
2016-20 Review of Water Prices for Goulburn-Murray Water

Additional Analysis

Prepared for:

Mr. Marcus Crudden
Director, Water

Essential Services Commission
Victoria

Ref: Q0410
June 2016

Contact Details:
Mr. Sandro Marin
Tel: 07 3228 9000



DOCUMENT CONTROL

CONTROL SHEET

| Version/ revision No. | Path/File name | Prepared by (author) | Reviewed by | Approved by | Version date | Security Classification |
|-----------------------------|---|-------------------------|------------------------|----------------|--------------|------------------------------|
| Draft | Q0410 ESC Review of GMW Prices – Additional Analysis – Draft | S Marin | S Marin P Boettcher | P Boettcher | 30/05/2016 | Commercial-in- Confidence |
| Final | Q0410 ESC Review of GMW Prices – Additional Analysis – Final | S Marin | S Marin P Boettcher | P Boettcher | 14/06/2016 | Public |

DISTRIBUTION HISTORY

| Name | Location | Issued date |
|--|---|--------------------|
| Marcus Crudden, Director, Water Essential Services Commission | Level 37 2 Lonsdale Street Melbourne VIC 3000 marcus.crudden@esc.vic.gov.au | Draft - 30/05/2016 |
| Marcus Crudden, Director, Water Essential Services Commission | Level 37 2 Lonsdale Street Melbourne VIC 3000 marcus.crudden@esc.vic.gov.au | Final - 14/06/2016 |

CONTENTS

| | | |
|----------|---|----------|
| 1 | BACKGROUND | 2 |
| 1.1 | SCOPE OF THE CONSULTANCY | 2 |
| 1.1.1 | Operating expenditure productivity | 2 |
| 1.1.2 | Diversion tariffs | 3 |
| 1.1.3 | Productivity forecasts | 3 |
| 1.1.4 | Diversion tariffs | 3 |
| 1.2 | RELIANCE ON G-MW DATA AND INFORMATION | 3 |
| 1.3 | FINANCIAL VALUES | 3 |
| 2 | PRODUCTIVITY FORECASTS | 4 |
| 2.1 | BACKGROUND | 4 |
| 2.2 | METHODOLOGY | 4 |
| 2.3 | REVISED PRODUCTIVITY FORECASTS | 4 |
| 2.3.1 | G-MW's submission to Draft Report | 4 |
| 2.3.2 | Connections Project Mid Term Review | 6 |
| 2.3.3 | Assumptions underpinning potential productivity savings | 7 |
| 2.3.4 | Savings associated with 5:1 gravity tariffs | 10 |
| 2.3.5 | Scope for further productivity improvements | 10 |
| 2.4 | DROUGHT COSTS | 12 |
| 2.4.1 | G-MW's submission to Draft Report | 12 |
| 2.4.2 | Analysis of additional resources | 12 |
| 2.4.3 | Analysis of pumping costs | 12 |
| 2.4.4 | Reliance of G-MW cost data | 12 |
| 2.4.5 | Costs not incurred in 2006-07 drought event | 13 |
| 2.4.6 | Estimated contingency | 13 |
| 2.4.7 | Drought pumping at Waranga Basin | 13 |
| 2.4.8 | Recommended escalation factors | 16 |
| 2.4.9 | Drought pumping at Buffalo Reservoir | 19 |
| 2.5 | DIVERSION TARIFFS | 20 |
| 2.5.1 | Additional or new information | 20 |
| 2.5.2 | Cost allocation to small and large customers | 20 |

TABLE OF FIGURES

| | |
|--|----|
| Figure 2-1 – G-MW's controllable baseline operating cost 2016-17 | 5 |
| Figure 2-2 – G-MW's revised annual productivity targets 2016-17 to 2019-20 | 6 |
| Figure 2-3 – Status of assumptions underpinning G-MW's savings initiatives | 9 |
| Figure 2-4 – Scope of further annual productivity improvements - revised..... | 11 |
| Figure 2-5 – Drought pumping cost at Waranga Basin | 14 |
| Figure 2-6 – Drought pumping cost at Buffalo Reservoir | 15 |
| Figure 2-7 – Observable escalation factors | 16 |
| Figure 2-8 – Recommended escalation factors | 16 |
| Figure 2-9 – Drought pumping costs - Waranga Basin | 18 |
| Figure 2-10 – Drought pumping costs – Buffalo Reservoir | 19 |

1 BACKGROUND

The Essential Services Commission (Commission) has engaged Indec to provide it with advice on Goulburn-Murray Water's (G-MW) revised productivity improvement proposal submitted as part of its response to Commission's Draft Decision – 2016 Price Review. The Draft Decision was released by the Commission in February 2016.

G-MW submitted its response on 29 April 2016 and it outlined, amongst other things, a revision to the operating expenditure forecast contained in its original 2016 Price Submission made to the Commission in September 2015. This price submission encompassed a four year pricing period commencing on 1 July 2016.

1.1 SCOPE OF THE CONSULTANCY

The Commission initially engaged Indec to provide it with high level advice in relation to G-MW's proposals made in its 2016 Price Submission in relation to:

- productivity forecasts; and
- tariff proposals.

