THE DEPARTMENT OF TREASURY AND FINANCE SUBMISSION ON THE ISSUES PAPER: INQUIRY ON HARVEY WATER BULK WATER PRICING

Department of Treasury and Finance
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Introduction

This Submission addresses the *Issues Paper on the Inquiry on Harvey Water Bulk Water Pricing* issued by the Economic Regulation Authority, 13 October 2006. Key points discussed in this Submission include:

- the case for 'full costing' methodology, which includes a return on assets, at least as a transparent reference point;
- the valuation of assets under Depreciated Optimised Replacement Cost (DORC) methodology as opposed to book value;
- the case for legislation to establish State based standards for dam safety; and
- the application of the beneficiary pays principle where practicable.

Key Issues

1. Water storage costing methodology

A full costing method requires that depreciation, a return on assets, and operating and maintenance costs are included in the charge to Harvey Water. This method should be used to recover costs from Harvey Water, as this methodology will drive full cost recovery pricing. Most importantly such costs should be reflective of efficient costs, that is, only prudent and efficient expenditure should be included in the regulatory asset base.

Full cost recovery pricing should be adopted as it:

- is consistent with the Intergovernmental Agreement on a National Water Initiative;
- is considered best practice and will ensure comparability and consistency with prices for country and urban water customers;
- acts as a benchmark against which pricing and production decisions can be made.

In the case of Harvey Water, 'full costing' should at least be used as a transparent point of reference but the ability to recover the charges will be dependent on the ability of Harvey Water to generate sufficient revenue from charges to irrigators. Government currently pays a Community Service Obligation (CSO) to the Water Corporation to cover the difference between the charges to Harvey water using 'renewal cost' as opposed to 'full cost'. It is noted that currently, full cost recovery pricing is not being applied. As a result, incorrect price signals may be sent, as prices do not currently reflect the real cost of water. The use of appropriate pricing signals that better reflect the real cost of water would lead to better resource allocation including, encouraging conservation and water saving investments by users.

2. Asset valuation methodology

In general, when valuing assets, asset valuations should:

- promote economic efficiency- accurately reflect the economic value of the assets to allow efficient pricing and investment decision making;
- be objectively verifiable, generally understood, simple to calculate and stable over time; and
- generate depreciation streams sufficient to maintain the operating capability of the assets.

Under a building block type approach to calculating a return on capital, the value of an asset base is applied to the Weighted Average Cost of Capital (WACC) in order to determine a required rate of return. As such, the manner in which an asset base is calculated is of significant importance in any review of pricing.

We have considered a number of the more common asset valuation methodologies, including value based and deprival based approaches. Value based approaches are those that typically determine the value of an asset from its cash generating capacity, or the cash generated by the asset's sale. This approach was not considered as appropriate by DTF.

Deprival value determines the value to a business of each asset by estimating the minimum loss that a business would incur if it were deprived of the asset. Typically, it is the lower of the asset's replacement cost (assuming a depreciated optimised replacement or DORC methodology) or the asset's economic value. Under the deprival value method, assets are valued at replacement cost and then adjusted for over-capacity and lower consumer value.

The Water Corporation currently applies another form of deprival valuation – using the written down replacement value of assets. This approach does not include the optimisation of replacement costs. Written down replacement value measures the current cost of replacing the existing assets but assumes that there are identical assets for replacement. This approach does not take into account inflation, changes in asset prices since purchase, the reduction in asset values due to obsolescence or the underlying opportunity cost and ignores spare capacity (stranded/redundant assets). Therefore, this method of valuation tends to undervalue the assets when compared with using a method such as DORC. This department does not favour the use of the written down replacement value methodology.

Indeed, DTF's stated preference is for application of the DORC methodology in determining the cost of an asset base. In the case of water infrastructure, dams such as the Harvey Water dam may be considered akin to 'essential services'; that is, in the short term, upstream and downstream users are unlikely to be able to relocate or obtain water via other sources. In this case, it is highly likely that the optimised replacement cost would be lower than the economic cost of the asset given the essential nature of the asset and the value

thereby placed on it by users. Hence in this case, it can be argued that the DORC valuation (that is, the replacement cost of the asset, less accumulated depreciation) is in fact a practical proxy for deprival value.

Indeed, increasingly, the DORC asset valuation method (with straight line depreciation) has become a conventional approach of valuing existing infrastructure assets and it is utilised by most Australian and overseas regulators in industries such as gas, electricity, telecommunications and rail and water.

