Yarra Valley Water | a fresh approach

Response to Productivity Commission's Issues Paper "Australia's Urban Water Sector"

Yarra Valley Water - November 2010

Introduction

Yarra Valley Water welcomes the opportunity to respond to the Commission's Issues Paper. We support further reform of the Australian water industry where it delivers improved outcomes to customers balanced with sustainable environmental outcomes.

The Commission's Issues Paper is very comprehensive and we have elected to focus on some key issues and opportunities for improving the performance of the urban water sector. These are:

- Section 4: Efficiency and other objectives
    - Objective for water utilities
- Section 5: Supply of water and wastewater services
    - Water supply demand planning principles
    - Real options approach
    - Integrated strategies for water sensitive cities
    - Experience with integrated water management
- Section 6: Consumption and pricing
    - Tariffs and customer choice
- Section 7: Scope for competition and contestability
    - Lessons from Melbourne retail water industry under comparative competition
    - Competition and contestability
        - Water grid
        - Third party access regime
        - Retail competition
        - Comparative competition
- Section 8: Tools and options for achieving reform
    - Case for reform – Australia's productivity performance and urban water sector reform
    - Governance and institutional arrangements

Section 4 Efficiency and Other Objectives

Setting Objectives

Commission's context and questions

The Commission's Issues Paper stated:

> *"It is necessary to have a clear understanding of what objectives governments should set for the urban water sector before the case for reform can be assessed and reforms options designed."* [page14]

Issues Paper Questions:

> *What are the objectives that should guide reform of Australia's urban water sector? Should the objectives be the same across all urban water systems?* [page15]

Response

We believe that the key reform objective for the water industry should be to promote efficient investment in, and efficient operation and use of, water for the long term interests of water customers with respect to price, quality, reliability and security of supply of water balanced with sustainable environmental outcomes.

In a broader sense the provision of water services should underpin the liveability and productivity of the communities we serve. Safe drinking water and effective sanitation are cornerstones of a healthy and productive society.

Section 5 Supply of Water and Wastewater Services

Supply augmentation planning and decision making

Commission's context and questions

The Commission's Issues Paper stated:

> *"At present, the need for investment to augment urban water supply is usually determined by state or local governments through planning processes. This is different from the situation with most goods and services, where prices indicate the need for additional investment by private suppliers in a decentralised market (sometimes this occurs within an institutional and regulatory framework established by governments). Whether centralised planning should continue in the long term is a question that will be considered by this inquiry....."* [page17]

Issues Paper Questions:

> *Are all supply augmentations options considered, or are there implicit or explicit 'policy bans' on certain options?*
>
> *Should an options approach to supply augmentation be taken? Is this done at present?* [page19]

Response

Victoria has a comprehensive water planning framework as shown in the diagram below[1].

Short and long-term planning processes in Victoria

The key planning instruments for the Melbourne water industry are:

- 5-yearly Melbourne water supply demand strategy which sets out the demand and supply balance for the water supply system with a 50-year outlook. Transparent

[1] Victorian Department of Sustainability and Environment, 2010, *Draft Gippsland Sustainable Water Strategy for community comment*, August, p 56

monitoring is planned to occur through the Government's recently announced 'Water Security Framework' where all Victorian water utilities will be required to publish a 5-year outlook (and updated every year) to determine whether five years of water security can be guaranteed or long-term actions need to be commenced.[2]

- 10-yearly Central Region Sustainable Water Strategy which sets out a plan for the sustainable use of water in the Central Region of Victoria which includes West Gippsland, Central Highlands, Barwon, Port Phillip and Westernport regions (covers Melbourne). The plan takes account of environmental and consumptive needs as well as the implications of climate change, population growth and the health of rivers, aquifers and estuaries. The first Central Region Sustainable Water Strategy was completed in 2006.

These planning processes involve significant community consultation and, ultimately, ensure the right balance is struck between supply and demand measures and consumptive and environmental demands on our water resources.

We believe resource planning should be regionally based, not dictated by utility boundaries. The Sustainable Water Strategies in Victoria are a good example of such planning. Water utilities themselves should implement local supply/demand initiatives that are consistent with the broad regional plan.

The overarching objectives for a metropolitan water supply demand strategy should include:

- ensuring safe water supplies
- meeting community expectations in relation to supply security
- improving environment health
- contributing to a prosperous economy
- promoting a healthy community and liveable city
- becoming a water sensitive city (including efficient use of water).

Principles that are desirable in the development of water supply-demand plans, consistent with a sustainable water management approach, include.

- cater for uncertainty
- options will be assessed on triple bottom line basis
- options will take account of customer and community preferences
- people have a right to water (i.e. water is essential for life)
- engage the community effectively
- preferred solutions should be those with the lowest community cost (taking into account the value of externalities).

The Commission's Issues Paper outlined the 'real options' approach as *"explicitly taking uncertainties into account in a way that recognises that important information is likely to*

[2] Victoria Government Press Release by Premier, Thursday 28 October 2010, refer http://www.premier.vic.gov.au/newsroom/12561.html

become available over time".[3] We believe that the implementation of a real options type approach is prudent to deal with the future challenges of climate change (including the associated uncertainty and the potential for greater volatility with weather) and population growth. We note this approach is consistent with the Victorian Government's 'Water Security Framework', which was previously described on page 4 of this Response.

Integrated Water Management

Commission's context and questions

The Commission's Issues Paper stated:

> *"The inquiry terms of reference require the Commission to have regard to emerging water management practices, including integrated water management. Integrated water management is related to the notion of 'water sensitive cities' and the two terms are sometimes used interchangeably …."* [page 21]

Issues Paper Questions:

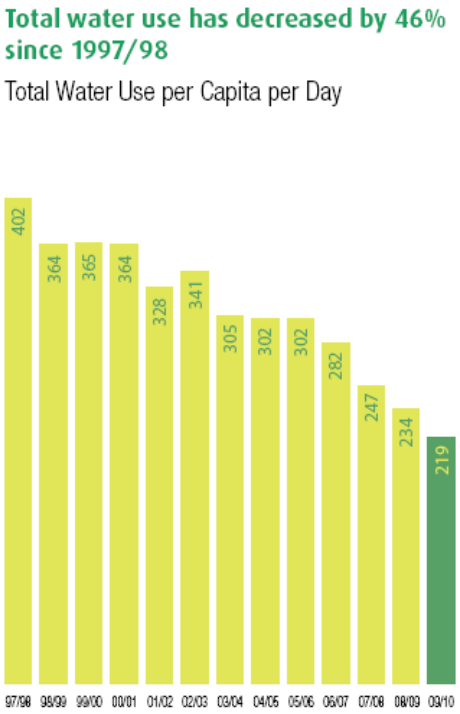
> *Are there efficiency gains available from the wider adoption of integrated water management? If so, what is preventing these from being realised?*
>
> *What examples are there of good practice in integrated water management?* [page 22]

Response

In recent years, Melburnians have experienced the difficulties of an extended drought (including severe ongoing water restrictions), while the city has grown rapidly. Most Melburnians have accepted the view that climate change is already impacting our city and will continue to affect our city in the future. The water industry's environmental impacts are dominated by river extractions, greenhouse gas emissions (mainly from energy use) and nutrient discharges from sewage treatment plants.

Melbourne has achieved significant water savings through a combination of changes in customers' water use behaviours, appliance efficiency, potable substitution and water restrictions. For Yarra Valley Water, total water use has dropped by 46% since 1997/98 – refer diagram below.

[3] Australian Government Productivity Commission Issues Paper, 2010, *Australia's Urban Water Sector, September,* p.19.



Clearly over the last 10 years, there has been a shift in how the community values water and attitudes to how water is used. Looking ahead it is important that this established water conservation ethos is maintained as it delivers multiple benefits in the form of reduced water extractions from rivers, energy savings (and lower greenhouse gas emissions) through lower water use and deferral of major supply augmentations.

Solutions to problems will lie in integrating strategies to provide for more water sensitive cities and communities including traditional centralised supply solutions, demand management solutions and decentralised water solutions. Examples of some of the Integrated Water Management solutions being implemented by Yarra Valley Water are contained in Appendix 1.

