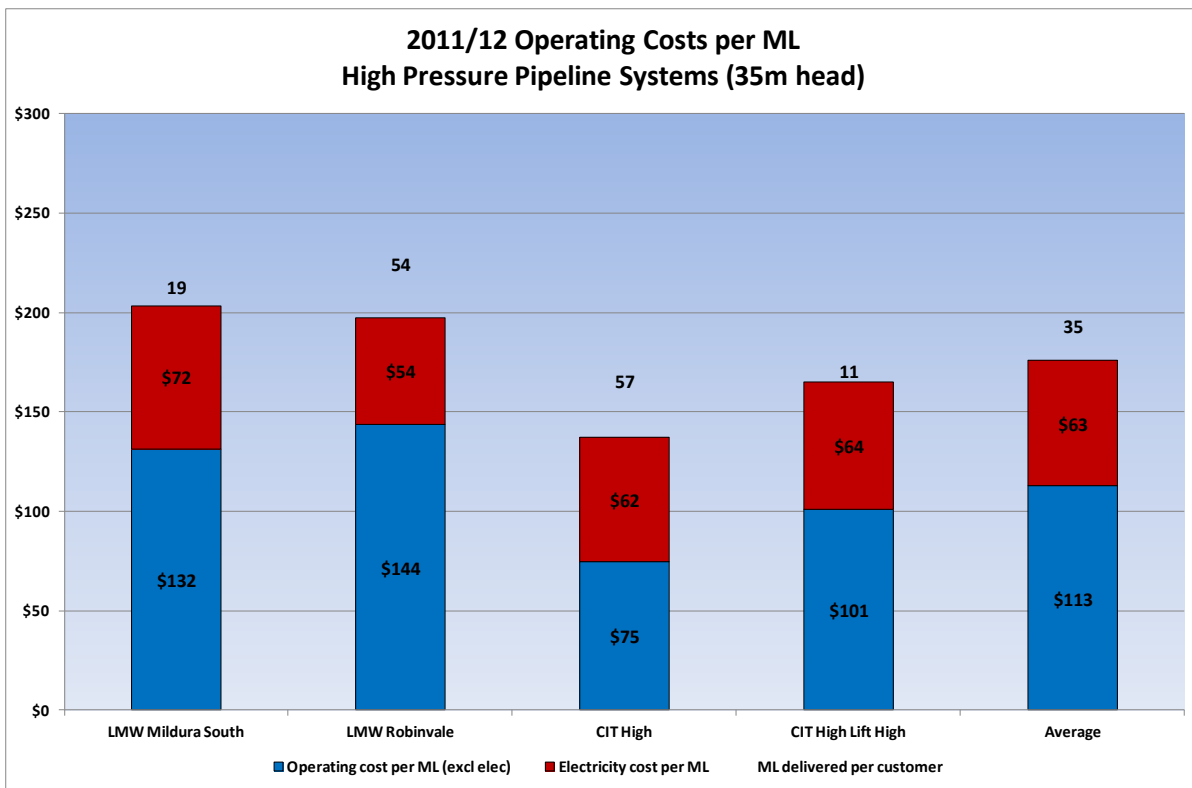
On a per customer basis, the operating costs excluding electricity are highest in the Robinvale system at \$7,695 per customer, followed by CIT High delivery system at \$4,279 per customer with Mildura South at \$2,458 per customer and CIT High Lift High at \$1,161 per customer.

Electricity costs per customer are highest in the CIT High delivery systems at \$3,564 per customer, followed by Robinvale at \$2,896 per customer, Mildura South at \$1,344 per customer and CIT High Lift High at \$732 per customer.

Figure 12 below shows a chart which shows the 2011/12 operating costs on a per ML basis.

During 2011/12, Mildura South operated at \$204 per ML, Robinvale at \$198 per ML and the CIT High Pressure and High Lift High Pressure at \$137 and \$165 per ML respectively.

Figure 12 – 2011/12 Operating Costs per ML



## 5 EXPLAINING THE DIFFERENCES

The scope of this analysis did not include identifying the reasons why any divergences in charges and operating costs across delivery systems may exist. However it should be noted that a number of factors may be driving the differences identified.