For long-lived assets such as the Harvey Dam scheme, DORC is especially appropriate. However, given this long economic life, consideration needs to be given to the impact of regular augmentation (that is 'staging') on application of a DORC methodology to costing an asset base. More specifically, use of DORC can imply that assets are replaced all at once (that is capital expenditure [capex] is lumpy and occurs at infrequent or lengthy intervals). However, as this may not be the case with regards to dam upgrades, consideration needs to be given to the manner in which incremental augmentation is reflected in the asset base.

In regulated industries and jurisdictions, regulators re-visit pricing decisions at regular intervals as part of a regulatory review. Although the preference is to 'lock in' or 'roll forward' the value of a regulatory asset base of the previous period, adjustments are made for inflation, depreciation and capex undertaken during the period. The interval at which regulatory reviews should be undertaken in this case is outside the scope of this paper, but an important issue worthy of some consideration in future discussion papers, given the impact it can have on pricing and investment decisions.

3. Dam safety guidelines

This Terms of Reference for this review, require the ERA to consider the significantly higher expenditure on dam safety to meet Australian National Committee on Large Dams (ANCOLD) guidelines and to give consideration to possible alternatives to these guidelines. The following sections put forward DTF's views on both the adoption of guidelines other than ANCOLD and the cost sharing arrangements for dam safety costs.

Dam owners in Australia plan, design and construct dam safety upgrades to meet current engineering standards. In the case of Western Australia, these are set by the ANCOLD guidelines. As these standards require the reduction of risk to given levels that are independent of the cost of the works required, this can lead to much higher expenditure on reducing dam safety risks compared to other types of risk reduction expenditure undertaken in the community.

There is no legal requirement for the Water Corporation to adopt ANCOLD guidelines but in the absence of State legislation stipulating alternate standards this is the de facto standard for the Water Corporation.

The Board of the Water Corporation choose to meet such standards because it will be held personally liable for any loss of life in the case of dam failure.

The ANCOLD guidelines set a safety standard that each dam must meet which is considerably higher than standards for other public infrastructure. To remove this requirement and minimise levels of expenditures on dam safety upgrades (by extending the time to upgrade the dams and perhaps reduce the level of upgrades) would require legislation to set a State policy on acceptable risk.

There is potential for regulations to be adopted in Western Australia that replace the ANCOLD guidelines and impose a more rational dam safety program in line with the accepted risks for other public infrastructure. The prime objective of State-based regulations would be to reduce the cost of dam safety upgrades with only a minor reduction in safety standards.

According to Marsden and Jacob[1], the Water Corporation currently plans to upgrade all dams in the South West at a cost of $15 million per year over an 8 year period. Whilst, it is acknowledged that there would need to be money spent on dam safety, an assessment should be made of what amount would be saved if the Water Corporation reduced the risk of dam breaks from one in 1,000,000 years to one in 100,000 years.

The Marsden Jacob Review questions whether the level of expenditure on dam safety can be justified, relative to expenditure on other items of public safety such as road accident prevention or public health immunisation programs.

Once the Government has considered the findings of this review, Government has the opportunity to assess whether the investment required to meet ANCOLD standards is appropriate for Western Australian dams.

The priorities and timetables for dam safety could be set within a whole of government risk assessment and management framework. The framework could prioritise all the Government's risk reduction expenditures to get the 'biggest bang for its buck' i.e. spending each dollar where it is most effective in reducing loss of life throughout the community, across a whole range of hazards. Also, there should be consistency in the valuation of loss of life in case of public safety. There is no reason why there should be much more money spent on dam safety than road safety in order to save a life.

A similar approach could be adopted in Western Australia to that of the whole of government approach to risk assessment and management as currently taken in the United Kingdom (UK), where every major government department has a risk management policy that is consistent with a common framework. Co-ordination of approaches to risk management is undertaken through a strategy unit in the Cabinet Office.

[1] Marsden and Jacob Associates (August 2003), *Review of Dam Safety Program Relating to South West Irrigation Dams: Final Report*, a report for Harvey Water and the Water Corporation.

The aim of this co-ordination is to harmonise activities and approaches, with the emphasis being on understanding if and why there are different approaches between departments and activities to risk management, and to explain those differences to the community and stakeholder groups.

4. Cost sharing for expenditure on dam safety

Part of the Water Corporation's responsibility is to maintain and operate the dams to an acceptable standard of safety. The Bulk Water Supply Agreement (BWSA) between Harvey Water and the Water Corporation makes provision for the bulk water price to be increased as a consequence of any dam safety upgrades.