In providing advice on the above, the Commission has asked Indec to have regard to:

- the two guidance papers issued by the Commission on how it will assess G-MW's price submission;
- the information in the G-MW's price submission (and accompanying information templates) and any explanations it provides on how it derived the forecasts; and
- any data and information the consultants have available to assess expenditure forecasts.

In assessing these proposals the Commission is required to have regard to its objectives under the *Essential Services Commission Act 2001*, including the main objective to "promote the long term interests of Victorian consumers".

Indec's original analysis is outlined in the following reports prepared for the Commission in January 2016:

- 2016-20 Review of Water Prices for Goulburn-Murray Water - Productivity and Capex Proposals; and
- 2016-20 Review of Water Prices for Goulburn-Murray Water - Tariff Structure Proposals.

This additional analysis should be read in conjunction with the reports above to obtain the relevant background to the analysis and the original findings.

The Commission has engaged Indec to undertake further analysis to address the following questions raised by the Commission:

1.1.1 Operating expenditure productivity

- Can G-MW substantiate their proposed reduction of operating expenditure which differs to the Commission's draft decision?
- Can G-MW substantiate the efficiency saving of \$400,000 associated with unifying the gravity irrigation tariffs for the 5 districts? Why is this so different from the \$850,000 saving associated with a common tariff for all 6 gravity irrigation districts?

- Can G-MW substantiate potential drought cost including relating to possible pumped tariff for the Waranga Basin?

1.1.2 Diversion tariffs

Submissions to the Commission's Draft Report have questioned the cost basis of diversions tariffs.

- Can G-MW provide a clearer indication of how costs are allocated between different classes of customers?
- Is new or better data available on costs for small and large diverters?

1.1.3 Productivity forecasts

Our high-level analysis of G-MW's productivity forecasts focused on answering the following questions:

- Are the productivity improvements reasonable?
- Does scope exist for further productivity improvements beyond those proposed?
- Have non-recurrent expenditure items been removed from the expenditure base?

Our methodology focused on the following:

- Justification of the operating cost estimate for the baseline year and identifying any adjustments for non-recurring expenditure;
- Quantification and justification of the operating cost impact of the infrastructure modernisation program, itemising any cost increases or decreases from the baseline year; and
- Specification and justification of expected efficiency savings to apply to baseline operating expenditure.

1.1.4 Diversion tariffs

Indec's methodology involved gaining an understanding of G-MW's tariff reforms and the drivers behind the proposed changes. Our initial understanding was based on G-MW's 2016 Price Submission and accompanying information templates.

As agreed with the Commission, the tariff review was based on a high-level assessment to identify any anomalies and inconsistencies with G-MW's statements and assumptions made in its 2016 Price Submission.

The scope of Indec's high level analysis was to consider if the proposed tariff reforms for G-MW's diversion tariffs reflects the underlying costs of service and charges, considering the breakdown of fixed and variable costs.

1.2 RELIANCE ON G-MW DATA AND INFORMATION

Indec has relied on the data and information provided by G-MW in completing this analysis. Indec has not completed detailed checking and verification of the data provided by G-MW.

1.3 FINANCIAL VALUES

All financial values in this report are based in 2015-16 real dollars unless otherwise stated.

Some data in tables may not sum to the total due to rounding.

2 PRODUCTIVITY FORECASTS

2.1 BACKGROUND

The Commission is required to assess whether G-MW's forecast operating costs include reasonable productivity improvements in providing services for the period 1 July 2016 to 30 June 2020. The Commission regulates G-MW's infrastructure related services according to the ACCC's pricing principles for price approvals and determinations made under the WCIR.

The Commission stated that it expected G-MW to present a case in its 2016 Price Submission regarding the productivity improvements which G-MW expects will arise from the infrastructure network and business transformation programs over 1 July 2016 to 30 June 2020.

2.2 METHODOLOGY

Our analysis of G-MW's revised productivity forecasts adopted the same approach applied in the assessment of G-MW's original submission. The analysis focused on answering the following questions:

- Are the revised productivity improvements reasonable?
- Does scope exist for further productivity improvements beyond those proposed?

A high-level analysis of the proposal put forward by G-MW in its response to the Commission's Draft Decision was undertaken.

The preparation of this analysis was under tight time constraints to meet the Commission's deadlines

2.3 REVISED PRODUCTIVITY FORECASTS

G-MW's original productivity target as proposed in its 2016 Price Submission was \$4.0 million over the four year regulatory period. G-MW's revised operating expenditure forecasts involve total productivity improvements of \$4.7 million. In its initial assessment, Indec identified that if G-MW was to achieve its 2013 Blueprint savings commitment it could achieve \$10.4 million in savings over the four year regulatory period. It was on this basis that Indec recommended a productivity target of \$10.4 million over the four year regulatory period.

2.3.1 G-MW's submission to Draft Report

Figure 2-1 below shows the calculation of G-MW's baseline controllable operating costs for 2016-17 with non-controllable expenditure items associated with the MDBA contribution, ESC licence fee and the Environmental contribution excluded. These expenditure items are excluded from controllable operating costs as G-MW management cannot control these costs.

The focus of this analysis is on controllable operating expenditure. To derive G-MW's total operating expenditure, the excluded expenditure items need to be added back to the controllable operating expenditure.

