



Australian
Competition &
Consumer
Commission

The allocation of costs between government and users in the regulation of wholesale water service providers in New South Wales

Darryl Biggar

Working paper no. 7, September 2012

ACCC/AER WORKING PAPER SERIES

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ISBN 978-1-921973-31-4

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Citation details: ACCC/AER Working Paper 7 /September 2012

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Acknowledgements

The author would like to thank Eric Groom and John Madden for helpful detailed comments. They are, of course, not responsible for any remaining views or errors in the paper. Thanks also to Genevieve Pound and Lynne Sevier for preparing this document for publication.

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1. Introduction

This paper addresses an issue that has arisen in the wholesale water industry in New South Wales (NSW). The issue affects the way that charges are determined for wholesale bulk water services and, in particular, how the government's contribution to the sector should be determined.

The NSW Independent Pricing and Regulatory Tribunal (IPART) currently has responsibility for regulating the charges of State Water Corporation (State Water) the wholesale bulk water supplier in NSW. In carrying out this task, IPART has for many years used a methodology which allocates part of the costs incurred by State Water to the NSW government. In effect, IPART determines the amount that the NSW government must contribute (directly or indirectly) each year to the on-going activities of State Water.

This allocation of costs between water users and the NSW government is said to have been primarily on the basis of an 'impacter pays' approach. IPART also allocates to the NSW government the revenue shortfall incurred by State Water where IPART considers full cost reflective pricing would have too great an impact on customers in some regions.

From 1 July 2014, State Water's charges will be assessed under Rules issued under the (Commonwealth) *Water Act 2007*. This assessment will either be carried out by the Australian Competition and Consumer Commission (ACCC) or by IPART under arrangements accredited by the ACCC. Either way, the ACCC must form a view on the extent to which the current regulatory arrangements in NSW are compatible with the Water Act and/or good regulatory practice.

Concerns have been raised that the regulatory arrangements in NSW may not be compatible with the Water Act and/or not compatible with good regulatory practice.¹ Under the Water Charge (Infrastructure) Rules, a regulator responsible for price determinations must ensure that the service provider raises sufficient revenue from user charges to meet the prudent and efficient costs of service provision. ACCC staff have taken the view that the proportion of costs allocated to government does not constitute a regulated charge and therefore is beyond the scope of the Water Charge (Infrastructure) Rules. However, where a government is contributing to a regulated operator's costs, these rules envisage that the regulator would take this contribution into account *in advance* when determining or approving charges. It seems likely that IPART's current approach to regulation of State Water, which involves simultaneously determining the government contribution and the charges to direct users, will conflict with the Water Act and the subsidiary rules.

Even if the regulatory regime for State Water is not in conflict with the Water Act, concerns have been raised about whether or not delegating the task of setting the size of a government contribution to an independent regulator is consistent with good regulatory practice. According to one view, governments may decide to contribute

¹ For example, Cox and Seery (2010), p. 4.

taxpayers' funds to water service providers if they wish, but they should decide the amount and duration themselves; this task should not be delegated to an independent authority.²

Finally, putting aside the question of whether IPART should have a role in allocating costs to government, questions have arisen about the particular methodology adopted by IPART. IPART has justified its cost allocation on the basis of an 'impacter pays' concept. In 2001 the methodology used by IPART was reviewed by ACIL Consulting and found to be 'confused' and a 'somewhat arbitrary blending of beneficiary pays and impacter pays'. ACIL Consulting advocated a more thorough-going application of the impacter pays approach, at least for non-legacy costs. This advice was only partly taken up by IPART. Some of the same cost allocation decisions which ACIL Consulting found difficult to rationalise remain. To an extent, therefore, it appears that the current methodology used by IPART to allocate costs remains somewhat blurred.

This paper explores these issues in detail. Specifically, this paper seeks to answer the following three questions:

1. Is there an economic argument for attributing or allocating some of the costs incurred by wholesale water service providers, such as State Water, to the government? Put another way: should the government pay some of the costs incurred by State Water?
2. Is there an economic argument for delegating the task of determining the size of the government's contribution to an independent regulatory authority?
3. Is there an economic foundation to the cost allocation methodology used by IPART, and, if not, is there an appropriate alternative?

This paper suggests the following answers:

- There is an economic justification for allocating some of the costs incurred by a wholesale water supplier to the government where there are either public goods or 'legacy' issues—that is (a) where there are external benefits from the services provided by the bulk water supplier (such as flood mitigation) which cannot easily be charged to the beneficiaries, or (b) where there are changes in the regulatory requirements over time (such as changes in dam safety and/or environmental standards) which would, in other industries, be phased in over time. Either issue can justify a government contribution to the bulk water sector, although in the case of legacy issues, the size of that government contribution would be expected to be declining over time as existing sunk investments reach the end of their useful life and are replaced.
- There are recognised concerns with the delegation of government expenditure decisions to an independent authority. However, there are countervailing considerations. Specifically, delegating the task of determining the size of the government contribution to an independent authority (a) may facilitate sunk

² This is discussed further below.

investment by the service provider in the case where the service provider is privately owned and requires an assurance that the government contribution will be sustained into the future; and (b) may facilitate needed reforms when the service provider is government-owned and cannot otherwise make necessary reforms itself. The experience in Australia and around the world, especially in the water industry, shows that governments, as owners of water service providers, have found it difficult to achieve needed price or performance reforms such as rebalancing tariffs, increasing tariffs in response to long-run increases in the cost of supply, or reducing input costs. Delegating the regulatory role to an independent authority facilitates various reforms of government businesses that would not otherwise have been politically feasible.