One of the key issues affecting the pursuit of Integrated Water Management has been the challenge of recognising and accounting for externalities. Yarra Valley Water has developed a community costing framework where material externalities are monetised. The focus is on lowest community cost rather than just water utility benefits and costs. One of the other key insights we have formed in developing Integrated Water Management servicing solutions is that the location of the area to be serviced will heavily influence the viability of an alternative approach to traditional servicing (such as proximity to sunk infrastructure with spare capacity, distance from catchments, elevation etc).

Section 6 Consumption and pricing

Scope for More Efficient Pricing

Commission's context and questions

The Commission's Issues Paper stated:

> *"Pricing of water and wastewater services may occur at both the bulk and retail level. Policy makers may have a number of objectives for pricing, with the ultimate goal of maximising benefits to consumers…."* [page 23]

Issues Paper Questions:

> *How do current water and wastewater pricing arrangements perform against the efficiency, equity/social and other relevant objectives? Is there scope to improve the efficiency of pricing? How would this best be achieved?*
>
> *Are consumers willing to pay more for water in order to forego water restrictions? How much would they be willing to pay?*
>
> *Should more flexible (scarcity-based) pricing be introduced to assist in managing demand in the face of the variability of rainfall-dependent supply?*
>
> *What are the environmental externalities of water and wastewater service consumption? Should these externalities be accounted for in water and wastewater pricing? If so, how would this be best achieved?*
>
> *To what extent are efficiency gains in the supply of water and wastewater services dependent on pricing reform (that is, on obtaining better price signals to guide supply augmentation investment)?* [page 25]

Response

Due to the significant impacts of climate change and drought, Melbourne has introduced or is about to introduce a number of new sources of supply into its water supply system; namely, the150 GL desalination plant, re-introduction of Tarago Reservoir (around 25 GL per year) and up to 75 GL from water savings arising from the Northern Victoria Irrigation Renewal Project. These water supplies supplement Melbourne's traditional water supplies from the Thomson and Yarra catchments. Water prices are increasing to help fund this necessary infrastructure; however, Melbourne's water prices compare favourably amongst Australia's capital cities.

There has been substantial debate across Australia about different tariff regimes and the possibility of customer choice in these. There are a number of considerations in moving to a regime where more choice is provided. They are part regulatory and part structural and currently result in the sector traditionally applying one-size-fits-all to pricing, service and innovation. These considerations include powers of pricing regulators to effectively dictate tariff policy and the expectation by many customers of equity in delivery of water and sewerage services including common tariff structures.

Another consideration in terms of tariffs is the growing demand by customers to have more control over their bill through decreasing the fixed component and increasing the volumetric component. Regulators and the principles applied to pricing need to take into account the preferences of customers in terms of tariff structures. Any transition in tariff structures needs to be carefully managed over time in order to avoid significant impacts on any particular customer segment.

Section 7 Scope for Competition and Contestability

Competition and Contestability in Australia's Urban Water Sector

Commission's context and questions

The Commission's Issues Paper stated:

> *"Historically, there has been limited competition and contestability in Australia's urban water sector. Competitive pressure has generally been limited to the contracting out of construction, maintenance and other services by monopoly water businesses on a competitive basis.*
>
> *In recent years, areas of the urban water sector have started moving toward greater use of market-based approaches."* [page 29]

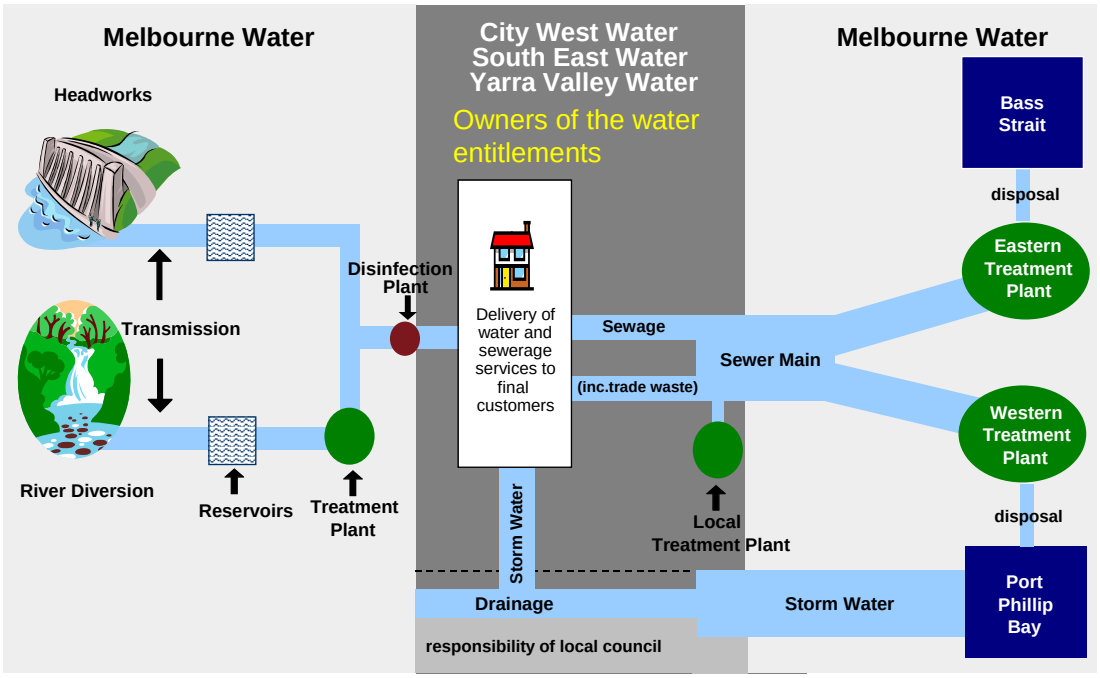
Issues Paper Questions:

> *What lessons can be learned about the costs, benefits and scope for introducing competition-based reforms from developments in the Australian urban water sector to date?* [page 30]

Response

The current Melbourne water industry structure was implemented in January 1995 and was seen as a *"crucial step towards revitalising services to customers and overcoming the debt and inefficiencies that have affected Melbourne's water industry in the past"*[4]. The key structural reform saw the separation of wholesale and retail functions, with the creation of separate retail utilities that *"compete by comparison, thus stimulating the sorts of efficiencies in service and cost management that are witnessed between competing private sector businesses"*[5]. Melbourne Water manages the wholesale function (comprising headworks and major sewage treatment works). Since October 2006, the Melbourne retail water utilities have jointly owned Melbourne's bulk entitlements associated with the traditional Yarra/Thomson water sources and, more recently, the rights to the use of water associated with the new sources of supply[6]. The diagram below shows the separate responsibilities.

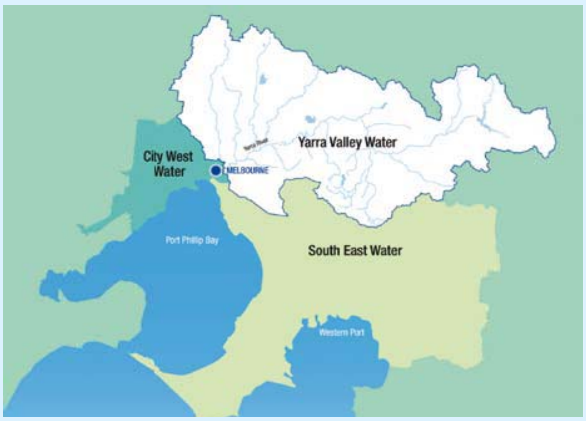
[4] Department of the Treasury, 1995, *Reforming Victoria's Water Industry – The Restructured Metropolitan Industry* January (preface)
[5] Ibid, p3
[6] Most notably water from water savings from the Northern Victorian Irrigation Renewal Project (up to 75 GL per year), reintroduction of Tarago Reservoir (up to 25 GL per year) and desalination plant (up to 150 GL per year)



Yarra Valley Water is the largest retailer providing water and wastewater services to the northern and eastern areas of Melbourne.

