Department of Environment Submission on the Economic Regulation Authority Draft Report Inquiry on Urban Water and Wastewater Pricing

Department of Environment

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This report is written by the Department of Environment.

The original submission to the Economic Regulation Authority (ERA) was prepared within the Department of Environment on behalf of the Water and Rivers Commission. The original submission titled "Water and Rivers Commission Submission to the Economic Regulation Authority Inquiry on Urban Water and Wastewater Pricing in Relation to Water Resource Management Costs" was made in September 2004. It was written in response to the ERA Position Paper of this inquiry.

With the amalgamation of the two agencies publications, papers and submissions are now made from the Department of Environment. Until legislative changes are made to implement Government's decision to amalgamate the Water and Rivers Commission with the Department of Environmental Protection, the Commission remains the legal entity where legislation specific to the Commission is involved.

Submission to the ERA

Introduction

The Department of Environment (Department) is in general agreement with the Draft report released by the Economic Regulation Authority (ERA) in March 2005 as part of its inquiry on Urban Water and Wastewater Pricing. The Department considers the Draft report to be a comprehensive review of a difficult topic. The opportunity to make this submission is welcomed.

Comments in this submission are restricted to the topics raised in the Department's previous submission to the ERA Issues Paper. This previous submission is available on the ERA website.

The original submission focused on the need to manage the use and quality of water resources for the purpose of protecting the interests of water users in terms of ensuring quantity and quality of supply. The paper identified the scale of costs of the work created by the work of the utility and discussed how the costs could be passed on to utility customers.

The Department also commented on water tariffs expressing a preference for consumption based charges over fixed costs so as to encourage water conservation. The Department notes that the major finding of the Draft report is that a more extensive use of water markets would enable utilities to provide supply at least cost. While agreeing that wider use of markets present an opportunity to reallocate water at least cost, the Department considers that considerable public consultation and education may be necessary to define and assist the many aspects of extending markets in water.

The Draft ERA Report

This submission will comment on the following findings of the draft report:

- it would be reasonable to pass on to customers those resource management costs that are directly attributable to current consumption activities
- care should be taken to ensure the environmental standards and targets set by government reflect an "efficient" level of environmental quality. Cost benefit analysis should be used and any new increase in environmental standards should also have a comprehensive social benefit cost analysis;
- the environmental outcomes should be delivered at least cost;
- consideration should be given to recovering resource management costs with a fixed charge rather than a volumetric charge;
- the costs of repairing damage caused by supply decisions in the past should be funded by Government;
- As the Water Corporation does not incur the costs of water resource management, revenue generated from the charge should be passed back to Government.

Key findings for the draft ERA report include "**it would be reasonable to pass on to customers those resource management costs that are directly attributable to current consumption activities**." The Department is in agreement with the

recommendation[1]. The Department noted that many other submissions to the position paper also supported the inclusion of management costs in water pricing and the passing on of these costs.

Security of water supply and scope of benefits

The Draft ERA report describes Government intervention (p98) to maintain environmental standards by setting minimum standards in the operating licences of water service providers, directly funding capital works and management activities, and estimating and setting sustainable yields to limit abstraction rates to ensure that the resource is available in the long term.

The draft report fails to explicitly mention that the natural resource manager, in setting sustainable limits and licensing and enforcing the sharing of abstracted water by all licence holders, is providing the major source of security and "title" to water users. This security is the basis of many businesses.

It is obvious that businesses directly based on water use, such as beverage production, food processing, irrigation farming and fresh water aquaculture, are viable only if they have a secure water supply. That security is based on the assessment and licensing process of the natural resource manager.

In general, business is also dependant on a working relationship with a financial institution, usually at least an overdraft facility. Access to capital and debt is available where financial institutions have confidence in the viability of the borrower and the legal system to enable them to recover the funds lent. Financial institutions need to have confidence that the business seeking debt finance has a secure water "title".

That security comes from the work of the natural resource manager in assessing the level of abstraction that is sustainable, preventing any abstraction in excess of that limit and restraining all abstraction to those authorised to make them. Hence security of title for water users underpins the financial feasibility of much of WA business.

Environmental water and the opportunity cost to water users

The draft review suggests that **"care should be taken to ensure the environmental standards and targets set by government reflect an "efficient" level of environmental quality**. **Cost benefit analysis should be used and any new increase in environmental standards should also have a comprehensive social benefit cost analysis"**.

Alteration of the existing water regime has an impact on the environment. Sometimes, as in flood control, the benefits considerably outweigh the costs. In other cases such as the abstraction of water from water courses or groundwater, the progressive increase in abstraction and rise in values of production from use of the water is correlated with a decrease in environmental values. This is particularly so where environmental values are water dependant, as in the Perth, Swan Coastal Plain and South West regions.