One factor includes the pricing policy applied by the service provider which may drive differences, particularly as some delivery systems may apply a pricing policy that includes both a return of and return on capital. Other delivery systems may only apply a return of capital. The different methodologies applied to achieve the pricing policy outcomes may also result in divergences. For instance, the achievement of a return of capital may involve either a renewals annuity or the use of depreciation of the regulatory asset base. Even if consistent pricing policies are applied, the assumptions or parameters applied may result in different levels of charges. Examples of assumptions or parameters which may differ include the term of the renewals annuity, the discount rate applied, the weighted cost of capital applied to the return on capital, the policy to value the regulatory asset base and the useful live assumptions used in depreciation calculations.

The governance arrangements may also drive the level of costs as shareholder and regulatory requirements may vary across the delivery systems. This could result in differing compliance requirements and associated cost structures.

Furthermore, as no two delivery systems are identical, the underlying cost structures may vary due to different asset age and conditions and input costs. These differences may emerge due to economies of scale benefits arising from a larger or denser delivery system, the existence of different technologies, environmental, operating and asset management practices.

Further quantitative analysis could be undertaken to make adjustments to the analysis to account for some of the variations that may exist, such as different pricing and capital recovery policies. Qualitative analysis could also be undertaken to identify differences arising from governance arrangements and the existence of different technologies, environmental, operating and asset management practices which impact on cost structures. Further analysis could highlight the factors contributing to the variations and identify the impacts, including their materiality, on the charges paid by irrigators.



## APPENDIX A - LIST OF SERVICE CHARGES

### MILDURA



#### EXPLANATION OF TARIFFS – 2012/2013 MILDURA IRRIGATION DISTRICT

**PLEASE RETAIN FOR REFERENCE TO ALL ACCOUNTS RECEIVED IN 2012/2013**

2012/2013 TARIFF & CHARGES*			
Tariff Description as listed on accounts Irrigation & Drainage	Rate (p.a.)	Basis	Billed
Customer Charge	\$ 167.00	Per Account	Quarterly
Service Point Charge	\$ 146.00	Per Connected Outlet	Quarterly
GMW Entitlement Storage Fee Murray Basin HR	\$ 10.60	High Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Murray Basin LR	\$ 4.80	Low Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Goulburn Basin HR	\$ 7.30	High Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Goulburn Basin LR	\$ 3.70	Low Reliability Water Share (megalitre entitlement)	Annually
Spillable Water Charge Murray Basin	\$ 4.80	Per megalitre transferred into ABA from Spill Account	Annually
Spillable Water Charge Goulburn Basin	\$ 3.70	Per megalitre transferred into ABA from Spill Account	Annually
DSE Water Share Fee	\$ 12.25	Per Water Share held in Water Register	Annually
Delivery Capacity Share Mildura South	\$ 547.30	Per max megalitre / 14 day period	Quarterly
Delivery Capacity Share Other Areas	\$ 490.00	Per max megalitre / 14 day period	Quarterly
Mildura Metered Usage Charge	\$ 46.00	Per megalitre of water supplied	as supplied
Mildura South Levy	\$ 37.74	Per megalitre of water supplied from the Mildura South Pumping Station	as supplied
Mildura Excess Water <del>Penalty</del> Charge	\$1,000.00	For every megalitre used in excess of ABA balance	28 days from notice
Drainage Fee	\$ 6.40	Per megalitre of Drainage AUL	Quarterly
<b>Domestic &amp; Stock Supply (D&amp;S)</b>			
Customer Charge	\$ 167.00	Per Account	Quarterly
Service Point Charge – Benetook and Mid Area and Mildura South	\$ 217.00	Per Connected Service	Quarterly
Service Point Charge – Other Areas	\$ 146.00	Per Connected Service	Quarterly
GMW Entitlement Storage Fee Murray Basin HR	\$ 10.60	High Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Murray Basin LR	\$ 4.80	Low Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Goulburn Basin HR	\$ 7.30	High Reliability Water Share (megalitre entitlement)	Annually
GMW Entitlement Storage Fee Goulburn Basin LR	\$ 3.70	Low Reliability Water Share (megalitre entitlement)	Annually
Spillable Water Charge Murray Basin	\$ 4.80	Per megalitre transferred into ABA from Spill Account	Annually
Spillable Water Charge Goulburn Basin	\$ 3.70	Per megalitre transferred into ABA from Spill Account	Annually
DSE Water Share Fee	\$ 12.25	Per Water Share held in Water Register	Annually
Delivery Capacity Charge Mildura South	\$ 133.03	Per Garden Supply	Quarterly
Delivery Capacity Charge Other Areas	\$ 110.66	Per Garden Supply	Quarterly
Mildura Metered Usage Charge	\$ 90.58	Per megalitre of water supplied	as supplied
Mildura South Levy	\$ 36.74	Per megalitre of water supplied from the Mildura South Pumping Station	as supplied
Mildura Excess Water <del>Penalty</del> Charge	\$1,000.00	For every megalitre used in excess of ABA balance	28 days from notice