Yarra Valley Water

- Melbourne's largest water retailer/distributor
- Serving 1.67 million people (680,000 customers)
- Revenue $555 million per annum
- Assets $3.2 billion
- 9,390 kms of water mains
- 8,871 kms of sewer mains
- 9 local sewage treatment plants
- 400 employees



Since 1995, the reform of the water industry in Melbourne has been characterised by:

- Strengthening accountabilities for water and sewerage service delivery (e.g. separation of wholesale and retail functions; this has resulted in a strong focus on customers by the retail utilities)
- Gradual strengthening of commercial disciplines (e.g. introduction of skills based Boards, tax equivalent regimes and dividends, contracting out of non-core activities; these have delivered strong corporate governance and significant efficiency gains)
- Transition to independent regulation, with greater transparency on decision making and scrutiny of performance (e.g. independent environmental and drinking water quality regulation, price regulation and cost based pricing, transparent disclosure and performance reporting; these have created very strong discipline in long term planning and customer consultation)

- Creation of explicit obligations in customer service and environmental performance (e.g. customer charters; this has provided clear, unambiguous obligations on water utilities)
- Introduction of elements of competition (e.g. comparative competition regime; this has provided a major spur for innovation and continuous improvement)
- Improvements in planning (e.g. Sustainable Water Resource Strategies; striking the right balance between supply and demand) and water allocations (e.g. Bulk Water Entitlements to retail water utilities; potentially facilitating efficient water transfers based on sound economic principles).

On a range of benchmarks, the water industry in Melbourne delivers world class outcomes. These benchmarks include:

- Independent research indicating the Melbourne water retailers are on the efficiency frontier[7]
- Benchmarking results demonstrating Yarra Valley Water's performance and efficiency[8,9]
- Best practice consultation and stakeholder engagement undertaken by Yarra Valley Water
- Yarra Valley Water's extensive track record in innovation
- International and national recognition of Yarra Valley Water's achievements in service
- Yarra Valley Water's strong performance in environmental sustainability.

The reforms implemented so far have all contributed to these performance outcomes. The next round of reforms should build on these, in the context of the challenges that lie ahead.

Optimum Size

The effectiveness of the retail water utilities in delivering quality services at least cost and the extent to which the retail water utilities have exploited opportunities to improve their productivity and effectiveness is an important consideration in assessing reform options. As previously indicated, the Melbourne retailers are on the efficiency frontier. In Yarra Valley Water's case, there have been significant efficiencies captured.

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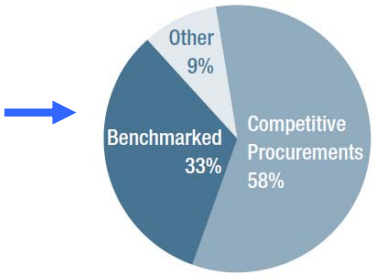
[7] For example:
• Coelli, T & Walding, S, 2005, *The Performance Measurement of the Australian Water Supply Industry, Centre for Efficiency and Productivity Analysis,* Water Paper 01/2005, School of Economics, University of Queensland
• De Witte K. and Marques R.C., 2007, *Designing incentives in local public utilities, an international comparison of the drinking water sector,* (preliminary draft paper)
Note: Yarra Valley Water and City West Water are excluded from the sample as outliers by the criteria of the study, apparently because they are beyond the efficiency frontier

[8] For example:
• Awwa Research Foundation Benchmarking Water Utility Customer Relations Best Practices February 2006
• Halcrow Management Sciences Ltd Melbourne Metropolitan Water Industry Efficiency Review, 31 March 1999
• CH2MHILL, Asset Management Audit 2001/02 – Yarra Valley Water Ltd. Final report prepared for Essential Services Commission and
Department of Natural Resources and Environment, October 2002
• Halcrow Management Sciences Ltd, Essential Services Commission 2004 Price Determination Project, July 2002
• Water Services Association of Australia Asset Management Benchmarking Project, 2004
• Office of Water Services (Ofwat) International comparison of water and sewerage services 2001–02 report, March 2004

[9] McKinsey and Company, 2010*, 21st century water utility initiative (2009/10),* which compares twelve major water utilities from across Europe, America, Middle East and Asia

As can be seen from the following breakdown of Yarra Valley Water's projected costs (2012/13), only 14 per cent relates to controllable operational expenditure, and the majority of this (58%) is outsourced to the private sector. Bulk charges comprises 56% of our total costs.

Breakdown of 2012/13 YVW projected costs (based on ESC's 2009 price determination)	$ M	Percent of Total
Controllable Operating Expenditure	90.1	12%
Core Operating Expenditure	0.0	0%
Growth (since 2003/04)	12.0	2%
Increased Service Standards / New Obligations	4.4	1%
Total Controllable Operating Expenditure	106.6	14%
Licence Fees	0.9	0%
Environmental Contribution	15.9	2%
Melbourne Water's Bulk Charges	415.8	56%
Return on Assets	155.0	21%
Regulatory Depreciation	49.6	7%
Benchmark Tax Liability	0.0	0%
Total	743.6	100%



Yarra Valley Water's controllable operating expenditure per property ratio is the one of the lowest – refer National Performance Report 2008/09 Urban Water Utilities[10]. Previous studies[11] have also determined water provision in Melbourne is amongst the lowest cost in Australia.

As a retailer, Yarra Valley Water's costs are primarily volume driven – such as the volume of water main bursts that need to be repaired, the volume of meters to be read and bills to be produced, the volume of phone calls to respond to etc. As shown in the table above, the greatest area for cost optimisation is in the area of bulk supply.

Analysis provided in Appendix 2 shows the current retail water utilities in Melbourne are at or near to the right size to achieve economies of scale. Numerous studies have been conducted throughout the world on the potential for economies of scale or scope in water utilities[12]. The common conclusions from these studies are:

- For all utility sizes, there are economies of scale and scope associated with greater network density
- Outside the situation of very small suppliers, there are likely to be diseconomies of scale. That is, as utilities get larger, costs actually increase because of the complexities of larger organisations
- The retailers in Melbourne appear to be around or slightly larger than the apparent optimal size. [13]

[10] Australian Government National Water Commission and Water Services Association of Australia, *National Performance Report 2008-09 Urban Water Utilities*, April, p85
[11] Marsden Jacob Associates, 2006, *Securing Australia's Urban Water Supplies: Opportunities and Impediments,* Research notes p52, report for the Department of Prime Minister and Cabinet, November
[12] IPART reviewed many of the same studies and reached a similar conclusion, refer *Literature Review – Underlying costs and industry structures of metropolitan water industries,* September 2007
[13] IPART revisited many of the same studies and reached a similar conclusion, refer Literature Review – Underlying costs and industry structures of metropolitan water industries, September 2007

Studies generally show that water utilities of comparable size to those in Melbourne are already at scale.[14]

- Ofwat, in reference to United Kingdom water companies that serve populations from 90,000 to seven million customers, concludes there *is "…an absence of scale economies at the level of the total appointed businesses"*[15]. Some studies have shown that above a certain size of water business there are diseconomies of scale[16]
- The Centre for Efficiency and Productivity Analysis has undertaken some econometric work which indicated that the three Melbourne retail water utilities were either at or near the *'efficiency frontier'*[17]
- An international study compares the performance of water companies under various industry regimes. The Melbourne retailer water utilities were found to be on the efficiency frontier[18].

On the matter of economies of scale, more recent academic research finds evidence there are economies of scale from merging small suppliers. It is generally more equivocal about scale economies from suppliers around the size of retail water utilities in Melbourne. There is a suggestion that diseconomies may set in at sizes greater than this. The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) reviewed many of the same studies and reached a similar conclusion.[19]

IPART quotes a study that advises:

> *"…while the findings from the study might indicate that a more efficient structure than the one observed at present is possible, the transaction costs associated with changing the current structure should not be ignored and one would want to be a lot more confident of the benefits."*[20]

IPART concludes that evidence for economies of scope is mixed, showing either economies or diseconomies depending on the study.