The work of the Department involves balancing a decrease in environmental quality (a cost) that the community will accept in return for the water extracted (benefit). At present the Department

[1] *Water and Rivers Commission Submission to the Economic Regulation Authority Inquiry on Urban Water and Wastewater Pricing in Relation to Water Resource Management Costs page 3*

is in the process of undertaking a number of studies in relation to extracting water from the southern Yarragadee and has found that the local community places water for the environment behind local household use and local food production on their priority list for water allocation[2]. The first of the intensive statutory plans, the Gnangara Mound is currently being undertaken. The process for this plan will include comprehensive opportunity costs and shadow pricing that will enable the community to make informed choices regarding the efficient level of environmental quality that is desired for the area. This plan will provide a model for subsequent plans involving scrutiny at this intense level.

The current programs in the Yarragadee and Gnangara indicate that the Department agrees with this recommendation and is actively implementing it.

Cost of water management

The draft review suggests that **"the environmental outcomes should be delivered at least cost".**

The Auditor General's Department has recently audited the performance of water resource management in the State. The report[3] concluded that at that time the resources and effort invested in water resource management was inadequate. Extracts from the report that detail deficiencies in management levels follow.

Water allocation plans provide a detailed assessment of the maximum sustainable amount of water that can be allocated for social and development purposes. The degree of water management required increases exponentially as a resource approaches full allocation. For example, when less than 30 per cent of the available resource is allocated, allocation limits need only be known approximately, monitoring need only be rudimentary and compliance auditing does not need to be intense. When resources are more than 70 per cent allocated[4] these management activities should be more intense. Appeals, competition among users and disputes are much more likely and environmental values may be compromised if water use is not carefully monitored and managed.

Public drinking water source protection plans

Water source protection plans define appropriate and inappropriate land uses in Public Drinking Water Source Areas. WRC has identified 139 water source protection plans that need to be produced and has to date released 46 of them. About half of the remaining 93 plans have yet to be started. A further 15 to 20 years may be needed before completion unless further resources are made available.

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[2] *South West Yarragadee – Blackwood Groundwater Area Economic Value Study*. Economic Consulting Services. September 2003.

[3] Auditor General of Western Australia. Second Public Sector Performance Report 2003. Report 7 September 2003.

[4] While not a rigid threshold, 70% of utilisation is commonly held by Australian jurisdictions to be a level at which increasing degrees of intensity of assessment, management and planning is needed to stay ahead of use demands.

Sustainable water allocation limits

The Auditor General's found that pragmatic response to pressures for water resulted in Departmental policy being sidestepped through lack of resources to enable it. Similarly data from large users was not being entered on data bases.

Of the 13 areas that were over 70 percent allocated:

- three had been subject to detailed environmental assessment while six areas had been assessed using a computer model; and
- four areas had been subject to very preliminary estimates of allocation limits or not been subject to environmental assessment.

The audit found 17 out of 24 groundwater resource allocation plans to be out of date with a further three close to expiry. At the time of the audit 39 percent of the 986 groundwater resources have not had allocation limits set in the WRC management database.

Standard allocation plans cost $300-500,000 each. As use increases toward sustainable limits planning requires greater knowledge of the resource and finer evaluation of claims for water at the margin, information for appeals of decisions etc. The planning widens and deepens to include greater social and economic inputs in addition to the improved hydrological inputs. The intensive Gnangara mound study will cost $1,600,000 plus associated data collection costs of more than $3 million each year. This is still low cost relative to the value and use of the resource[5].

In recent years the WA natural resource manager has produced two to three water allocation plans per year. New South Wales has demonstrated the importance of plans by recently spending approximately $30 million developing 36 new plans which were gazetted in February 2003.

The conclusion must be that the level of expenditure on water allocation planning is not excessive, indeed all indications are it is inadequate.

Form of charging for resource management costs

The ERA has found that "**consideration should be given to recovering resource management costs with a fixed charge rather than a volumetric charge**".

In its earlier submission the Department suggested[6] the principles to be applied to maximise efficiency of water resource management charging included:

- *"Users should pay directly only for management activities that generate benefits to them or address the impacts of their use;*

[5] The net present value of the 338GL/annum used from Gnangara valued at $1.11/KL opportunity cost for desalination capitalised over 30 years @8% discount rate exceeds $4 billion. Output values for industry sectors per KL include metropolitan $183/KL; Mining $63/KL; Dairy farm $0.47-20/KL. Viticulture $4/KL. *South West Yarragadee – Blackwood Groundwater Area Economic Value Study*. Economic Consulting Services. September 2003

[6] "Water and Rivers Commission Submission to the Economic Regulation Authority Inquiry on Urban Water and Wastewater Pricing in Relation to Water Resource Management Costs" September 2004

- *Charges should not recover more than the 'efficient' costs of water resource management activities;*

- *The cost sharing arrangements should reinforce policies related to water use, including water use efficiency incentives and social outcomes;*

- *The charging regime should be adaptable and may need revision in the future (eg incorporation of externality pricing);*

- *Costs of remedying damage caused by past use should generally be borne by the community, not current users, except where remedies deliver benefits to users".*

- "*for each of the broad charging options, there are alternative charging bases, such as the number of services, volume of entitlement, actual use or a combination of these".*

- *On efficiency and equity grounds, volume of use by water service customers should be the predominant charging base".*

The above example of work in progress on the Gnangara mound illustrates the complexities associated with determining whether the resource management costs should be recovered through a fixed, volumetric or other form of charge. The costs increase rapidly as the marginal complexity increases, and the complexity increases as the sustainable limit is approached.