\*There may be other tariffs that apply to individual properties that are not listed here.

## MILDURA CONTINUED

**Annual charges will be included in the first billing.  
Quarterly charges will be billed equally over four billing periods.**

### **DEFINITIONS:**

**Customer Service Fee:** is a fixed charge per customer account to contribute to administration costs and is billed on a quarterly basis.

**Service Point Charge:** is a fixed charge per service point to contribute to cost of meters and irrigation contractors, billed quarterly.

**Delivery Capacity Charge:** Delivery Capacity Charge is based on a maximum 12% of annual Delivery Capacity Share to be taken in any 14-day period. This charge contributes to Lower Murray Water's fixed infrastructure and maintenance costs, billed quarterly. For Garden Supplies the Delivery Capacity Charge is a fixed price per service.

**GMW Entitlement Storage Fee:** is based on total water share to cover headwork costs charged to Lower Murray Water by the State Water Resource provider (1st billing only).

**DSE Water Share Fee:** Is a pass through charge from the State Water Register, one charge for each registration of water share, billed in first billing cycle.

**Mildura Metered Usage Fee:** is based on the volume of water delivered to the property to contribute to the cost of supply for each megalitre delivered. e.g. power and labour.

**Mildura Excess Usage:** is charged at the end of the irrigation season for all customers who have exceeded the balance of water in their Allocation Bank Account.

**Drainage Fee:** is charged per megalitre of your drainage AUL (Annual Use Limit for drained area), billed quarterly.

**High Pressure Mildura South Levy:** is charged per ML of water used by customers supplied from the Mildura South High Pressure pump station.

**Spillable Water Fee:** is charged per ML of water transferred from a customers Spillable Water Account into their Allocation Bank Account.

**ABA:** Allocation Bank Account  
**AUL:** Annual Use Limit  
**ML:** Megalitre or a million litres

**The charge for the GMW Entitlement Storage Fee is included on the first account only.**

### **Payment**

Please refer to your invoice/account for payment options.

### **Due Dates for Payment**

All Rural tariffs and charges must be paid by the date specified in the invoice provided and failing any date being specified in that invoice, 28 clear days from the date of issue of the invoice.

**The date on all invoices/accounts represents the final date that the payment will be accepted interest free.**

Interest shall be payable in respect to all amounts payable under a tariff or charge if the amount is not paid by the due date.

Please refer to our website [www.lmw.vic.gov.au](http://www.lmw.vic.gov.au) -Tariffs/Rates-Definitions for further information on our tariff and charges.