[14] Kim, H.Y. and Clark, R.M., 1988, *Economies of Scale and Scope in the Water Supply,* Regional Science and Urban Economics, 18, p495
[15] Ofwat, 1993, *Comparing the Cost of Water Delivered: Initial Research into the Impact of Operating Conditions on Company Costs*, Research Paper Number 1, March
[16] Garcia, S. and Thomas, A., 2001, *The structure of municipal water supply costs: application to a panel of French local communities,* Journal of Productivity Analysis 16 (pp5-29) and Mizutani, F. and Urakami, T., 2001, *Identifying network density and scale economies for Japanese water supply organizations*, Papers in Regional Sciences 80, pp211-230
[17] Coelli, T and Walding, S, 2005, *The Performance Measurement of the Australian Water Supply Industry, Centre for Efficiency and Productivity Analysis,* Water Paper 01/2005, School of Economics, University of Queensland.
[18] De Witte, K. and Marques, R.C., 2007, *Designing incentives in local public utilities, an international comparison of the drinking water sector.* (preliminary draft paper)
[19] Literature Review – *Underlying costs and industry structures of metropolitan water industries*, September 2007
[20] Ballance AJ and Taylor A, 2005, *Competition and economic regulation in water – the future of the European water industry*, IWA Publishing – London UK, p61

Competition in Urban Supply Value Chain

Commission's context and questions

The Commission's Issues Paper stated:

> *"Based on reform experiences in other network utility industries, the particular characteristics of the urban water sector, and the economic analysis undertaken on this issue to date, there appear to be opportunities for developing contestability or even competition in:*
>
> - *bulk water supply services*
> - *water and wastewater retailing*
> - *the allocation and exchange (or trade) of water and wastewater services*
> - *wastewater treatment and disposal (including recycling)."* [page 30]

Issues Paper Questions:

> *To what extent is the scope for competition and/or contestability in the different elements of the urban supply chain?* [page 31]

Response

Our response in relation to competition covers:

- upstream competition
- third party access
- retail competition
- competition by comparison

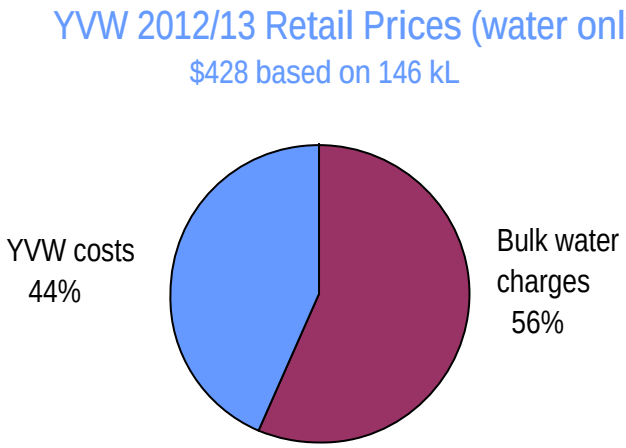
Upstream competition

Recent Victorian investment in water infrastructure has included:

- Goldfields Superpipe which connects Bendigo and Ballarat to the Goulburn supply system
- Food Bowl Modernisation Project (also called Northern Victoria Irrigation Renewal Project) which saves water from irrigation upgrades , some of which is stored in Lake Eildon on the Goulburn River
- Desalination plant and pipeline which will connect towns in Western Port and South Gippsland to Melbourne
- Sugarloaf Pipeline which connects Melbourne to the Goulburn River downstream of Lake Eildon
- Melbourne to Geelong Pipeline which connects Geelong to Melbourne

These water infrastructure works form a Central Water Grid that presents significant opportunities and potential benefits. Smart management of this Grid could boost productivity and lower the cost of bulk water by revealing a value on this precious resource from the various sources and transferring water between different water systems to where it is needed most.

The cost of bulk water[21] comprises around 56% of the water component of Yarra Valley Water's average residential water bill, as shown below. This cost is passed on to our customers through retail prices.



We believe the Central Water Grid has the potential to lower these wholesale prices[22] and therefore retail prices through facilitating the valuing of all water sources to enable optimal balancing of supply and demand.

We also consider that the Central Water Grid has the potential to deliver other benefits as it:

- can help the water industry better service the needs of Melbourne and regional communities
- will improve water security and drought management for all connected to the grid
- may lead to further opportunities to optimise consumptive use and environmental outcomes.

Generally, we believe that the water utilities directly responsible for customers should hold the bulk water entitlements on their behalf. Where possible these customer-focused water utilities should manage their own water supply-demand balance in accordance with obligations reflecting central, larger scale plans (such as the Regional Sustainable Water Strategies in Victoria). This should result in a more innovative and dynamic industry better able to create tailored local water solutions based on local conditions. This transfer of bulk water entitlements from the traditional wholesale "holder" to the retailer has already occurred in Melbourne.

Other important issues arising from the introduction of new water supplies into the Melbourne water supply system and the requirement to undertake more complex planning include:

- the need for retail water utilities to actively manage the customer impacts related to changed aesthetic water quality (e.g. taste and colour) from periodically changing water sources

[21] This is the water only component and does not include sewerage costs
[22] After completion of the new supply projects such as the desalination plant and compared to a future without smart management of the Central Water Grid.

- the need to manage rivers, which often form part of the State water system, for the benefit of the environment and long term amenity of communities in conjunction with their water transfer requirements
- the opportunity to optimise environmental outcomes through choice of water sources without significantly impacting on consumptive use demands
- the adoption of decentralised local water solutions where they are the least community cost solution in preference to traditional centralised solutions.

Third Party Access Regime

A third party access regime is planned to be implemented in Victoria[23]. The implementation of this regime will enable new entrants to use the water and sewerage infrastructure to deliver water and sewerage services to customers. We support the introduction of such a regime as it is likely to provide benefits to some Melburnians through lower prices.

Retail Competition

Retail competition could involve either or both of non residential (commercial and industrial) and residential customers and involve the entry of new retailers. The only known competitive retail market involving the water industry is in Scotland for non residential customers.

A common view of energy industry restructuring and competition is that it has lead to more choices and lower bills for customers. There are dissenting views, most prominently from Professor Catherine Waddams[24]. Professor Waddams has studied the liberalisation of the energy market in United Kingdom from the perspective of customer participation in the market. The regulator points to around half of all customers switching supplier as evidence that the market is working. Waddams contends that this is often not to the benefit of the switchers, many of whom actually sign up to worse deals. The choices have not improved as the market has progressed. Customers who benefited earlier in the process may have done so because of the unwinding of cross-subsidies. Because the products are essentially homogenous, most of the differentiation between suppliers is on price. Competition on price is constrained, however, by other factors. Prices are driven to a great extent by the cost of the suppliers' fuel stock. Another constraint on competition is the consolidation of the industry. Early new entrants have exited the market and original incumbents have merged or been taken over by a small number of owners. This concentration is suggested for a lack of competitive vigour, allied to a mistaken belief by non-switching customers that their incumbent will price match competitors.

Professor Waddams' research finds that there are net losses in welfare. Switching costs contribute to this and the most effective way of capturing a customer is also the most expensive – door step sales.

There has been no significant net reduction in regulatory involvement in the industry. Professor Waddams characterises a decision about whether or not to liberalise as a choice between imperfect regulation and imperfect competition. She suggests that if the United Kingdom hadn't

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[23] Victorian Government Response to the VCEC Final Report, 2008, *Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector,* July, p10

[24] Director of the ESRC Centre for Competition Policy, University of East Anglia. UK

References:

1. Spoilt For Choice: The Costs And Benefits Of Opening UK Residential Markets, University of California, Berkeley, 2004
2. Consumer Choice and Industrial Policy, ACCC 2005 regulatory conference, Queensland, July 2005
3. The Future Of Retail Energy Markets, The Energy Journal, December 2008

done it already then it might not be worth doing. However, it is currently too costly to reverse. The range of tariffs for non-residential customers increased markedly once choice became available to them. It would be helpful to undertake a similar study in the Australian energy market before launching into water market competition.

Given the Waddams evidence, at the very least, a thorough evaluation of costs and benefits of retail competition is required before proceeding upon this path.