Figure 2-1 – G-MW’s controllable baseline operating cost 2016-17

| Description | \$ millions |
|--|-------------|
| | 2016-17 |
| Baseline operating costs | 99.9 |
| <i>Adjustments for non-controllable costs:</i> | |
| MDBA contribution | -12.0 |
| ESC licence fee | -0.1 |
| Environmental contribution | -1.7 |
| Controllable baseline operating costs | 86.1 |

Source: Indec and G-MW Response to Commission’s Draft Decision

Figure 2-2 below outlines G-MW’s revised annual operating expenditure targets for the 2016-17 to 2019-20 regulatory period. G-MW has made the following amendments to its productivity target:

- \$1.1 million of operating savings achieved since March 2015 included in 2016-17;
- \$850,000 of savings associated with the introduction of common gravity irrigation tariffs removed in 2019-20; and
- \$400,000 saving associated with the introduction of the 5:1 gravity irrigation tariff included in 2018-19.

The submission made by G-MW to the Commission’s Draft Report identified risks to its operating expenditure forecast arising from the climatic outlook over the next regulatory period and the outcomes from the Mid Term Review of the Connections Project.

The submission made by G-MW did not propose to include the additional costs associated with drought to its operating expenditure forecast. Rather, G-MW is seeking that any productivity savings are based on a prudent approach given the heightened risks G-MW faces.

G-MW stated that it is experiencing less than 100 per cent allocation in the Goulburn system and believes that the risk of dry conditions is likely in 2016-17 and beyond. The submission made by G-MW stated that this climatic outlook changes the assumptions which underpin the proposed \$20 million of efficiency savings outlined in the 2013 Blueprint. G-MW did not provide details on the expected impacts on the savings possible due to the change in assumptions. G-MW identified additional business activities and costs that are likely to occur during a drought event. These costs are further discussed in Section 2.4.

Figure 2-2 – G-MW’s revised annual productivity targets 2016-17 to 2019-20

| Description | \$ millions | | | |
|---|--------------|--------------|--------------|--------------|
| | 2016-17 | 2017-18 | 2018-19 | 2019-20 |
| Controllable baseline operating costs | 86.1 | 82.6 | 82.4 | 81.9 |
| <i>G-MW annual productivity improvements</i> | | | | |
| Labour costs | -2.4 | 0.4 | 0.5 | - |
| Productivity target | - | -0.6 | -0.6 | -0.5 |
| Operating savings since March 2015 | -1.1 | - | - | - |
| Savings due to 5:1 tariff reform | - | - | -0.4 | - |
| Total G-MW annual productivity target | -3.5 | -0.2 | -0.5 | -0.5 |
| Controllable operating costs after productivity improvements | 82.6 | 82.4 | 81.9 | 81.4 |
| Annual G-MW productivity target as a % of controllable operating costs | -4.1% | -0.2% | -0.6% | -0.5% |

Source: Indec and G-MW Response to Commission’s Draft Decision

2.3.2 Connections Project Mid Term Review

The Mid Term Review of the Connections Project identified that a number of assumptions underpinning the project are no longer valid and it has made a number of recommendations which involves the project being reset. The extracts below from the Mid-Term Review Report highlight some of the key findings:

A number of these assumptions have been found to no longer be valid, specifically

- *45% of the delivery shares not connected to a reconfigured backbone will be terminated and the landowners holding these rights will voluntarily ‘dry off’ and leave irrigated agriculture.*
- *5,272 landowner connections will need to be reconfigured by the project.*
- *Resource availability will not be a constraint for the project.*
- *95% of landowners will ultimately choose to be engaged with the project.*
- *Landowner agreements will be achieved with one interaction between the project and landowner.*
- *Landowners will form syndicates to take a collective and proactive approach to negotiation and agreement with the project on reconfiguration options.*

The project assumptions are no longer valid and the project structure needs to change to reflect this. With approximately \$801 million still to be spent as of June 2015, the project has an opportunity to reset.

The mid-term review has identified a spectrum of options open for the project and the implications of these options on the stakeholders:

- *Option 1: Do nothing to change the project.*
- *Option 2: Increase duration of the project.*
- *Option 3: Increase the project budget.*
- *Option 4: More effective use of compulsory reconfiguration powers.*
- *Option 5: Outsource all or part of the project.*
- *Option 6: Change the GMWCP2 policy framework to clarify the project aims.*
- *Option 7: Abandon the project.*

The selection of which option or combination of options can only be determined through a clear agreement between the Commonwealth, Victoria and GMW.

Indec has no reason to believe that the Connections Project will be abandoned as the Commonwealth and Victorian governments remain committed to the project continuing, as expressed in the following statement made in a Media Release on 13 January 2016.

The Australian and Victorian governments are committed to getting the Connections Project back on track and will continue consulting with irrigators to ensure the best possible outcomes are achieved for communities in northern Victoria.

Indec discussed the Connection Project with the Department of Environment, Land, Water and Planning (DELWP) on the 18th May 2016 to understand the issues being considered as part of the project reset. DELWP indicated that the evaluation process is in its early stages and a number of options are under consideration. DELWP outlined that further consultation is required with the numerous stakeholders before the way forward can be decided.