- The imprecision in the application of the ‘impacter pays’ cost allocation framework seems to result from a failure to clearly articulate the rationale for the government contribution. The cost allocation methodology could be placed on a sounder footing by tying it explicitly to the rationales articulated above specifically, water users should pay for new facilities and upgrades of existing facilities, while the wider community should pay for any external benefits, such as flood mitigation. There should be separate treatment of costs associated with legacy issues such as might arise from changes in environmental and safety standards over time.

This paper is divided into five parts. The first part briefly sets out the historical and legal background. The next three parts address each of the questions above in turn. The fifth part concludes.

2. Background

IPART is responsible for setting the tariffs for wholesale water services in NSW. At regular intervals over the past 15 years IPART has made pricing determinations relating to the charges for wholesale water services in NSW.³ In the earlier part of this period these services were provided by the Department of Land and Water Conservation (DLWC). From 1 July 2004, the activities of the Department were separated into two parts: State Water, responsible for the management of the water supply assets; and the NSW Office of Water, responsible for water planning and management.

In making its pricing determinations, IPART has consistently taken the view that certain costs incurred by State Water should not be recovered from charges paid by State Water's customers. Instead, it has determined that, due to 'public good and/or legacy features of these costs'⁴ a proportion should be borne by the NSW government. In addition, IPART has allocated to the NSW government the revenue shortfall incurred by State Water where IPART considers full cost reflective pricing would have too great an impact on customers in some regions.

The proportion of the costs borne by the NSW government is both substantial and increasing over the course of the current regulatory period. According to the most recent pricing determination for State Water, the government contribution increases from \$26.4 million in 2009/10 to \$48.4 million in 2013/14. This reflects an increasing proportion of the total revenue allowance for State Water. The government share of the total revenue allowance increases from 31 per cent in 2009/10 to 43 per cent in 2013/14. The government share in the forecast capital expenditure increases from 55 per cent in 2009/10 to 66 per cent in 2013/14.⁵

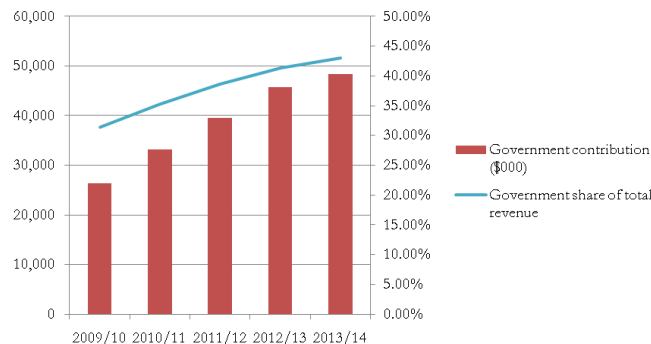
Combining the NSW government's cost share and its allocation for State Water's revenue shortfall, the NSW government's total contribution as set by IPART is \$172 million (2009/10) over the 2010/11-2013/14 regulatory period. Over the previous 2007/08 – 2009/10 regulatory period, the NSW government's total contribution as set by IPART was \$115.4 million (\$2006/07). Over these two regulatory periods, the revenue shortfall funded by the NSW government has reduced from \$24.6 million (\$2006/07) to \$5.4 million (\$2009/10) while the NSW government's cost share has increased from \$90.8M (\$2006/07) to \$166.6M (\$2009/10).

³ IPART (2001, 2006, 2010a).

⁴ IPART (2010a), p. 106: 'The prices that we allow State Water for its regulated bulk water services are intended to recover extractive users' share of the efficient costs incurred by State Water in providing its regulated bulk water services. The remaining costs are borne by the Government on behalf of the community in recognition of the public good and/or legacy features of these costs'.

⁵ IPART (2010a), p. 109. The primary driver of the increase in the Government contribution seems to be the large increase in capital expenditure, from \$30.7million in 2009/10 to \$59.9 million in 2013/14.

Figure 1: IPART 2010 price determination for State Water 2009/10-2013/14: government contribution



Under the 2004 National Water Initiative, Australian governments agreed to full cost recovery for water storage and delivery pricing and full cost recovery for all rural surface and groundwater-based systems.⁶ These principles were subsequently incorporated into the Water Act.⁷ IPART interprets ‘full cost recovery’ to mean recovery of the costs it has allocated to users, excluding those costs it has allocated to government.⁸

The principles in the Water Act are further elaborated in a set of rules made under section 92 of the Water Act, known as the Water Charge (Infrastructure) Rules. These rules require that the regulator set charges at a level which allows the service provider to receive sufficient revenue to cover prudent and efficient costs, less any other source of revenue. The only likely other source of revenue for State Water is some form of funding from the government.