The Scottish water industry has many similar characteristics to that of Victoria. It is state-owned and independently regulated. Scottish Water, the sole water utility, has been carrying out a significant capital program to meet environmental standards. Scottish Water has been under economic regulation since it was founded in 2002 and the regulator, Water Industry Commission of Scotland, has been on a journey of substantially improving its efficiency and customer service through comparative competition with the English water companies.[25] Public perception has been that water is a public good with no need for differentiation in a market.

Reforms were introduced in 2008 that ring-fenced a separate retail business within Scottish Water, 'Business Stream' to provide retail services to all non-residential customers. A licensing and market registration regime was introduced at the same time that allowed new entrants to provide similar services to those customers. Since then, five entrants have obtained retail licences and are actively competing in the market to supply non-household customers. Business Stream, has responded with improved customer focus and a wider range of products and services. A key strategy of all the retailers has been to improve customer satisfaction through working to reduce the water bills of their customers through lowering water use. This has required the regulated Scottish Water to reduce costs by a commensurate amount to the revenue lost from reduced bulk water sales to maintain profitability. It is noted that the implementation of the Water Management Plan program for large water users in Victoria has essentially achieved the same outcome.

Given the above evidence, we are of the view that the benefits of retail competition are still to be proven for the water industry. The Scottish non-residential retail market is still in its infancy (having been established in April 2008) with no definitive study as yet of the net benefits of the regime.

Another consideration regarding retail competition relates to service delivery. Economic theory suggests that to promote competition the distribution (monopoly) element would need to be separated from the retail (contestable) element. Our latest estimate of the retail component of the value chain is that it is less than 3% of the total which means that it will not have a material impact on prices if there are reductions in costs. Furthermore our market research indicates primary drivers of customer perception of value relate to services provided by the distribution function of our operations, such as water quality, water pressure, supply reliability and service responsiveness for emergency faults.

Currently, our retail function drives improvements up the value chain in our distribution function that increase customer satisfaction (for example, we have implemented a "keeping the

[25] For example, as part of the price setting for 2010-15 *Staff Paper 13 - Cost base assessment* sets out the Commission's approach to assessment of Scottish Water's capital procurement efficiency by using Ofwat's cost base for benchmarking against the English and Welsh utilities. For ongoing comparative competition, the Commission's *Customer Service Report 2008-9* examines the performance of Scottish Water against the English and Welsh utilities. These and other examples can be accessed at www.watercommission.co.uk.

customer in the loop" process involving better communication with customers as to status of rectification works – e.g. fixing a sewer blockage, restoring supply after a burst etc - and checking in on whether their expectations are being met etc). This would be difficult to implement if there were many retailers sharing the same distributor, where you would get a lowest common denominator approach. The evidence with retail energy In Victoria suggests the energy retailers have found it very difficult to obtain improvements in a distributor's customer service (recently the Energy and Water Ombudsman Victoria devoted a full day conference on this very issue).

Therefore, a major consideration in the case for competition is the loss of effective coordination in the key areas of customer service. In the case of water, a separation of the water retail function from the distribution function impacts an area of service where the costs are a very low component of the overall bill (material efficiency opportunities are elsewhere, especially wholesale supply), and it is an area of the service that has a small impact on overall satisfaction. Nevertheless, we believe it is appropriate for water utilities to continually engage with customers to identify any possible improvements in billing practices that would improve customer satisfaction.

Comparative Competition

As indicated on page 10 of this Response, 'competition by comparison' has been an important part of the incentive framework for the Melbourne retail water utilities since 1995 aimed at improving outcomes. It has also been an important part of the economic regulation framework for the water companies in England and Wales since 1989[26] and for Scottish Water.

The original objective[27] in introducing comparative competition in Melbourne was to improve customer service and cost efficiency. Service improvement and cost reduction remain as fundamental objectives for the water industry, and comparative competition is one of the best ways to achieve this.

> *"If and when comparative competition is properly implemented, it provides a tough management environment which over time leads to improved services and lower cost. In Scotland there is absolutely no doubt Scottish Water would not have made the 45 percent operating savings and big strides in capital efficiency and customer service without tough comparative regulation. It provides a no hiding place environment which is so commonly the case in the public sector.*
> *Being bottom of service table or top of prices tables is not a place most people like to be. In many ways, comparative competition provides a better deal for customers than weak competitive markets dominated by a few players."*
> Dr Jon Hargreaves, Former Chief Executive, Scottish Water

> *"The comparative competition regime has successfully driven efficiency and service improvements [in England and Wales]".*
> Keith Harris ex Wessex Water[28]

The competition by comparison regime in Melbourne drove significant gains in customer service and efficiency in the immediate years following its introduction in 1995. Having reached

[26] Ofwat, 2009, *Service and delivery – performance of the water companies in England and Wales 2008-09*
[27] *"The key structural reform sees the creation of separate businesses that will compete by comparison, thus stimulating the sorts of efficiencies in service and cost management that we are used to witnessing between competing private sector businesses"*, Department of the Treasury, 1995, *Reforming Victoria's Water Industry – The Restructured Metropolitan Industry*
[28] Harris, Keith, 2010, *Moving with the times*, Utility Week, 3 September, p 19

the efficiency frontier, the emphasis in recent years has been on innovation, diverse approaches and building performance oriented workplace cultures.

Comparative competition has created a dynamic environment leading to innovation and creativity. It is Yarra Valley Water's experience that individuals respond positively to the challenges presented by comparative competition, and this has helped in building an achievement oriented and vibrant culture, which helps retain and attract talented staff.

> *" Yarra Valley Water is a dynamic, energised organisation with highly engaged people whose eyes are firmly on the goal of achieving the highest levels of effectiveness and efficiency for their customers"*
> Professor Dexter Dunphy, *In Great Company* (2006)

The Independent Pricing and Regulatory Tribunal (NSW) has noted:

> *" Anecdotal evidence suggests that the process of restructuring the Melbourne water industry revealed many opportunities for improving productive efficiency and introduced a more productive workplace culture."*[29]

One of the unique aspects of the regime in Melbourne is the fact that the retailers operate within one jurisdiction. This provides the Government (as owner) and regulators with greater capacity to compare performance than would otherwise be the case. For example, while comparisons can be made with interstate utilities – different regulatory regimes, local conditions and customer expectations – can make comparisons difficult. In addition, localised comparators provide additional impetus in that comparative performance and innovations are more readily observed, i.e. when one retailer innovates it is difficult to ignore as the retailers share a common regulator, owner, stakeholders and media environment.

Yarra Valley Water believes that one of the major benefits of comparative competition is the impetus it provides for innovation and the diverse approaches that are taken to solve common problems. The most successful approaches over time are validated and adopted by the other retailers. Having three retailers competing through comparative performance has delivered many examples of innovative solutions at state, national, and in many cases, international level.

The existing structure drives each retailer to distinguish itself from the others. Having three organisations striving to position their own companies to be leaders diversifies the opportunities for innovative improvements. As Mick Bourke, former chairman of EPA Victoria puts it:

> *" We see different approaches to sustainability and we like to see that because, from a regulatory perspective, we can promote the best approaches and encourage others to take them up….and that equals competition for sustainability."*[30]

The value derived from the diversity which comes from comparative competition was also noted by the Government in its white paper of June 2004[31]:

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[29] IPART Literature Review – *Underlying costs and industry structures of metropolitan water industries* September 2007 p36.
[30] Yarra Valley Water stakeholder survey, September 2007
[31] Victorian Government White Paper ,2004, *Securing Our Water Future Together,* p148–149

" The Water Supply-Demand Strategy for Melbourne, to be produced jointly by the Melbourne water authorities…. building on the local knowledge each retailer offers, will help to ensure a mix of innovative local solutions combined with integrated system-wide planning."

Notwithstanding the significant benefits comparative competition has provided, there are a number of improvement opportunities that will further strengthen its contribution to a dynamic, efficient and high performing retail water sector.

Yarra Valley Water believes that, within the Melbourne context, comparative competition has served the community and the environment very well, and has been internationally recognised as one of the most effective means for improving performance and levels of innovation. However, to improve its effectiveness the following could be adopted:

- The existing suite of performance measures could be improved to:
    - better reflect key drivers of customer satisfaction – a good example is Ofwat's Service Incentive Mechanism[32] which embodies the concept of customer satisfaction through measuring the customer experience in quantitative and qualitative terms
    - create further incentive for innovation, such as public reporting of best practice and new innovations.