## ROBINVALE


**EXPLANATION OF TARIFFS – 2012/2013  
ROBINVALE IRRIGATION DISTRICT**

**PLEASE RETAIN FOR REFERENCE TO ALL ACCOUNTS RECEIVED IN 2012/2013**

<b>2012/2013 TARIFF &amp; CHARGES*</b>		
<b>Tariff Description as listed on accounts Irrigation &amp; Drainage</b>	<b>Explanation</b>	<b>Charge Amount</b>
Robinvale Service Fee	Per Assessment	\$100.00
GMW Entitlement Storage Fee Murray Basin HR	High Reliability Water Share (megalitre entitlement)	\$10.60/ML
GMW Entitlement Storage Fee Murray Basin LR	Low Reliability Water Share (megalitre entitlement)	\$4.80/ML
GMW Entitlement Storage Fee Goulburn Basin HR	High Reliability Water Share (megalitre entitlement)	\$7.30/ML
GMW Entitlement Storage Fee Goulburn Basin LR	Low Reliability Water Share (megalitre entitlement)	\$3.70/ML
Robinvale Delivery Share Fee - Irrigation	Access to delivery system	\$900.00/DS
Robinvale Delivery Fee	Usage of Water	\$61.00/ML used
MCMA Salinity Fee - Robinvale	MCMA Salinity Fee	\$1.15/ML used
Regional Environmental Fee	Regional Environmental Fee	\$0.26/WS
Robinvale Environment Fee	District Environmental Fee	\$1.43/WS
Robinvale Property Drainage 1	Property Drainage Fee – Division 1	\$90.40/DS
Robinvale Property Drainage 4	Property Drainage Fee – Division 4	\$22.60/DS
Robinvale Casual User Fee	Casual User Fee (Properties with insufficient Delivery Share)	\$900.00/DS
Robinvale Excess Water Charge	For every ML of overuse shown in the Allocation Bank Account (ABA)	\$1,000.00/ML
Spillable Water Charge Murray Basin	Water transferred to ABA from Spillable Account	\$4.80/ML
Spillable Water Charge Goulburn Basin	Water transferred to ABA from Spillable Account	\$3.70/ML
<b>Domestic &amp; Stock (D&amp;S)</b>		
<b>Metered</b>		
Robinvale Service Fee	Per Assessment	\$100.00
GMW Entitlement Storage Fee Murray Basin HR	High Reliability Water Share (megalitre entitlement)	\$10.60/ML
GMW Entitlement Storage Fee Murray Basin LR	Low Reliability Water Share (megalitre entitlement)	\$4.80/ML
GMW Entitlement Storage Fee Goulburn Basin HR	High Reliability Water Share (megalitre entitlement)	\$7.30/ML
GMW Entitlement Storage Fee Goulburn Basin LR	Low Reliability (megalitre entitlement)	\$3.70/ML
Robinvale Delivery Share Fee – D&S	Access to delivery system	\$914.07/DS
Robinvale Delivery Fee	Usage of water	\$61.00/ML used
Spillable Water Charge Murray Basin	Water transferred to ABA from Spillable Account	\$4.80/ML
Spillable Water Charge Goulburn Basin	Water transferred to ABA from Spillable Account	\$3.70/ML

## ROBINVALE CONTINUED

**The break up of the tariffs and charges across the 4 accounts are as follows:**

<b>1<sup>st</sup> Account</b>	100% GMW Entitlement Storage Fee 100% Drainage Diversion Fee 25% Service Fee 25% Delivery Share Fee 25% Drainage & Environmental Fees Usage (mid May to end June 2012) & MCMA Salinity Fee**
<b>2<sup>nd</sup> Account</b>	25% Service Fee 25% Delivery Share Fee 25% Drainage & Environmental Fees Usage (end June to mid Oct 2012) & MCMA Salinity Fee
<b>3<sup>rd</sup> Account</b>	25% Service Fee 25% Delivery Share Fee 25% Drainage & Environmental Fees Usage (mid Oct 2012 to mid Jan 2013) & MCMA Salinity Fee
<b>4<sup>th</sup> Account</b>	25% Service Fee 25% Delivery Share Fee 25% Drainage & Environmental Fees Usage (mid Jan to mid Apr 2013) & MCMA Salinity Fee

\*There may be other tariffs that apply to individual properties that are not listed here.

\*\*Any usage charged in the first account is at the 2011/2012 rate/ML as this usage applies to April-June 2012. The usage fee for 2011/2012 was \$58.76 & MCMA Salinity Fee was \$1.15.

**The charge for the GMW Entitlement Storage Fee is included on the first account only.**

### Due Dates for Payment

All Rural tariffs and charges must be paid by the date specified in the invoice provided and failing any date being specified in that invoice, 28 clear days from the date of issue of the invoice.

The date on all invoices/accounts represents the final date that the payment will be accepted interest free.

Interest shall be payable in respect to all amounts payable under a tariff or charge if the amount is not paid by the due date.