The governance of the Connections Project has been modified with a Project Control Group established to oversee the project. G-MW stated in its submission that the Connections Project is currently undertaking detailed analysis of the options outlined in the Mid Term Review and other considerations to determine the best way forward. G-MW outlined in its submission that this work has not progressed to a point that requires any changes to its current assumptions.

2.3.3 Assumptions underpinning potential productivity savings

G-MW provided the status update shown in Figure 2-3 below of the major assumptions underpinning its program of savings initiatives associated with infrastructure modernisation and business transformation. This update was considered by Indec during its assessment.

G-MW stated that it has achieved significant cost savings to date however, some of the major cost reduction initiatives have achieved savings lower than expectations or are uncertain.

The review of modernisation project has resulted in the investigation of a number of options and recommendations on the implementation methodology. G-MW stated that at this stage any impacts on G-MW's operating environment are unclear and are expected to be understood after the commencement of the 2016-17 to 2019-20 pricing period.

G-MW's status update of assumptions identified that one assumption has been achieved, which involved the 'flattened organisation structure and greater accountability'. A further assumption of implementing alternate revenue options has experienced minimal achievement.

Seven assumptions are ongoing with a portion of the efficiencies expected to be delivered over the next regulatory period. The status update identified that further savings are possible associated with:

- Simplified billing, tariff and regulatory processes;
- Streamlining of processes following the Business Transformation Program;
- Services are increasingly becoming centralised as the path to modernisation continues;
- Further savings are anticipated as supplier contracts are reviewed and renegotiated;
- Plans are in place for further rationalisation of ICT systems, negotiate better contracts with service providers, reduce expenditure on consultants and increase productivity of internal staff;
- Savings from the fleet review and sale of facilities have not been as significant as forecast. An asset rationalisation strategy is not yet complete; and
- Online services has improved and enabled automatic ordering as a result of modernised connections.

G-MW did not identify the expected savings associated with the ongoing initiatives or the impacts arising from the lower than anticipated savings outcomes.

Figure 2-3 – Status of assumptions underpinning G-MW's savings initiatives

| Assumption | Status | Description |
|--|---------------------|--|
| Connections Project delivered, total channel length reduced and GMID automated | Uncertain | Following the Mid Term Review, outcomes for the Connections Project will be determined in conjunction with the Federal and Victorian Governments. |
| Simplified billing, tariff and regulatory processes | Not yet implemented | Our proposed uniform tariff strategy for gravity irrigation services and the diversion tariff reforms will assist in delivering efficiencies over the fourth regulatory period. |
| Flattened structure and greater accountability | Achieved | A comprehensive organisational restructure has delivered a flatter, more efficient structure and enhanced accountability, to deliver long term efficiencies. |
| Alternate revenue options implemented e.g. hydro-electricity | Minimal achieved | GMW has identified a number of initiatives with potential for unregulated revenue growth, including solar panels and Zed Boats. However, only minimal revenue has been achieved to date. |
| Continuous-improvement process in place | Ongoing | Following the Business Transformation Program, we are continuing to streamline processes. |
| Optimisation of our district-based management | Ongoing | As we continue on the path to modernisation, our services are increasingly becoming centralised. |
| Supplier contracts renegotiated / reviewed | Ongoing | A review of specific contracts and services has resulted in lower on-going costs of \$1.6 million, however further savings are anticipated. |
| A reduction of full time staff over 5 years to reflect the changing nature of the business | Ongoing | An organisational restructure and reduction in full-time staff during the third regulatory period has saved more than \$6 million in ongoing opex. |
| Rationalisation of information and communications telephony systems | Ongoing | During the Business Transformation Program all ICT expenditure was centralised. To date, GMW has rationalised two ICT systems, with plans for further rationalisation. We are also negotiating better contracts with service providers, reducing expenditure on consultants and increasing productivity of our internal staff. |
| Review of GMW's fleet and depot facilities | Ongoing | We are now realising savings from fleet review, however the efficiencies have not been as significant as forecast. The asset rationalisation strategy is in place, but activities are not yet complete and sales of facilities have not proved to generate as much revenue. |
| Greater use of automation and technology to support customer service functions. | Ongoing | GMW has improved its online services, and enabled automatic ordering which is possible through the modernised connections. |

Source: G-MW Response to Commission's Draft Decision

2.3.4 Savings associated with 5:1 gravity tariffs

G-MW has revised the savings to be achieved from the transition to the uniform gravity irrigation delivery charge. The modified tariff reform involves 5 districts transitioning to a common tariff instead of all 6 districts.

G-MW estimated the total annual savings associated with a uniform gravity irrigation tariff based on all 6 districts of \$850,000 would reduce to \$400,000 under the modified tariff arrangement with 5 districts with a common tariff (5:1 uniform tariff). The timing of those savings was amended with the \$400,000 savings under the 5:1 uniform tariff to be delivered in 2018-19 compared to the \$850,000 savings being achieved in 2019-20.

Indec's high level review of the proposed savings of \$400,000 associated with the 5:1 tariff did not identify any grounds to view them as unreasonable. Indec identified grounds to recommend earlier achievement of the proposed savings.