" The competition by comparison model needs to be dynamic – not stagnant – so the indicators need to be enhanced, not reduced."
Gavin Dufty, Manager of Research, St Vincent De Paul's

"The creation of the service incentive mechanism is likely to increase the prominence of the issues that matter most to customers and should be welcomed".
Keith Harris ex Wessex Water[33]

- Greater scrutiny and commentary by regulators and the owner will have major benefits. The best example of this is the Ofwat[34] "Good Practice Register," which shows how a regulator (or owner) can bring a spotlight onto good performance.

There is scope for the National Performance report published by the National Water Commission to become the prime vehicle for an Australia wide comparative performance regime to drive efficiency and improvements in customer service across urban water utilities in Australia. There is also scope for State economic regulators to prepare local comparative reports which take account of local factors where there are a sufficient number of urban water utilities.

[32] Ofwat, 2010, *Putting water consumers first – the service incentive mechanism*, March, Birmingham UK
[33] Harris, Keith, 2010, *Moving with the times*, Utility Week 3 September, p 21
[34] The economic regulator for the water and sewerage industry in England and Wales

Section 8 Tools and options for achieving reform

Case for Reform

Commission's context and questions

The Commission's Issues Paper stated:

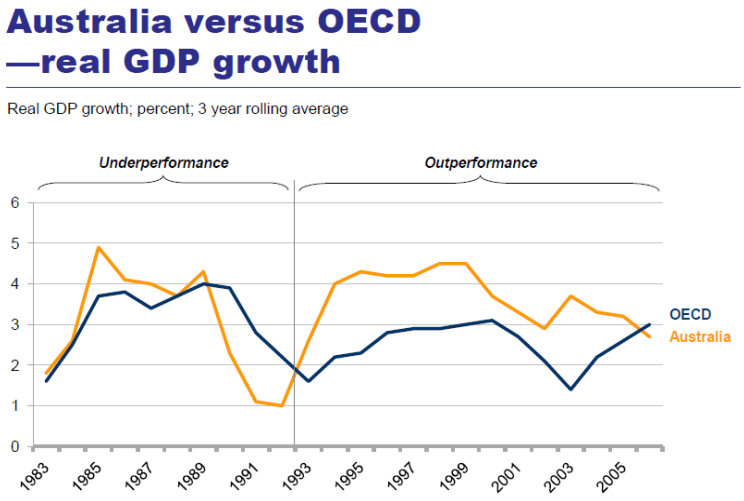
> *"Although the urban water sector has made progress towards reform, there could be scope to achieve improved efficiency through further reforms in the structural, institutional, regulatory and other arrangements that govern the sector."* [page 32]

Issues Paper Questions:

> *Is there a strong case for urban water reform to be pursued?*
>
> *Can you provide any quantitative or qualitative evidence or analysis of the efficiency from reform that might be achieved in the Australian urban water sector?* [page 32]

Response

We see water reform as a significant part of Australia's microeconomic reform agenda. The 1995 National Competition Policy Reforms are seen to have underpinned an era of out-performance in Australia's growth prior to the onset of the Global Financial Crisis and the current "resources boom"– refer figure below. However, immediately prior to the Global Financial Crisis Australia's out-performance in growth had stalled.



Source: Hilmer, Fred, ACCC Regulatory Conference Presentation: Learning from Success – Competition Policy and Success, 29 July 2010

A notable feature of this era of out-performance was the delivery of the Council of Australian Governments' 1995 National Competition Policy package of measures to implement the Hilmer proposals and to meet reform commitments in the areas of electricity, gas, water and road transport. The water reform package incorporated the 1994 COAG endorsed strategic framework for the efficient and sustainable reform of the Australian water industry. In Victoria, a complementary structural reform package was implemented in 1995 that included disaggregation of the former Melbourne Water into a wholesaler, three retailer-distributors and

a separate parks entity. The Melbourne reforms resulted in major efficiency gains and significant improvements in customer service[35].

Further reform could follow a similar pathway to the effective rollout of the National Competition Policy Reforms of the 1990's: whereby the Federal Government provided incentives to the States and monitored the achievement of outcomes. Another role the Federal Government could play would be in promoting consistent regulatory approaches.

Besides the Productivity Commission's Inquiry, we note that the National Water Commission, Infrastructure Australia and the Committee for Economic Development of Australia are currently undertaking reviews into urban water reform.

Reform Tools – Governance and Institutional Arrangements

Commission's context and questions

The Commission's Issues Paper stated:

> *"Governance refers to the way institutions make decisions and implement policies.. Good governance processes provide the framework within which agencies can operate effectively, based on principles of accountability, transparency, integrity and efficiency."* [page 32]

Issues Paper Questions:

Are the current governance arrangements for the urban water industry efficient?

- *What are the strengths of these arrangements?*
- *What are the weaknesses of these arrangements, and what are the consequences of these weaknesses?* [page 33]

Response

As previously indicated, the Melbourne water industry since 1995 has been progressively reformed with a number of resulting characteristics that have improved performance – refer to page 9 of this Response.

The combination of these elements underpins a sound governance regime where accountabilities are relatively clear, regulators have clear roles and the businesses operate under commercial disciplines focussed on achieving customer outcomes balanced with environmental outcomes.

Lessons can be gained from the following examples of governance arrangements for water utilities and Government–owned businesses in other jurisdictions:

- Economic and quality regulation: Ofwat has developed its approach to incorporating environmental and quality requirements in price reviews. Earlier reviews relied on direction from the relevant Secretaries of State, which set out their objectives and standards for the coming review. The direction was informed by the responsible agencies such as the Environment Agency and the Drinking Water Inspectorate. This approach constrained Ofwat and made cost a secondary consideration. It also increased the broad cost of the price review as the individual agencies commissioned

[35] Victorian Competition and Efficiency Commission, 2008, *Water Ways: Inquiry into reform of the metropolitan retail water sector: Final report*, February, page 29.

their own customer research to support their positions. The 2009 Price Review took a different, more collaborative form. Ofwat formed a steering group with the agencies and the relevant government departments. This allowed for discussion of all aspects of environmental and quality including cost. The group commissioned joint customer research so that potential conflict was precluded. Guidance was provided to the water companies for their price submissions.

- Oversight of Government-owned businesses: There are ways of monitoring Government-owned businesses such that there are regular and rigorous reviews. There are two very good examples of effective oversight of Government Business Enterprises:
    - Shareholder Executive (United Kingdom)
    - Crown Company Monitoring Advisory Unit (New Zealand).

  This type of oversight has a number of benefits:
    - provides Government with confidence that utilities are operating efficiently and that they are applying Government policy consistently and effectively
    - ensures that Government, not utilities, makes key trade off decisions on competing social, environmental and economic matters
    - assists in comparative competition and gives the Government meaningful comparisons that will encourage continuous improvement in all aspects of water utility operations.

Reform tools – Regulatory Arrangements (economic regulation)

Commission's context and questions

The Commission's Issues Paper stated:[1]

> *"To support the efficient operation of the institutions involved in the urban water sector, various regulatory mechanisms are required. Regulatory options that are commonly applied across Australia's urban water sector, and/or network utility industries, include:*
>
> - *Economic regulation*
> - *Drinking water regulation*
> - *Wastewater regulation and recycled water regulation*
> - *Environmental health regulation*
> - *Building and planning regulation"* [page 34]

Issues Paper Questions:

> *Is there merit in having a single entity that administers prices for water and wastewater services in each jurisdiction?*
> *Should independent price regulation be used more widely in the Australian urban water sector?*
> *Is there merit in having a national approach to economic regulation of water and wastewater services?*[1]
>
> *Are the existing regulatory arrangements for protection of water customers – including hardship policies – effective? Are there improvements that could be made?* [page 35]

Response

The regulatory framework in Victoria comprises:

- An independent economic regulator, the Essential Services Commission
- Two quality regulators – Department of Human Services for drinking water quality and Environment Protection Authority for environmental regulation
- Government setting its requirements on the water utilities through Statements of Obligations
- Government outlining its economic regulatory requirements through a Water Industry Regulatory Order.