IPART has expressed the concern that the Water Charge (Infrastructure) Rules are likely to preclude the application of cost-sharing ratios and that application of the Rules ‘would result in very significant price increases to State Water’s prices from 1 July 2014’.⁹ In a submission to the Department of the Environment, Water, Heritage and the Arts IPART recommends that the Water Charge (Infrastructure) Rules should be ‘amended to enable the established system of cost-shares to be carried forward’.¹⁰

⁶ NWI, clause 65 (ii) and 66 (v).

⁷ Clause 3 of the Water Act: ‘Water charges are to be based on full cost recovery for water services’.

⁸ The Water Act goes on to state: ‘(6) If full cost recovery is unlikely to be achieved and a Community Service Obligation is deemed necessary: (a) the size of the subsidy is to be reported publicly; and (b) where practicable, subsidies or Community Service Obligations are to be reduced or eliminated.’ Water Act, part 3, clauses 3 (3) and (6).

⁹ Cox and Seery (2010), p. 20.

¹⁰ IPART (2010b).

IPART takes the view that its charges allow State Water to achieve full cost recovery in all except a few valleys (the North Coast, South Coast, Peel, Gwydir and Namoi valleys). In other words, they define cost recovery as excluding the 'public good and/or legacy features of these costs'. IPART considers that a future regulator of State Water should be permitted to set user charges which exclude these public good and/or legacy costs without an explicit government subsidy.

As noted above, the Water Charge (Infrastructure) Rules allow for the possibility of separate government funding. In principle, the NSW government could advise the ACCC(or IPART, if it is accredited), of the level of the contribution it will pay to State Water. The regulator would then take that contribution into account when determining or approving regulated charges. In principle, in deciding the level of the contribution the NSW government could use a cost allocation methodology similar to that currently used by IPART. The primary difference from the existing arrangements is that the NSW government would have to complete this process in advance of a price determination by the regulator.

As noted in the introduction, the concerns and issues surrounding the government contribution in the regulation of State Water's charges can be boiled down to the following three questions:

- First, is there an economic foundation for a government contribution at all? In other words, are there economic grounds for requiring that some of the costs of bulk water services be paid by the government?
- Second, is there an economic argument for delegating the task of setting the government contribution to an independent authority?
- Third, is there an economic foundation for the cost allocation methodology adopted by IPART?

The next three sections consider each of these arguments in turn.

3. Is there an economic argument for a government contribution?

As we have seen, the National Water Initiative and the Water Act envisage ‘full cost recovery’ for the provision of bulk water services. Is there an economic argument for not recovering the full costs of wholesale water services from water users? The current policy consensus in Australia is that the charges for monopoly services should generally cover the full costs of providing those services¹¹. But there are some exceptions to this rule, particularly where there are public goods or ‘legacy’ issues. It is these exceptions that we will focus on here.

3.1 *Public goods considerations and full cost recovery in the long run*

There may arise an economic argument for long-term under-recovery of costs where there are public goods aspects to the service provided. Specifically, long-term under-recovery of costs might be justified if:

- (a) the monopoly infrastructure provides services other than services directly associated with the provision of bulk water; and
- (b) those additional services cannot easily be directly charged to the beneficiaries¹²; and
- (c) either those services require the supplier to incur some additional (incremental) cost; and/or there is an implicit or explicit agreement that any common costs will be shared in a particular way.

In the case of rural bulk water services, it has been suggested that the underlying infrastructure (dams, weirs, canals, and monitoring and flow control assets) provides services to the broader community such as flood mitigation or environmental monitoring benefits.

But how significant are these external benefits? The appendix sets out a brief survey of the role of flood mitigation in the services provided by dams in Australia. The conclusion is that although there are a few reported instances of dams being designed or sized specifically to provide flood mitigation services, these instances tend to be rare and the resulting dams are quite small. The number of dams for which flood mitigation is a primary or a secondary purpose is a small proportion of the total number of dams. In NSW, Burrendong Dam is the only dam of a material size which provides flood mitigation as a primary or secondary purpose. There is also a case that some of the costs of the hydrometric monitoring network can be attributed to flood mitigation services,

¹¹ There are important exceptions—such as roads, which, for small users at least, the marginal price is zero. Hotelling (1934) argued, on minimisation-of-deadweight-loss grounds, for marginal-cost pricing of key monopoly infrastructure, combined, if necessary, with government subsidies to cover any resulting shortfall in revenue. A discussion of the pros and cons of the marginal-cost-pricing argument goes beyond the scope of this paper.

¹² This might arise where the services have public good characteristics – that is, where it is difficult to exclude consumers from enjoying the benefits and where the marginal cost of usage is very low.

and/or that the hydrometric monitoring network provides flood mitigation services to the wider community.

Even if dams and other infrastructure assets provide flood mitigation services, it would not be necessary to allocate the costs of those services to the government if the beneficiaries of those services could be made to pay directly. Is it possible to charge the beneficiaries of flood mitigation services directly for these services?