Indec accepts that it is unlikely that G-MW can achieve significant savings in 2016-17 associated with the 5:1 uniform tariff. Indec recommends that a savings target of \$200,000 associated with the 5:1 tariff is included in 2017-18. It would be reasonable to expect G-MW to be in a position to start achieving some of the expected savings from the 5:1 tariff arrangement from 2017-18. Given that the 5:1 uniform tariff will be introduced in 2016-17, operational changes and the associated savings should be achievable in 2017-18. A two year delay in achieving the savings is not deemed to be a reasonable assumption.

2.3.5 Scope for further productivity improvements

Indec assessed if the proposed revised productivity savings made by G-MW are reasonable and if further scope of productivity savings are possible. Indec had regard to the information provided by G-MW in its response to the Commission's Draft Report. Indec sought further information from G-MW to assist in its assessment. The review of the revised information was of a high level nature and did not involve a detailed analysis of the productivity savings available.

Our analysis did not identify any evidence which suggested that the infrastructure modernisation and business transformation projects are to be abandoned or that the savings arising from these initiatives have been revised. G-MW at this point has not reviewed or modified its \$20 million savings target, of which \$17 million relates to prescribed services.

Indec acknowledges that the review of the infrastructure modernisation project are yet to be finalised and this introduces greater uncertainty to G-MW in the achievement of its savings program and the timing of those savings. However, we are of the view that G-MW has scope to target further productivity savings above those included in its revised submission. G-MW's status update on the savings program assumptions indicated that further savings are available from ongoing initiatives.

Over the next regulatory period, Indec is of the view that it is reasonable to expect G-MW to target an additional productivity improvement of \$3 million above those proposed by G-MW in its revised operating expenditure forecasts.

Figure 2-4 outlines the controllable baseline operating expenditure for the next regulatory period based on the revised target for further annual productivity improvements.

Figure 2-4 – Scope of further annual productivity improvements - revised

| Description | \$ millions | | | |
|--|--------------|--------------|--------------|--------------|
| | 2016-17 | 2017-18 | 2018-19 | 2019-20 |
| Controllable baseline operating costs | 86.1 | 82.6 | 81.2 | 79.9 |
| <i>Annual productivity improvements:</i> | | | | |
| Labour costs | -2.4 | 0.4 | 0.5 | 0.0 |
| G-MW productivity target | - | -0.6 | -0.6 | -0.5 |
| Operating savings since March 2015 | -1.1 | - | - | - |
| Savings due to 5:1 tariff reform | - | -0.2 | -0.2 | - |
| Scope for further productivity improvements | - | -1.0 | -1.0 | -1.0 |
| Total annual productivity improvements | -3.5 | -1.4 | -1.3 | -1.5 |
| Controllable operating costs | 82.6 | 81.2 | 79.9 | 78.5 |
| Annual productivity target as a % of controllable operating costs | -4.1% | -1.7% | -1.6% | -1.8% |

Source: Indec

With the revised additional productivity target of \$3 million, the annual productivity improvement as a percentage of controllable operating expenses ranges from 4.1 per cent to 1.6 per cent per annum.

The annual productivity targets are at the higher end of recent regulatory decisions however G-MW is experiencing a significant technological change to its infrastructure and operating environment which provides it with additional opportunities to deliver productivity improvements.

The recommended additional productivity target has been averaged over the last three years of the regulatory period or \$1 million per annum. This is in acknowledgement that G-MW has proposed a productivity improvement of \$3.5 million or 4.1 per cent in the first year (2016-17).

Including a higher productivity target than proposed by G-MW strikes a reasonable balance between the risks faced by G-MW in delivering the savings and protecting the interest of customers by ensuring that the benefits from cost reductions flows through to price reductions in the 2016-20 regulatory period.

Indec's original recommendation involved additional productivity savings of \$6.4 million above those proposed by G-MW in order for G-MW to achieve its \$17 million prescribed services savings target. Compared to its initial recommendation, Indec has reduced the additional productivity target by \$3.4 million over the four year regulatory period to account for the uncertainty associated with the review of the infrastructure modernisation project.

G-MW remains incentivised to deliver savings greater than those assumed for price setting purposes. G-MW would benefit financially from delivering the savings earlier with surplus cash flow generated from actual operating costs less than those assumed for price setting.

2.4 DROUGHT COSTS

2.4.1 G-MW's submission to Draft Report

The G-MW submission stated that the risk of dry conditions is likely in 2016-17 and beyond. G-MW expects that demand for additional services will increase during a period of dryer conditions. G-MW stated that higher costs associated with managing the following tasks could be incurred:

- greater number of water trade applications and enquiries;
- restrictions and enforcement activities in the unregulated diversions business;
- compliance activities in the gravity irrigation business; and
- lands at storages which are currently underwater.

G-MW estimated that an additional 31 full time equivalents (FTEs) would be required to resource the additional workload. G-MW stated that it would attempt to minimise the impact and phasing of any increased resources to manage the additional activities and estimates that the annual impact is in the order of \$3.1 million.

G-MW identified that it could incur additional operating expenditure associated with pumping water at Buffalo and Waranga Basins. G-MW stated that during the last drought, pumping of Buffalo and Waranga Basins was required on two occasions. G-MW estimates that the cost of pumping at these basins would be \$4.5 million.