The economic regulator, the Essential Services Commission, undertakes a crucial process to review each water utility's service and price proposals about every five years. The process for setting prices and customer service outcomes at each price review is:

- Each water utility prepares its Water Plan (i.e. price submission) in accordance with the processes outlined in its Statement of Obligations – this would normally include public release of a draft Plan for stakeholder comment prior to formal submission to the Essential Services Commission for review. Willingness to pay customer research would be required to justify any increase in customer service standards.
- Essential Services Commission undertaking a public review of the Water Plans and determines customer service outcomes, tariff structures and prices for each water utility.

In the Melbourne metropolitan area, tariff structures are common with small differences in prices between each water utility. For residential water customers, a three block inclining tariff structure was implemented from 1 October 2004 by the Government to promote more efficient use of water[36].

Under the Essential Services Commission's independent price regulation, the retail water industry costs that comprise a building block revenue requirement are:

- Wholesale Charges
- Operating Expenditure
- Return on Assets (Regulatory Asset Value (RAV) x Weighted Average Cost of Capital)
- Return of Assets (Regulatory Depreciation)
- Benchmark Tax Liability (Cash Tax Payments – assuming a benchmark optimal gearing)

As indicated on page 21 of this Response, we believe there may be scope for improvement in the interaction between economic and quality regulators. It is important that all increases in quality standards and obligations are subject to a transparent benefit cost assessment through a regulatory impact statement type process as suggested by the Victorian Competition and Efficiency Commission[37].

[36] Victorian Government Department of Sustainability and Environment, 2004, *Victorian Government White Paper: Securing Our Water Future Together*, June, p 98

[37] Victorian Competition and Efficiency Commission, 2008, Water Ways*: Inquiry into Reform of the Metropolitan Retail Water Sector: Final Report*, February, p 155.

The Essential Services Commission also manages the significant comparative competition regime for all Victorian water utilities and publishes an annual Comparative Report. The Melbourne retail utilities have been under this regime since 1995 with the original objective[38] to improve customer service and cost efficiency.

We consider these economic regulation arrangements as necessary for all water utilities as they operate monopoly infrastructure. We have seen significant improvements in our internal planning processes from the need to publicly justify all additional outcomes, expenditure and pricing proposals.

Yarra Valley Water has in place a hardship policy and programs that are recognised as best practice for Australian utilities. We maintain a strong connection across the financial counselling industry with external assessments including our recognition in 2005 with a Prime Minister's Award for Community and Business partnerships. We have established this program based on a business case and this basis has been recognised by the Essential Services Commission in its price reviews.

Our designated Customer Support team have been specially trained to help support customers in times of financial difficulty. We tailor any support to our customers' individual circumstances and case manage the situation to ensure these measures are working. We continue to share our experiences and learning's with other utilities to improve service delivery to customers. Customers who have been identified as requiring our support will:

- be treated with dignity and respect
- receive information about alternative payment arrangements, water conservation, Government concessions and assistance programs available to reduce their current arrears and long term water accounts
- have the option of receiving free, timely, independent financial counselling from an accredited financial counsellor
- be shielded from further debt recovery action
- have one point of contact within the Customer Support team, who will work with the customer for as long as our support is required.

The Essential Services Commission recently implemented a Guaranteed Service Level payment across most urban water utilities in Victoria to ensure disadvantaged customers are not harshly treated. We strongly supported the introduction of this measure.

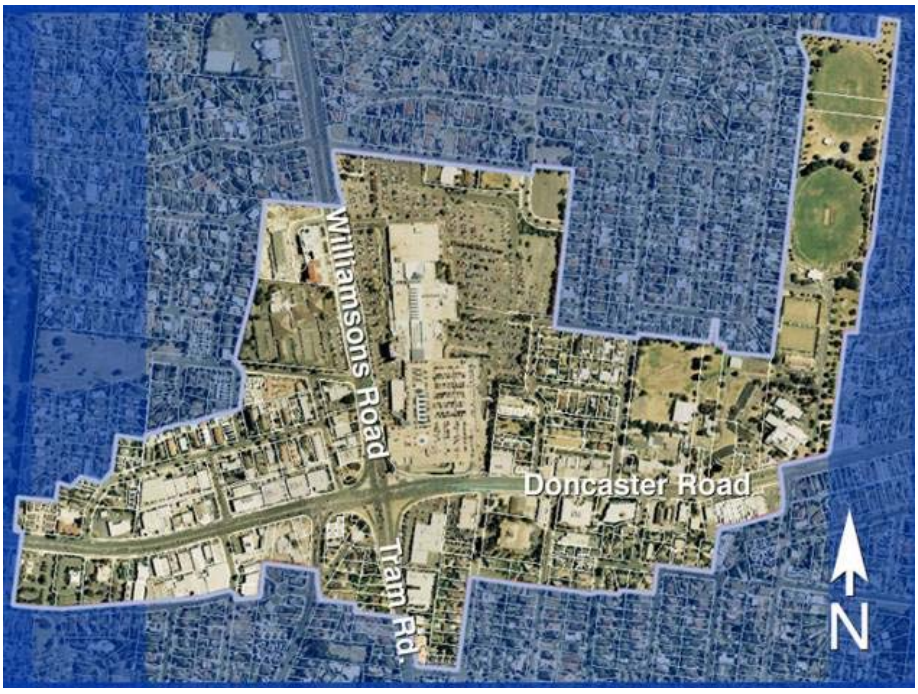
[38] *"The key structural reform sees the creation of separate businesses that will compete by comparison, thus stimulating the sorts of efficiencies in service and cost management that we are used to witnessing between competing private sector businesses"*, Department of the Treasury, 1995, *Reforming Victoria's Water Industry – The Restructured Metropolitan Industry*

APPENDIX 1

Examples of Integrated Water Management at Yarra Valley Water

Doncaster Hill

Doncaster Hill is intended to be a mixed-use sustainable urban village with a community-focused lifestyle. The development, which covers 58 hectares, features contemporary medium to high density housing with 4,000 new residential apartments – all within walking distance to shops, restaurants and workplaces, entertainment and public transport (refer below for plan). The development is supplied with urban water services by Manningham City Council, Melbourne Water and Yarra Valley Water. A third pipe solution involving a combination of recycled and treated stormwater and sewage was found to have the lowest community cost in preference to a traditional servicing strategy. This will be first time this has been done in an Australian infill re-development. Compared to a conventional servicing strategy, this development will see potable water consumption reduced by 64%, a reduction in wastewater exports by 53%, reduction in stormwater exports by 42% and greenhouse gas emission reduction of 54%.

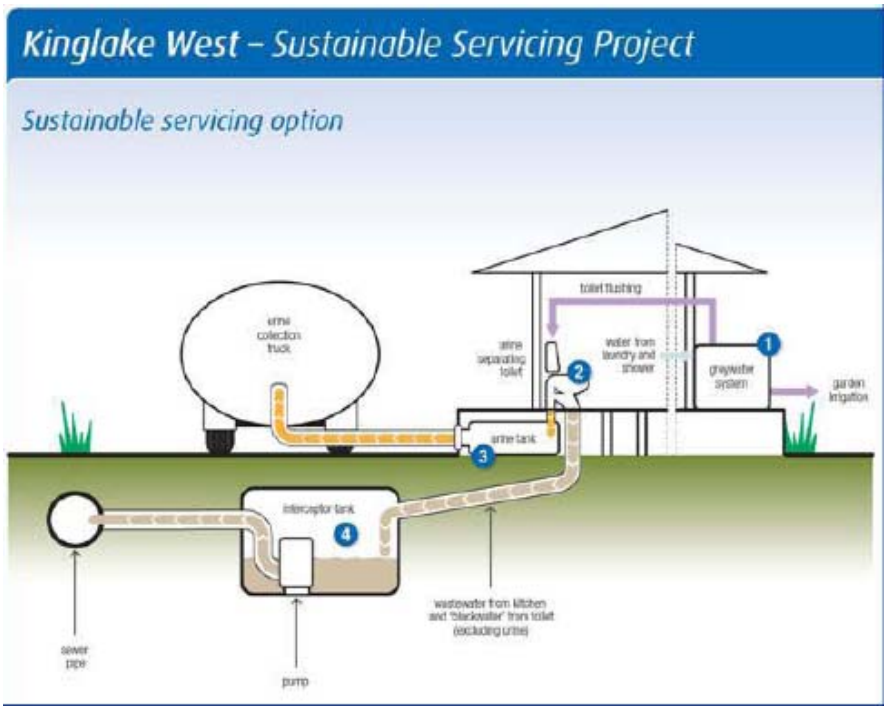


Kalkallo Stormwater Harvesting Project

This project is a 1000 hectare commercial and industrial development in Melbourne's Hume growth corridor where we are planning to capture and treat stormwater to achieve a lower overall potable water demand by up to 90% compared to an existing traditional centralised servicing option. It will also reduce stormwater discharge by 45%, nutrient discharge by 70% and energy use in delivering water and wastewater services by 75%.