If the beneficiaries of flood mitigation services are downstream of the assets owned by the water service provider, the water service provider may be able to recover the costs of these services directly from its customers. To a large extent, State Water's users are located along the river valleys downstream of State Water's dams and assets. Therefore, to a large extent, State Water's users also benefit from the flood mitigation services of State Water. In principle, therefore, State Water may be able to recover some or all of the costs of flood mitigation services through charges or levies on its users.

However, the communities downstream of State Water's assets will not necessarily be customers of State Water. Many landowners are not irrigators and therefore not part of the customer base of State Water. Some downstream communities have their own water management assets (such as dams). Some communities or enterprises rely exclusively on groundwater sources. In these circumstances the communities downstream from State Water's assets will not necessarily be customers of State Water.

Even if downstream landowners are customers of State Water it may be difficult to charge such users efficiently for flood mitigation services. Since the benefits and costs of flood mitigation do not vary with the quantity of water extracted or consumed by a water user, it is not efficient to levy charges for flood mitigation on the basis of quantity of water extracted or even on the basis of the size of an entitlement. At the same time, it can be difficult to set a flat fee per customer in a manner which reflects each customer's willingness-to-pay for (or benefits received from) flood mitigation. It may be easier for these services to be covered through general tax revenues. The World Meteorological Organization notes:

'Flood management benefits, being public goods, it is not easy to collect charges from the beneficiaries since it is not easy to determine the extent of benefit derived by any particular beneficiary from a flood management project. This is the main reason why flood management projects are usually financed by governments.'¹³

If there are additional or incremental costs incurred in providing benefits which are not directly received by the users of a regulated firm then those additional costs should not be charged to users—instead they should be funded elsewhere (perhaps through a government contribution). In addition, even if there are no additional or incremental costs incurred in providing the external benefits, it is still often considered fair for a share of the common costs to be paid by the external beneficiaries (or the government on their behalf). In other words, even where there are no incremental costs associated with

¹³ World Meteorological Organization, (2007).

providing the external benefits, there may be an implicit agreement between the government and the regulated firm on the sharing of the common costs.

Regulators in other states of Australia (outside NSW) have not, in practice, chosen to allocate flood mitigation costs to the government. For example, in Victoria all costs incurred in the provision of wholesale water supply by Goulburn-Murray Water are charged to users—although there are examples of government capital contributions to cover a proportion of costs incurred for flood mitigation at the time of a major capital project (such as for the upgrade of Eildon Dam in 2005).¹⁴

In 2000, the Queensland Competition Authority (QCA) noted that their preferred approach was that the costs of flood mitigation be charged to beneficiaries - that is, the downstream communities. Given the difficulties of directly charging those beneficiaries this would, in practice, imply that the costs should be borne by the government. However, in the absence of any mechanism for the government to pay for these costs, the QCA stated its intention to charge these costs to users, like the cost of any other safety or regulatory obligation.

‘Some water facilities, notably major storages such as dams and weirs, provide flood mitigation services to downstream catchments. It is necessary to determine how assets, or parts of assets, that have been provided for services other than the provision of water for consumptive uses should be addressed for regulatory purposes. Somerset and Wivenhoe dams, which supply water to various South East Queensland urban water utilities, both have capacity above their respective full supply levels which is normally empty and which can be used to temporarily store flood waters when required. ...

Given that there may be differences between the beneficiaries of flood mitigation works and users of water from relevant infrastructure facilities, the preferred approach would be for these works to be funded by the beneficiaries. In the absence of any specific arrangements relating to *flood mitigation works*, the Authority would propose to include these works in the regulatory asset base for pricing purposes.’¹⁵

In addition to flood mitigation works, there may be an argument for a government contribution for works which have wider environmental benefits. Here, however, the argument is not as clear. Many environmental objectives seem to be associated with preserving the environment in a given state. Most development of waterways disturbs, to some extent, the original environmental conditions and therefore is more likely to be associated with environmental harms than broader environmental benefits. Investment to remedy or offset past environmental harms caused by previous waterway development (such as the installation of fish ladders) merely attempts to reduce existing harm (and is

¹⁴ Goulburn-Murray Water downplays the flood mitigation role of its assets: ‘The primary role of a water storage is to harvest and store customers’ water entitlements, G-MW operates the dams to provide flood mitigation benefits where possible. Generally large water storages are not designed or operated specifically for flood mitigation’. (from the website of G-MW).

¹⁵ QCA (2000), page 40-41.

therefore a cost of doing business) rather than promoting wider environmental benefits. The next section addresses the question of how to phase in new regulatory requirements over time.

To summarise this section, there is a case, but not a strong case, that (a) there are some broader services provided by water infrastructure assets – particularly flood mitigation; and (b) it is not easy to charge the beneficiaries of these services for these services; and (c) where there are additional costs incurred in the provision of these services, direct users should not pay these incremental costs and, in any case, the external beneficiaries should pay a fair share of the common costs. To the extent that this case has merit, there is an argument for under-recovery of the costs associated with bulk water services from users in the long run.

3.2 Legacy and grandfathering issues

We have seen that there may be wider public benefits from wholesale water infrastructure which might justify some form of government contribution in the long-run. There is also an economic argument for a government contribution during the period of phase-in of new regulatory requirements, as assets created under a previous regulatory framework come to the end of their life and are replaced. This argument applies specifically to government-owned firms.