The share of costs that irrigators can be expected to bear needs to be determined as Government should not bear the full cost. Irrigators may not be able to meet their full share of the costs, but they have a valuable water allocation that needs to be taken into account in any subsidy arrangements.

At the time of signing the BWSA, the cost of required upgrades was estimated at $17 million. However this figure was arrived at prior to any detailed dam safety assessment. The current estimated cost of upgrade is now put at approximately $104 million. The impact of the irrigators' proportion of the $104 million on the bulk water price would increase their charges by around $5 million per annum when the program is completed. Harvey Water's total revenue is currently around $4 million so charges to irrigators would need to more than double.

If Harvey Water owned the dams, they would proceed with a dam safety program with the objective of meeting the same ANCOLD guidelines. The Water Corporation's dam safety expenditure on the South West dams will be expensed over a period of 8 years. However, Directors of Harvey Water could allow the works to proceed at a slower rate due to Harvey Water's reduced financial capacity to undertake the works relative to the Water Corporation's so long as safety standards were maintained. This could result in a different optimal staging strategy of the works. For instance, according to Marsden Jacob, dam owners such as Goulburn-Murray Water indicated clearly that they are more capital constrained and are staggering their upgrade programs over periods of fifteen years and in some cases longer. However, a change in the ownership of the dams may only indirectly change the level of dam safety expenditure as it would be a short term solution, where as putting in place State based legislation which stipulates the levels of acceptable risk would be a more sensible and long term solution.

Irrigation farmers in other states generally make financial contributions in proportion to the benefits they receive from the dams. The exceptions are the Murray Darling Basin dams where the Commonwealth Government meets 25% of the costs (for the upgrades that have occurred to date, Murray Darling irrigators have been assessed as being 50% beneficiaries so that irrigators ultimately pay a maximum of 37.5% of the costs), and South Australia where the costs are all borne by the government.

In Victoria, Marsden Jacob's review indicated that 55% of the benefits accrued to the irrigators and based on this, the Government made a decision to share the costs with the irrigators on a 50:50 basis.

In New South Wales, IPART determined that irrigators should pay 50% of the effective capital costs. In Western Australia, Harvey Water currently contributes 30% towards the dam safety costs for the South West dams.

Another consideration is the impact of passing on dam safety costs. By way of comparison, for Goulburn-Murray Water, if the irrigators share of dam safety costs increased to 100% then this would cost them around $5/ML compared with an estimated $57/ML on average for the South West (Marsden Jacob, 2003). This would represent a seventeen-fold increase in the cost of bulk water to irrigators in the South West. It would be useful to also know the value of the water to these irrigators.

The Marsden Jacobs review recommended the use of the proportion of costs to be met by irrigators in Harvey of 25%-35% for the Waroona dam safety costs and 40%-50% for the remainder of the dam safety program. The proportion of dam safety costs not met by Harvey Water would be funded by a CSO payment from the Government to the Water Corporation.

This cost sharing proposal recognises that ability of the end users, as the beneficiaries, to pay for the dam safety expenditures. Unfortunately, the 'affordability assumption' is based on the viability of dairy farming where milk prices have fallen substantially as a result of deregulation. Furthermore, the affordability of dam safety expenditures is a much more critical and dominating issue in the South West than in the major irrigation areas elsewhere in Australia. In large part this stems from the comparatively very small yields from the dams resulting in a high cost per unit of water.

Where identifiable, other beneficiaries must be recognised. These include consumptive use by the local towns, recreational users of the dams and the beneficiaries of increased safety, i.e., the utilities, the towns and infrastructure, the resident and transient population, and the environment. However, costs should be recouped from beneficiaries who are easily identifiable and where the costs of administering charges does not exceed the amount recouped.

The cost-sharing judgement provides appropriate financial incentives for all three parties involved:

- First, the comparatively high cost to irrigators provides Harvey Water with a strong commercial imperative to maintain a close watching brief on future dam safety upgrade solutions and its role from a strategic water resource management perspective. Moreover, it should ensure that Harvey Water maintains close scrutiny throughout the scoping, planning and implementation phases.
- Second, the cost to the public purse should ensure that the DTF adopts a more active role in the area of dam safety decision-making and

funding. It should provide greater scrutiny of the prima facie differential in dam safety standards vis-à-vis other areas of public safety and, therefore, the allocation of scarce community resources between the different areas of public risk.

- Third, the cost-sharing and related institutional funding arrangements should help ensure that Water Corporation examines dam safety in the South West from a total water resource management context and that the developed solutions are clearly least cost and have been thoroughly scrutinised by both the major customer and the DTF.