2.4.2 Analysis of additional resources

It was agreed with the Commission that Indec would not complete its analysis on the reasonableness of G-MW's cost forecast for the additional resources associated with drought conditions. To complete this step, Indec would have required further information from G-MW to undertake the analysis and the Commission's deadlines did not include sufficient time for this.

2.4.3 Analysis of pumping costs

The Commission sought G-MW to substantiate the cost associated with a possible pumped tariff for the Waranga Basin.

Under guidance from the Commission, Indec's analysis of G-MW's data was of a high level nature and was based on comparing the estimates provided by G-MW against actual costs incurred in the previous drought event and escalating the actual costs to 2017-18 dollars.

G-MW provided Indec with actual costs incurred in 2006-07 for drought pumping at Waranga Basin and Buffalo Reservoir. G-MW escalated the 2006-07 costs to 2017-18 dollars and included a proposed cost.

2.4.4 Reliance of G-MW cost data

Indec's analysis has relied on the actual 2006-07 costs provided by G-MW as being true and correct. Indec has not audited or verified these costs.

2.4.5 Costs not incurred in 2006-07 drought event

Indec's scope did not include the review of the new cost items included in the G-MW's proposed costs which were not incurred during the 2006-07 drought event. For the purposes of this analysis Indec has accepted that the estimated costs for the new expenditure items are valid and are reasonable.

2.4.6 Estimated contingency

Indec's scope did not include the review of any contingent costs included in the cost estimates. Our analysis has not assessed if the contingency applied by G-MW for the drought pumping at Waranga Basin is reasonable for the project risks involved.

2.4.7 Drought pumping at Waranga Basin

Figure 2-5 below shows the drought pumping costs provided by G-MW for Waranga Basin.

Most of the proposed costs are based on the escalated 2006-07 historical cost with the exception of the storage shed planning (\$5,000) and the inclusion of a 20 per cent contingency (\$500,000) which G-MW described as relating to capital costs associated with pumps, bearing, switchboards etc.

G-MW showed the annual escalation factor applied to escalate actual costs however did not explain the basis of the escalation rate selected.

G-MW advised that the historical cost of drought pumping at Waranga Basin during the 2008-07 drought was \$2.5 million. G-MW estimates that the drought pumping costs in 2016-17 would be \$4.1 million.

Figure 2-5 – Drought pumping cost at Waranga Basin

| Description | \$ 000s | | | |
|--|-------------------------|----------------|-------------------|---------------------|
| | G-MW Proposal \$2016-17 | 2006-07 Actual | Escalating Factor | Escalated \$2016-17 |
| General project management | 150.0 | 111.4 | 3% | 149.7 |
| Security patrols and night operation duties | 110.0 | 82.4 | 3% | 110.8 |
| Major site - preparation and access | 185.0 | 112.7 | 5% | 183.6 |
| Major pump - installation | 115.0 | 69.8 | 5% | 113.7 |
| Major offtake - electrical works & generator | 755.0 | 461.5 | 5% | 751.7 |
| Major offtake - pump station fuel | 755.0 | 619.7 | 2% | 755.4 |
| Major offtake - pump operations | 70.0 | 49.9 | 3% | 67.0 |
| Minor offtake - site preparation and access | 117.0 | 78.5 | 4% | 116.2 |
| Minor offtake - electrical works & generator hire | 420.0 | 256.0 | 5% | 417.0 |
| Minor offtake - pump station fuel | 285.0 | 231.5 | 2% | 282.2 |
| Minor offtake - pump station de-commissioning | 16.0 | 11.0 | 4% | 16.2 |
| Minor offtake - pump operations | 70.0 | 45.4 | 4% | 67.2 |
| Minor offtake pump - installation | 500.0 | 340.9 | 4% | 504.6 |
| Storage Shed Planning | 5.0 | - | - | 5.0 |
| Sub-Total | 3,553.0 | 2,470.5 | | 3,540.2 |
| Contingency (20%) (Capex for pumps, bearings, switchboards etc.) | 500.0 | - | | 500.0 |
| TOTAL | 4,053.0 | 2,470.5 | | 4,040.2 |

Source: G-MW Response to Commission's Draft Decision

Figure 2-6 below shows the drought pumping costs provided by G-MW for Buffalo Reservoir.

G-MW advised that the historical cost of drought pumping at Buffalo Reservoir during the 2008-07 drought was \$492,500. G-MW estimated that the escalated historical pumping costs in 2016-17 would be \$739,100 however has proposed a cost of \$620,000 for a drought event during 2016-17.

G-MW showed the annual escalation factor applied to actual costs however did not explain the basis of the escalation rate selected.

Some costs not incurred during the previous drought event are included in the G-MW proposal such as security patrols and night operation duties (\$25,000), housing for pumps (\$70,000) and capital expenditure for pumps, bearing and switchboards (\$124,000). G-MW did not provide an explanation relating to these new costs.

G-MW did not explain why the proposed cost of \$65,000 for site preparation and access differs significantly to the escalated historical cost of \$417,600.