Please refer to our website [www.lmw.vic.gov.au](http://www.lmw.vic.gov.au) -Tariffs/Rates-Definitions for further information on our tariff and charges.

If you have any further queries please contact the revenue section on 5051 3400.

## CENTRAL IRRIGATION TRUST



## CENTRAL IRRIGATION TRUST

## WATER PRICES 2012/13

The Berri, Cadell, Chaffey, Cobdogla, Golden Heights, Kingston, Loxton, Lyrup, Moorook, Mypolonga, Sunlands and Waikerie Irrigation Trusts have declared the following prices effective 1 July 2012.

SERVICE CHARGES		
IRRIGATION SERVICE (All districts except Golden Heights & Sunlands)	\$26.60 per megalitre based on Water Delivery Rights and any use above the Water Delivery Rights. Minimum charge of \$580.	
IRRIGATION SERVICE (Golden Heights & Sunlands)	\$46.95 per megalitre based on Water Delivery Rights and any use above the Water Delivery Rights. Minimum charge of \$580.	
DOMESTIC, PARKS & OVALS, INDUSTRIAL SERVICES	\$190.00 per annum per connection (with no volumetric entitlement)	
WATER CONSUMPTION CHARGES		
Irrigation Consumption Up To Water Allocation		
LOW PRESSURE IRRIGATION		
Berri, Chaffey (Ral Ral), Cobdogla, Kingston, Lyrup, Moorook, Waikerie	Off Peak Consumption Price	Peak Consumption Price
	\$21.10 per megalitre	\$28.80 per megalitre
MEDIUM PRESSURE IRRIGATION		
Cadell & Mypolonga	Off Peak Consumption Price	Peak Consumption Price
	\$31.20 per megalitre	\$42.50 per megalitre
HIGH PRESSURE IRRIGATION		
Chaffey (Cooltong) & Loxton	Off Peak Consumption Price	Peak Consumption Price
	\$42.80 per megalitre	\$56.60 per megalitre
HIGH LIFT HIGH PRESSURE IRRIGATION		
Golden Heights & Sunlands	Off Peak Consumption Price	Peak Consumption Price
	\$66.70 per megalitre	\$86.90 per megalitre
Irrigation Consumption Above Water Allocation		
Equivalent to the penalty gazetted under Section 115 of the Natural Resources Management Act 2004 for water use in excess of authorised water allocation from the River Murray Prescribed Watercourse for 2012-13.		
Non Irrigation Consumption		
DOMESTIC SUPPLIES (All districts)	56 cents per kilolitre	
PARKS AND OVALS (All districts)	Off Peak Consumption Price	Peak Consumption Price
	\$0.29 per kilolitre	\$0.56 per kilolitre
INDUSTRIAL (All districts)	Consumption up to 250,000 kilolitres	\$0.56 per kilolitre
	Consumption for next 300,000 kilolitres	\$0.29 per kilolitre
	For any further water use	\$0.11 per kilolitre
OTHERS CHARGES		
DRAINAGE (All districts except Sunlands)	\$80.00 per hectare for those customers without an irrigation connection.	
DRAINAGE (Sunlands)	As charged by Qualco Sunlands Groundwater Control Trust	
TERMINATION FEE (All districts except Golden Heights & Sunlands)	\$264.00 plus GST \$26.40 per megalitre of Water Delivery Right surrendered.	
TERMINATION FEE (Golden Heights & Sunlands)	\$436.00 plus GST \$43.60 per megalitre of Water Delivery Right surrendered.	
NATURAL RESOURCE MANAGEMENT LEVY (Class 3A)	\$5.35 per megalitre based on Irrigation Rights. This levy is collected for the South Australian Murray-Darling Basin Natural Resources Management Board.	
NATURAL RESOURCE MANAGEMENT LEVY (Sunlands only – Class 3B)	\$5.15 per megalitre based on Irrigation Rights. This levy is collected for the South Australian Murray-Darling Basin Natural Resources Management Board.	
CONTRAVENTION OF WATER RESTRICTION NOTICE (All districts)	\$315 expiation fee \$25,000 per person \$50,000 for body corporate	

Gavin McMahon  
Chief Executive Officer