The argument runs as follows: in the course of their regulatory activity governments routinely impose costs or obligations on individuals and firms. These obligations might involve, for example, regulatory requirements relating to health and safety, the environment, or land use. But individuals and firms must often make substantial sunk investments to maximise the value of economic transactions, such as investments in plant and equipment, buildings, or in human capital. The value of that investment may be sensitive to the nature and extent of the regulatory requirements. The threat of future changes in regulatory requirements therefore can have a chilling effect on private investment.

Recognising this problem, governments routinely seek to minimise the impact of new regulatory requirements on investments made in good faith under a previous regulatory regime. One common way to achieve this is to grant an exemption from any new regulatory requirements, especially where the new regulatory obligation threatens to impose substantial costs or to take away the benefits of that investment. For example, changes in building regulations will typically only apply to *new* buildings. The practice of exempting existing investments from new regulatory requirements is known as ‘grandfathering’.

Alternatively, rather than grandfathering a new regulatory requirement, governments sometimes pay compensation. It is very common for major policy changes to be associated with substantial compensation packages (for example, there was a substantial compensation package associated with the government’s Carbon Pollution Reduction Scheme). In modern economies it is typically a constitutional right that compensation should be paid for government ‘taking’ of property. A change in a regulatory obligation, if it is material enough, may constitute a ‘taking’ for which compensation must be paid. Such compensation, like grandfathering, reduces the impact of new regulatory obligations

on existing investment, fostering a climate in which private sunk investment is protected and thereby promoted.

Not all new regulatory obligations will involve grandfathering of existing rights, or the payment of compensation. Whether or not grandfathering or compensation is appropriate will depend on factors such as: the extent to which the new obligation imposes costs on service providers or their customers, the extent to which the regulatory obligation constrains the operations of the service provider or its customers, and the extent of the sunk investment by the service provider or its customers in the status quo. For example, a firm in a competitive industry may be able to pass through the increased cost of a regulatory obligation to its customers, weakening the case for compensation or grandfathering (although there may be a case for compensation for the customers downstream). Despite these exceptions, it is common for special exemptions or compensation to be granted for investments made in good faith under a previous regulatory regime.

However, and importantly for our purposes, these arguments do not apply to investment by government-owned firms. A government firm does not face sovereign risk or regulatory risk. If the government chooses to impose an obligation on its own firm, there is no deterrent effect on investment in the future. A regulatory obligation can be imposed on a government-owned firm immediately, even if privately-owned firms in the same industry would receive an exemption (grandfathering) or compensation.

At the same time, however, in complying with that obligation, the government-owned firm should not necessarily be able to pass on the increase in costs to its customers.¹⁶ After all, the users of the state-owned firm may have also made a sunk investment in reliance on the services of the firm subject to the regulatory requirement. Passing on the costs of a new regulatory requirement may have a chilling effect on investment by customers.

The only remaining option is for the government, as owner of the regulated firm, to absorb the loss. This will typically require a government contribution of funds – either a one-off capital injection (to reduce the size of the regulatory asset base) or an on-going contribution.

In summary, when it comes to new regulatory obligations there is a key difference in the treatment of private and government-owned firms. Imposing a new regulatory obligation on a privately-owned firm may threaten the value of the investment made by that firm or its customers, potentially chilling valuable economic investment in the economy. For this reason it is common practice to grant an exemption (grandfathering) from new regulatory obligations for past investments. But these arguments do not apply to government-owned firms. New regulatory obligations can be imposed on government-owned firms without a risk of deterring subsequent investment in the future. However, the costs of those obligations should not necessarily be passed on to the customers of that firm. It may be appropriate for a government-owned firm which chooses to comply with a new regulatory obligation to under-recover its costs during the remaining life of its existing infrastructure.

¹⁶ Unless its customers are also government-owned firms.

These arguments only apply to investments made in reliance on the existing regulatory regime. Any new investment in infrastructure by the government-owned firm, serving new customers or expanding services to existing customers, should be expected to cover the full costs including any associated with the new regulatory requirements.

These arguments have direct application to the bulk water industry. Cost recovery expectations for bulk water assets and regulatory obligations on dams have increased over time. Dam safety standards are significantly higher now than in the mid-twentieth century. The cost of upgrading a dam to meet modern safety and environmental standards can be substantial.¹⁷ At the same time, environmental standards and obligations have also increased. In NSW the carrying out of major works on a dam can trigger a requirement for the installation of fish passage facilities which can involve a material cost.

If dams in NSW were privately owned it is likely that the regulatory obligations would either be grandfathered – that is, the requirements would only apply in full to new dams, allowing a partial or total exemption to these rules for existing dams – or the government would pay the costs of the upgrade.

This argument suggests that State Water (and its owner, the NSW government) should bear the cost of upgrades to existing dams (or buying out the users, whichever it the cheapest).¹⁸ Any new assets (whether private or government-owned) should conform to the new standards, and the users of those assets should pay the full economic cost. However, in the transition period, as the existing sunk assets wear out and are replaced, the government should expect to make a contribution to the costs of State Water. This is an additional argument for the under-recovery of the costs of State Water in the short and medium term.