A volumetric charge could be expected to provide an increased income for the water resource manager to cover increasing work loads across the State. A volumetric charge may benefit users within a management area if volumes decline, for example in a severe drought if restrictions are imposed. Conversely the high work load expected of the water resource manager at such times would be under funded.

Fixed charges might have the effect of encouraging efficiencies in management. However it could lead to the present situation of work increasing without corresponding increases in funding, and the level of management becoming less than desired.

The Department's position is that the charges should meet the cost of management. At this stage the Department still holds to its original position, but recognising the need for flexibility and adaptability is prepared to consider alternatives.

Further recommendations regarding past damage and funding

Two further recommendations are relevant to the Department's submission;

the costs of repairing damage caused by supply decisions in the past should be funded by Government.

As the Water Corporation does not incur the costs of water resource management, revenue generated from the charge should be passed back to Government.

These recommendations are based on sharing the costs of activities undertaken to provide public benefits. Costs are shared on the basis or either the impactor pays principle or the beneficiary pays principle. The impactor pays where the impactor is the person or group whose activities generate the costs or need to incur costs. An example of this principle in use is imposing conditions on water licences and having the licensee meet the costs of fulfilling the conditions.

The alternative, beneficiary pays, is used where the beneficiary is the person or group who derives benefits form the activity for which the costs are to be allocated. Beneficiary pays is usually divided into user pays where they can be directly identified, or beneficiary compensates where those who benefit indirectly (including government for the general community) contribute to costs.

Departmental water resource management activities generate public benefits but also generate significant private benefits that were referred to earlier under the section heading, Security of water supply. In the absence of the Department undertaking this role, these users would have strong incentives to ensure the role was undertaken ie they need water "title" and the security it gives. By undertaking this activity Government is subsidising these users. By implication Government should only pay for that part of water resource management that exceeds what the beneficiaries would undertake if left to themselves. This is an impactor pays principle outcome.

The impactor pays principle is preferred as being more consistent with economic principles. It can be based on costs while the alternative, the estimation of benefits of many environmental values is difficult, expensive and imprecise.

Some balancing between approaches at the margins is necessary, but a clear definition and careful application of principles within a framework is needed to define and allocate costs. The natural resource manager has gone some way toward forming this framework.

Past decisions made with a lesser level of environmental understanding than is currently held, and different attitudes to development, result in costs that are impractical to recover from past users. They are inefficient and inequitable to recover from current users. The Department agrees that these costs should not be included in water resource management costs to be recovered.

The Department is of course concerned that funds passed back to Government for water resource management are dedicated to that use. Otherwise these recommendations are in agreement with the Departments views and do not need further comment.

Conclusion

The Department highlights the point that security of water supply and access to water is a foundation of business in WA. Security is provided by the regulation of access to water under the *Rights in Water and Irrigation Act* administered through the Department of Environment.

The environmental standards set are determined through increasing levels of research and consultation as use levels in a management area increase. Beyond levels of say 70 per cent utilisation these detailed assessments include social and economic studies that indicate the opportunity cost associated with water reserved for environmental water provisions.

The Department has been found by the Auditor General to be inadequately resourced to undertake its assigned resource management roles. The costs of planning exercises are demonstrated to be relevant and moderate in relation to the value of the resource and the value of output which is contingent on management of the resource. The Department agrees an ongoing watch on these transaction costs is needed and believes incorporation of local management groups in the management process will be beneficial in this respect.

On most points the Department is in reasonable agreement with the ERA. The major point of difference between the ERA Draft report and the Department submission is the basis of

recovering resource management costs. The Department suggested an impactor pays usage basis to reflect unit costs while the ERA suggested a fixed charge.

The Department recognises the cost driver of management will be the increasing intensity of use. The escalation in costs as each management unit approaches full allocation has the effect of increasing the management cost per marginal unit of water managed. Over time more of the management units in WA will fall into this category, that is more and more management units will be high cost per marginal unit of water. This suggests that in the future regional based budgeting will be most effective and the choice as to whether to use unit or total costs may be a secondary consideration. Further analysis may be needed to form a conclusion but for the initial charging a charge per unit used may be appropriate. It is simple to establish, reflects the uniform water charging system, and is equitable in terms of water used. Not withstanding this, the Department is not opposed to a fixed charge if this is considered efficient.

The Department is in agreement with the findings that past damage should be repaired by Government and revenue collected by the Water Corporation in respect of water resource management should be handed back to Government for use in water resource management.