Figure 2-6 – Drought pumping cost at Buffalo Reservoir

| Description | \$ 000s | | | |
|---|-------------------------|----------------|-------------------|---------------------|
| | G-MW Proposal \$2016-17 | 2006-07 Actual | Escalating Factor | Escalated \$2016-17 |
| General project management | 35.0 | 25.0 | 3% | 33.6 |
| Security patrols and night operation duties | 25.0 | - | - | - |
| Site preparation and access | 65.0 | 256.4 | 5% | 417.6 |
| Pump installation | 20.0 | 16.0 | 5% | 26.1 |
| Electrical works & generator hire | 75.0 | 39.8 | 5% | 64.9 |
| Pump station fuel | 150.0 | 123.0 | 2% | 150.0 |
| Pump station de-commissioning | 6.0 | 5.3 | 3% | 7.1 |
| Pump operations | 50.0 | 26.9 | 4% | 39.8 |
| Housing for pumps | 70.0 | - | - | - |
| Sub-total | 496.0 | 492.5 | | 739.1 |
| Capex for pumps, bearings, switchboards | 124.0 | | | |
| TOTAL | 620.0 | | | |

Source: G-MW Response to Commission's Draft Decision

2.4.8 Recommended escalation factors

Indec recommends that escalation factors are based on actual observable changes in appropriate price indices. Indec has sourced escalation factors from the Australian Bureau of Australia (ABS) data series and recommends that the escalation factors shown in Figure 2-7 below are applied to adjust the historical costs to 2016-17 dollars.

Figure 2-7 – Observable escalation factors

| Nature of cost | Source | Table | Series |
|------------------------------|---|--|---|
| Wages and salary based costs | ABS 6345.0 Wage Price Index, Australia | Quarterly Index; Total hourly rates of pay excluding bonuses; Australia; Private, All industries | Quarterly Index; Total hourly rates of pay excluding bonuses; Australia; Private; All industries |
| Construction based costs | ABS 5206.0 Australian National Accounts: National Income, Expenditure and Product | Table 5. Expenditure on Gross Domestic Product (GDP), Implicit price deflators | Private; Gross fixed capital formation - Non-dwelling construction - New engineering construction |
| Fuel costs | ABS 6401.0 Consumer Price Index, Australia | Table 9. CPI: Group, Sub-group and Expenditure Class, Index Numbers by Capital City | Automotive fuel; Australia |

Source: Indec

Actual observable price indices are available to escalate costs to 2015-16 dollars and a forecast escalation rate is required for the 2016-17 year to escalate costs to 2016-17 dollars.

The estimate of the price escalation for the 2016-17 year is based on the actual rate of escalation over 2015-16 with the exception of fuel costs. As fuel costs have declined by 8.7 per cent over the 2015-16 year, a more conservative estimate is to assume that fuel costs remain constant over the 2016-17 year.

Figure 2-8 shows the calculation of the recommended escalation factors to be applied to adjust the 2006-07 actual costs to 2016-17 dollar estimates.

Figure 2-8 – Recommended escalation factors

| Nature of cost | Dec 2006 Index | Dec 2014 Index | Dec 2015 Index | 2014 to 2015 change | 2016 Index (forecast) | 2006 to 2016 Index |
|------------------------------|----------------|----------------|----------------|---------------------|-----------------------|--------------------|
| Wages and salary based costs | 91.7 | 119.9 | 122.3 | 2.0% | 124.8 | 136.0% |
| Construction based costs | 84.2 | 101.4 | 102.0 | 0.6% | 102.6 | 121.9% |
| Fuel costs | 79.8 | 96.4 | 88.0 | 0.0% | 88.0 | 110.3% |

Source: Indec

Price indices as at December in each year have been selected as a mid-point in the financial year to estimate the average price change over the financial year.

Figure 2-9 below shows the drought pumping costs at Waranga Basin as escalated by G-MW and applying the Indec recommended escalation factors.

The proposed costs, including the contingency, as escalated by G-MW are \$4.05 million compared to \$3.25 million based on the escalation factors recommended by Indec.

Figure 2-9 – Drought pumping costs - Waranga Basin

| Description | \$ 000s | | | | | |
|--|-----------------|----------------|-----------------|--------------------------|----------------------|---------------------------|
| | 2006-07 Actuals | G-MW Escalator | Indec Escalator | G-MW Escalated \$2016-17 | G-MW Proposal 2017\$ | Indec Escalated \$2016-17 |
| General project management | 111.4 | 1.344 | 1.360 | 149.7 | 150.0 | 151.5 |
| Security patrols and night operation duties | 82.4 | 1.344 | 1.360 | 110.8 | 110.0 | 112.1 |
| Major site - preparation and access | 112.7 | 1.629 | 1.219 | 183.6 | 185.0 | 137.3 |
| Major pump - installation | 69.8 | 1.629 | 1.219 | 113.7 | 115.0 | 85.1 |
| Major offtake - electrical works & generator | 461.5 | 1.629 | 1.219 | 751.7 | 755.0 | 562.3 |
| Major offtake - pump station fuel | 619.7 | 1.219 | 1.103 | 755.4 | 755.0 | 683.4 |
| Major offtake - pump operations | 49.9 | 1.344 | 1.360 | 67.0 | 70.0 | 67.8 |
| Minor offtake - site preparation and access | 78.5 | 1.480 | 1.219 | 116.2 | 117.0 | 95.7 |
| Minor offtake - electrical works & generator hire | 256.0 | 1.629 | 1.219 | 417.0 | 420.0 | 311.9 |
| Minor offtake - pump station fuel | 231.5 | 1.219 | 1.103 | 282.2 | 285.0 | 255.3 |
| Minor offtake - pump station de-commissioning | 11.0 | 1.480 | 1.219 | 16.2 | 16.0 | 13.4 |
| Minor offtake - pump operations | 45.4 | 1.480 | 1.360 | 67.2 | 70.0 | 61.7 |
| Minor offtake pump - installation | 340.9 | 1.480 | 1.219 | 504.6 | 500.0 | 415.4 |
| Storage Shed Planning | - | - | - | 5.0 | 5.0 | 5.0 |
| Sub-Total | 2,470.5 | | | 3,540.2 | 3,553.0 | 2,957.9 |
| Contingency (20%) (Capex for pumps, bearings, switchboards etc.) | - | | | 500.0 | 500.0 | 295.8 |
| TOTAL | 2,470.5 | | | 4,040.2 | 4,053.0 | 3,253.7 |