There is a more general principle here as well. Continuing active investment by the private sector requires an assurance that sunk investments made in good faith will not subsequently be devalued through a change in government policy. Past implicit or explicit promises to investors should be respected. IPART has explicitly recognised the importance of respecting past promises and assurances by not passing on to users charges which they were not expected to pay (and did not expect to have to pay) in the past:

‘The Tribunal expressed its view in 1996 that it believed that many of the rural water infrastructure assets were put in place in the late nineteenth and early

¹⁷ As an example of the dam upgrades required, PriceWaterhouseCoopers (2010) cites the experience of SunWater (in QLD): ‘The upgrades for these dams included activities such as constructing a two metre high wall and providing a watertight gate to allow operational access to SunWater’s Monduran Pump Station (Fred Haigh Dam), raising of main dam and saddle dam walls and an extension of a saddle dam (Bjelke-Petersen Dam), raising the height of the dam wall by 1.6 metres, allowing the dam to hold excess water until it can pass safely through the spillway (Borumba Dam) and insertion of steel cable “anchors” (Tinaroo Falls Dam).’ PriceWaterhouseCoopers (2010).

¹⁸ Where the cost of upgrading a dam to modern standards is high it is theoretically possible that this cost could exceed the value created by the dam through irrigation. In this case, it may make sense to pay the irrigators to cease their activities rather than incur the cost of upgrading the dam.

twentieth century because it was a government priority at the time to expand agriculture and rural development. Water prices had until recently contained substantial subsidies and there was never any stated intention by governments across Australia to fully recover these charges.

This changed in 1994 when governments determined to implement plans to eventually recover the full economic costs of bulk water service. The Tribunal does not believe that irrigators, originally attracted into agriculture by the provision of heavily subsidised infrastructure, should now be expected to pay commercial returns on assets that would not have been put in place if subjected to commercial scrutiny.

The Tribunal decided to draw a 'line-in-the-sand' and determine that all water assets put in place prior to 1 July 1997 should not be included in the asset base for pricing purposes. This means that users will not be charged depreciation or a rate of return on pre 1997 expenditure. However the Tribunal did state, and reiterates its view that all new expenditure, including renewal and compliance expenditure, post 1997 that is attributed to users will attract commercial rates of return.¹⁹

If State Water is subject to new safety and environmental obligations, the associated costs should not necessarily be passed on to downstream customers. Those downstream customers have made sunk investments in reliance on a supply of water from State Water at a reasonable long-run price. An unexpected increase in those charges would threaten future investment by customers. As a general rule, charges should only increase to existing customers where the quality or the volume of the service they receive increases.²⁰

¹⁹ IPART (2001), p. 23.

²⁰ An increase in dam safety could potentially be construed as an increase in the quality of the service provided, but this benefit is shared by all downstream landowners, not just irrigators.

4. Is there an economic argument for delegating the task of setting the government contribution to an independent authority?

The previous section focused on the question of whether or not there is an economic argument for a government contribution to the costs of State Water. We saw that there may be grounds for a government contribution in the event of either public goods aspects to the services provided by State Water, or to protect investment downstream made in good faith under a previous regulatory regime. Let's turn now to the question of whether or not the task of determining the size of the government contribution should be delegated to an independent regulatory authority.

4.1 *Independent authorities and government subsidies*

There is a line of thinking which argues that independent authorities should *not* be given the power to decide the level of taxes or subsidies. For example, the World Bank writes:

'Four main considerations generally determine the allocation of responsibilities between agencies and ministries. ... while political control over tariffs was once considered the norm, there is now growing recognition that, once the key policy principles or rules are established, society's interests are best served by delegating responsibility to an independent agency. *Tax and subsidy issues, by contrast, are still widely regarded as the province of political rather than independent bodies.*'²¹

Similarly, Tom Winsor, the former UK Rail Regulator writes as follows:

'Establishing a regulator is not – and should not be – an exercise in ministerial abdication of power and responsibility. It is generally accepted that ministers should retain responsibility for broad sector policy, including public investment, the structure of the industry, taxation, subsidies and the legislative framework.'

The UK regulatory framework for the rail sector involved the regulator indirectly setting the level of the government contribution to the train operating companies. This proved unsustainable when, following the Hatfield disaster, expenditure on the rail track network increased considerably, implying a large increase in charges:

'In October 2000, [following the Hatfield disaster] the regulator increased Railtrack's revenue from £10 billion to £14.8 billion, and in December 2003 increased that by a further £7.4 billion, giving a final settlement of £22.2 billion. These were, of course enormous increases, and attracted a great deal of political dissatisfaction. Politicians complained bitterly that an unelected regulator was making very significant decisions about the levels of public expenditure on the railways and, by extension, the diversion of public money away from other uses such as health, education and criminal justice. ... Ignoring the fact that the financial consequences of the regulator's decisions were entirely a function of contracts voluntarily entered into by a sovereign government without any

²¹ Smith, Warwick, (1997), 'Utility regulators – roles and responsibilities', Public Policy for the Private Sector, Note No. 128, October 1997, emphasis added.

participation of the regulator, government ministers and others criticised the regulator's jurisdiction, as if it had been a function of his statutory birthright instead. And so they resolved (with the assistance of the soon-to-be appointed chairman of the Office of Rail Regulation) to cut it down, and, using primary legislation (Railways Act 2005), placed a financial cap, determined by the national treasury, on the value of the contract-based indemnities. ... This is an illustration of political intolerance of what was perceived to be the power of the regulator to make policy as to the level and application of public subsidy in the railway industry. ...”