Kinglake West Sustainable Sewerage Project

The servicing strategy for the Kinglake West Sustainable Sewerage project includes urine separating toilets, grey water reuse and pressure sewers– refer diagram below. We found this solution compared to conventional solutions reduced economic costs by 20%, reduced wastewater discharges by 50%, reduced nutrient discharges by 80%, reduced greenhouse gas emissions by 30% and increased reliability in water supply from 90% to 100%. The urine recovered from households will be re-used in a trial as agricultural fertiliser.



Coburg Stormwater Harvesting Project

The Coburg stormwater harvesting project is part of a major new high density development in an existing urban area which has been designated as a Principal Activity Centre under Melbourne's planning scheme. Stormwater is planned to be harvested from existing local major drains to provide water for domestic and commercial use. A treatment and storage (18 ML capacity) system is planned to be installed under sportsgrounds providing reticulated Class A water for use in toilets, laundries and open space – refer diagram below. This will see a reduction in potable water use by 30% and reduced pollution of Merri Creek in terms of nutrients, litter and stormwater flow volumes.

APPENDIX 2

Economies of Scale and Scope in the Water Industry

There are a number of recent studies into the potential for economies of scale or scope in water supply. By extension, this may indicate the optimal size for a water supply business.

The various studies are summarised below.

K De Witte and R C Marques, Designing incentives in local public utilities – an international comparison of the drinking water sector, 2007, preliminary draft paper

This paper analyses the relative efficiency of 107 water suppliers in five countries (including Australia) in the context of the incentive and regulatory regime under which they operate. A further 15 companies were excluded from the dataset as outliers. The criteria used put them outside the data envelop which suggests their efficiency is significantly beyond that of their peers (although there is a possibility that outlier status is caused by a quirk in the parameters). Yarra Valley Water and City West Water are in this group of outliers. South East Water is at the efficiency frontier which indicates that the other two retailers are apparently out-performing.

The authors conclude that water utilities perform more efficiently if they are encouraged by clear and structural incentives. It notes that the Dutch system of benchmarking is particularly effective as is the yardstick financial incentive in England and Wales. The study notes that suppliers at the efficiency frontier have little or no room to achieve further returns to scale.

S Garcia and A Thomas, The structure of municipal water supply costs: application to a panel of French local communities, 2001, Journal of Productivity Analysis 16 (pp5-29)

The main focus of the study is the scale at which it becomes profitable to control non-revenue water (particularly leakage) rather than increase production to compensate for losses. It considers data from southwest France covering 55 small water utilities serving an average 3000 customers, ranging from 102 to approximately 17,000.

The study finds that scale efficiencies are available for merging up to five community supplies, but after that diseconomies arise. It also notes that increasing customer density (customers per kilometre of pipe) will produce economies. Additionally, it also finds that a higher proportion of customers who use relatively large amounts of water may lead to declining scale economies (although it is not clear whether the author's view of what constitutes a 'large' customer is as large as ours).

F Mizutani and T Urakami, Identifying network density and scale economies for Japanese water supply organizations, 2001, Papers in Regional Science 80 (pp211-230)

This Japanese study looks for the optimal size (with lowest average cost) for a water supplier. Japan has a diverse assortment of approximately 15,000 water suppliers, ranging from those supplying around 2,000 customers to the largest supplying nearly 11 million.

The study finds that for all supplier sizes there are economies associated with greater network density. However, it found diseconomies of scale which become more pronounced at the system approaches maximum utilisation.

The study estimates that the optimal size for a water supplier in Japan is one that serves a population of approximately 766,000 on a network of 1,200km.

D Saal and D Parker, The impact of privatisation and regulation on the water and sewerage industry in England and Wales: a translog cost function model, 2001, Managerial and Decision Economics 21(6) (pp253-268)

This study tested three hypotheses about the industry in England and Wales:

1. *The privatisation of the water industry in England and Wales in 1989 led to significantly lower costs of production.*

   The authors reject this as their model does not demonstrate a statistically significant reduction in the trend growth rate of costs after privatisation (the data includes the four years immediately before privatisation).

2. *Regulatory tightening in the form of a change in the price cap from 1 April 1995 led to appreciable efficiency gains.*

   The model demonstrated a statistically significant decline in the trend growth rate of costs after the 1994 price review. The authors suggest an interpretation that the regulation at privatisation was lax and that the regulator used the first available opportunity to turn the screws.

3. *Economies of scope exist in water services production.*

   This part of the exercise examines whether there are economies of scope between water and sewerage services. The authors find that there is 'nonjointness' i.e. there are no economies of scope. They suggest that there may be 'quality-driven scope economies'. For example, meeting stricter standards for the treatment of wastewater could reduce the cost of making the output suitable for re-use.

The study also finds evidence for diseconomies of scale for the water and sewerage companies. The authors conclude that the policy of not allowing mergers between these companies is appropriate on this basis. (The companies in the data set range from 1.2 million population served to 8.2 million population served.)

M Torres and C M Paul, Water production and distribution in the US: the bigger the better? 2004, International Industrial Organization Conference (presentation paper F1J2)

This study suggests that there are scale economies from having larger water treatment plants and high output production levels. However, they also find that this is offset by the network required to supply distant customers. (The study cites Garcia and Thomas but does not consider their point about increased production as a cover for network losses.)

The other finding is that there are considerable diseconomies associated with increasing service area.

Stone and Webster Consultants, 2004, Investigation into evidence for economies of scale in the water and sewerage industry in England and Wales, Office of Water Services (Birmingham UK)

Ofwat commissioned this report examining economies of scale to inform decisions on mooted mergers of suppliers in the industry.

The analysis finds diseconomies of scale for the water and sewerage companies. It notes that these are declining reflecting improving efficiency of capital investment. This in turn offsets *rising* diseconomies of scale for opex. They also find that the water-only suppliers (which tend to be smaller) show small economies of scale implying a different cost structure.

The study found evidence for economies of scope from the integration of water and sewerage production activities. These arise from purchasing power for shared input such as energy. However, there are also significant diseconomies of scope where inputs are not shared e.g. water production and sewerage connections.

There is evidence for vertical integration of water supply. The authors suggest that the introduction of competition through network access may have a net detriment as economies of scope may be lost.

The study finds no evidence that previous mergers affected the underlying costs of the industry.

Takuya Urakami; 2005, Identifying scale economies for different types of water supply organizations in Japan; 2006, Economies of vertical integration in the Japanese water supply industry, Kinki University (Osaka)

Unfortunately a complete translation copy of the 2005 paper is not obtainable. However, the available version seems to indicate that return to scale is less evident for larger suppliers.

The 2006 paper concludes that vertical integration in water supply provides economies. However, these become less apparent in distribution systems where there is a low level of water loss (leakage etc).

Melbourne Comparison

For comparison, the retailers in Melbourne are around or slightly larger than the apparent optimal size. There is also a notable difference in network density.

Additional Information

	City West	South West	Yarra Valley
Population	804,000	1,442,000	1,632,000
Properties served/km mains	80	74	73

Source: NWC and WSAA National Performance Report Data 2008/09

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