Source: G-MW Response to Commission's Draft Decision and Indec

2.4.9 Drought pumping at Buffalo Reservoir

Figure 2-10 below shows the drought pumping costs at Buffalo Reservoir as escalated by G-MW and applying the Indec recommended escalation factors.

The proposed costs, including the contingency, as escalated by G-MW are \$739,100 however G-MW has proposed a total cost of \$620,000.

Indec's analysis arrives at a total escalated cost of \$564,800. This is based on applying Indec's recommended escalation factors for all costs except the site preparation and access. As the site preparation and access cost as proposed by G-MW are \$65,000 and significantly below the historical cost of \$256,400, Indec has assumed that G-MW's proposed cost is a more appropriate estimate of the costs rather than the escalated historical figure.

Figure 2-10 – Drought pumping costs – Buffalo Reservoir

| Description | \$ 000s | | | | | |
|---|-----------------|----------------|-----------------|--------------------------|---------------|---------------------------|
| | 2006-07 Actuals | G-MW Escalator | Indec Escalator | G-MW Escalated \$2016-17 | G-MW Proposal | Indec Escalated \$2016-17 |
| General project management | 25.0 | 1.344 | 1.360 | 33.6 | 35.0 | 34.0 |
| Security patrols and night operation duties | - | - | - | - | 25.0 | 25.0 |
| Site preparation and access | 256.4 | 1.629 | 1.219 | 417.6 | 65.0 | 65.0 |
| Pump installation | 16.0 | 1.629 | 1.219 | 26.1 | 20.0 | 19.6 |
| Electrical works & generator hire | 39.8 | 1.629 | 1.219 | 64.9 | 75.0 | 48.5 |
| Pump station fuel | 123.0 | 1.219 | 1.103 | 150.0 | 150.0 | 135.7 |
| Pump station de-commissioning | 5.3 | 1.344 | 1.219 | 7.1 | 6.0 | 6.4 |
| Pump operations | 26.9 | 1.480 | 1.360 | 39.8 | 50.0 | 36.6 |
| Housing for pumps | - | - | - | - | 70.0 | 70.0 |
| Sub-total | 492.5 | | | 739.1 | 496.0 | 440.8 |
| Capex for pumps, bearings, switchboards | | | | | 124.0 | 124.0 |
| TOTAL | | | | | 620.0 | 564.8 |

Source: G-MW Response to Commission's Draft Decision and Indec

2.5 DIVERSION TARIFFS

2.5.1 Additional or new information

Indec sought additional or new data in relation to diversion services to identify if more recent or more detailed data was available to access the cost allocation made to small and large customers.

G-MW was unable to provide more detailed cost analysis or new cost data to support how costs are allocated between small and large customers.

2.5.2 Cost allocation to small and large customers

G-MW have rebutted the view that the Service Point Fee for small customers is seeking to recover the cost of metering. G-MW stated that the difference in Service Point Fees for large and small customers reflect the differences in costs to serve customers with and without meters. Costs differ between a site with a meter and a site without a meter. A site without a meter is defined as small and a site with a meter is defined as large.

Our earlier analysis identified that G-MW has estimated that a site without a meter has costs of \$91 per meter and a site with a meter has costs of \$304 per meter (see Figure 3.8 in the report titled 2016-20 Review of Water Prices for Goulburn-Murray Water - Tariff Structure Proposals). These estimates were based on the 2014-15 budget forecasts, the information used by G-MW for the analysis to support the Diverters' Tariff Strategy.

G-MW stated that the key driver of costs in relation to site compliance are service point related and most significantly are made up of checking service point compliance, meter reading, deeming of usage (in cases of no meter), maintenance and meter replacement.

G-MW emphasised that not all costs are incurred if a meter is not installed. Sites without a meter do not incur costs relating to meter maintenance and replacement or reading of the meter. Customers without meters however, incur other costs associated with estimated water usage.

G-MW believes that charging on the basis of service points or meter better reflects the way in which G-MW's cost are incurred and is more cost reflective than alternatives approaches. G-MW stated that this approach is simpler to understand and it will provide signals to customers who can rationalise service points on their properties.

Indec has not identified any new information or data to change its finding made in its original analysis.