Winsor goes on to report a conversation he had with Robin Cook, MP—a cabinet minister at the time of the collapse of Railtrack. Robin Cook is reported to have said: “Tom, in the 17th century, Parliament fought a bloody civil war to gain control of public expenditure, and we were not about to give it up to you”.²² The lesson highlighted by Winsor is that the delegation of government expenditure decisions to independent authorities is highly sensitive and potentially not sustainable:

‘The issue is the correct balance of political jurisdiction and political criteria on the one hand, and regulatory jurisdiction and regulatory criteria on the other hand. If the boundary line between the two is placed in the wrong position, it will come under possibly severe pressure, and along its fault lines it may fracture. That is what happened in the UK in 2001 in the railway industry, and the costs were very considerable.’

4.2 *Independent price-setting as a commitment device*

However, despite the line of thinking set out above, there has been something of a tendency over time towards greater delegation of expenditure decisions. This raises the question as to why. Under what circumstances is it appropriate to delegate government expenditure decisions to an independent authority?

There are two possible circumstances where it may be appropriate to do so. The first arises where the service provider is privately owned, and where the service provider (or its customers) must make on-going sunk investment in reliance on a continuing stream of government contributions. The second circumstance arises where the service provider is government-owned and where achieving various reforms is not politically feasible.

The first argument is familiar from the literature on the independence of regulatory authorities. Much of that literature emphasises that regulated firms must make substantial sunk investments. That investment is subject to the threat of hold-up—the risk that the government will use its influence to set prices which do not cover costs. Faced with this risk the regulated firm may be reluctant to invest.

In order to resolve this problem, the government needs some mechanism which allows it to commit—to ‘tie its hands’—to not intervene to lower prices in the future. One possible such mechanism is an explicit contractual arrangement. To the extent that the

²² Winsor (2011).

government can credibly commit to be bound by the contract in the future, a long-term contract may allow the government to overcome the commitment problem it faces. However, long-term contracts have drawbacks. It is difficult to specify precisely how prices should vary in the light of changes in demand and technology which cannot even be imagined in advance. An alternative is to delegate pricing authority to an independent agency charged (amongst other things) with ensuring that regulated revenues cover costs. Delegating responsibility for pricing decisions to an independent authority is one mechanism for government to make a credible commitment to keep its hands off prices, thereby facilitating long-term sunk investment.

This argument extends to the case where the regulated firm receives an on-going contribution or subsidy from the government. If the government retains control over this contribution, the regulated firm faces the risk that the contribution will be withdrawn or substantially reduced in the future. Faced with this risk the regulated firm may be reluctant to invest. Although in principle it may be possible to specify the amount of the government contribution in the form of a regulatory contract, where that contract is long-lived it may be difficult to specify the amount of the government contribution far in advance. In this context, delegating pricing authority to an independent agency can be part of a commitment device to facilitate sunk investment by the regulated firm. This argument has been used to justify the need for an independent ‘subsidy regulator’ in the case of the rail industry.²³

This argument, however, applies primarily to privately-owned firms. Government-owned firms (such as State Water) do not face a hold-up problem. Indeed, one of the primary reasons for government ownership may have been precisely to overcome the hold-up problems that arise when governments are tempted to intervene in the prices of privately-owned firms.

What then, might be the reason for delegating the price-setting role for a government-owned corporation?

4.3 Independent-price setting and pricing reform

There is another argument for delegating the price-setting role to an independent authority in the case of government-owned corporations. This argument is based on the observation that, by delegating the price setting task to independent authorities, governments can achieve price reforms which would not otherwise be politically feasible.

According to this view, the delegation of the task of setting user charges and the government contribution to an independent authority such as IPART plays the important role of de-politicising the tariff-setting process, enabling reforms, particularly pricing reforms which would not be politically feasible if the government carried out the price-setting task itself.

Why might governments have problems with the price-setting task? A naïve view might suggest that the government, as owner, would promote the public interest—that is, would set tariffs and charges which reflect the lowest sustainable long-run cost of providing the

²³ Biggar (2006).

regulated service, and would set a structure of charges which reflect the structure of costs. However, this doesn't seem to be the case. There is a widespread view that the government, as owner of a monopoly service provider, is either unable or unwilling to take decisions which promote overall economic welfare and/or promote the long-term interests of end-users. It seems that the government-as-owner either cannot or will not take decisions which improve pricing structures, efficiency, or investment decisions. Specifically, it seems that certain pricing reforms are simply politically infeasible. As a consequence, over time, under-pricing and cross-subsidies build up which governments are unable to unravel.

The National Water Commission in their Review of Pricing Reform in the Australian water sector explains this problem in detail:

'Before the first national water reform package in 1994, governments were using water pricing as an instrument to achieve their prevailing equity, rural/social development and economic efficiency objectives. While some jurisdictions had undertaken reforms, political expediency often prevailed over commercial good sense in delivering water services (Industry Commission 1992). This approach to pricing led to problems in rural and urban areas. The 1992 reports by the Industry Commission ... and a report for COAG on water resources policy, chaired by Sir Eric Neal, identified the following issues:

- *Use of water without regard to its cost of supply, leading to excessive consumption and the need for costly investments in new supply capacity.* For example, in the urban sector, the tradition of providing water and sewerage services as a public service meant that water authorities typically levied charges in the form of property or land valuation-based rates, with little or no usage charges applying to water consumed or large free allowances. This gave little financial incentive for customers to limit their consumption.
- *Under-recovery of the costs of service provision and major asset refurbishment needs in rural areas for which adequate financial provision had not been made.* In the rural sector, governments actively funded irrigation development and subsidised the operation of headworks and main supply systems. Under-recovery of costs reduced the ability of water businesses to make investment decisions autonomously. ...
- *Commercial and industrial water users often paying far more than the costs of service provision (and cross-subsidising domestic water customers).* For example, in Melbourne in 1990-91, households were paying the equivalent of \$0.66 per KL of water while suburban shops were paying \$4.27 per KL and office towers in the CBD were paying \$10.16 per KL. Disparities were even more pronounced in Perth and several other cities. Similarly, the cost of Community Service Obligations (e.g. pensioner rebates) was high (e.g. approximately \$30 million per year in Sydney) and these were often not fully funded by government, and thus being subsidised by the rest of the customer base (Industry Commission 1992).

The water industry seems particularly susceptible to political involvement in pricing decisions. The US Water Wiki notes:

‘Ironically, democracy often becomes the enemy of sustainable pricing, since locally elected officials responsible for pricing are under enormous pressure by their voters to limit pricing. There are many documented examples of disgruntled voters “throwing” their elected officials out at election time over a rate issue.’

Similarly, the Total Environment Centre notes:²⁴

‘Current arrangements for council based water utilities result in the inevitable politicisation of decisions regarding water resource planning and pricing. TEC strongly believes that these decisions should be divorced from political considerations and based on sound economic, environmental and planning principles.’

The Chamber of Commerce and Industry of Western Australia (WA) provides a specific example from the electricity industry:

‘Achieving cost reflective pricing is difficult in WA due to the political nature of the decision making. For instance, a recent market review by the Office of Energy recommended that the tariff for residential users increase by 52 per cent in 2009-10, then 26 per cent and then 13 per cent in 2011-12. The final approved tariff increases for residential customers was a cumulative increase of 16.5 per cent in 2009 and then by 7.5 and 10 per cent in 2010. Consequentially, the retail pricing remains well below cost, despite the recent increases, and the community service obligation payments are in the order of \$197 million for 2010-2011.’

A partial solution to the politicisation of pricing decisions, and the political infeasibility of pricing reform, is to delegate the price setting task to an independent authority. The independent authority, if it is able to establish a reputation for credible, independent, objective and fair analysis, is able to achieve pricing outcomes which would otherwise be politically infeasible.

The Australian Water Association emphasises the role of the independent regulator in depoliticising water pricing:

‘The benefit that economic regulation confers is to depoliticise the process, such that politicians are provided with a defence against allegations that price rises are unnecessary (“the independent regulator did it”) and the opportunity for political interference in price setting is reduced.’

The Water Services Association of Australia makes a similar point:

‘Recent regulatory price paths to 2011-12 and 2012-13 suggest typical residential bills will increase significantly in the coming years if current consumption levels are maintained or increase. Price increases are not a result of regulation. Rather, independent price regulation provides customers with a level of reassurance that regulator-approved price increases are ‘appropriate’, whilst benefitting businesses

²⁴ Total Environment Centre (2009).

by allowing sometimes complex and contentious pricing issues to be debated in an expert and objective forum”.

Importantly, this argument is consistent with the history of independent economic regulation in Australia. The first independent economic regulators in Australia were set up not to control the market power of privately-owned firms, but to *improve and reform the pricing of government-owned firms*, through de-politicisation of the price-setting process. Cox and Seery (2010) point out:

“The Government ... established IPART’s predecessor, the Government Pricing Tribunal, to depoliticise utility pricing and to improve the efficiency of utilities and to improve the pricing of their services. In making the Second Reading Speech, the then Premier, Nick Greiner, noted that the Tribunal would ‘ensure that the price-setting process is depoliticised and rational’.”²⁵

This argument—that a primary reason for the delegation of price setting authority to an independent authority is to overcome political obstacles to reform of the prices of government-owned corporations – has only recently been raised in academic literature. For example, an article in a US law review notes:

“Governments may have forgotten that one of the principal reasons for creating regulatory agencies, more than a century ago, was to depoliticize such regulatory decisions in order to foster both consumer and investor confidence in the decisions of a politically neutral, quasi-judicial, and expert body.”²⁶

It is harder to find this concept in the economics literature. Perhaps the closest reference is a recent article in the journal *Water Policy* by two consultants from Castalia:

“In some cases, a government may overcome short-termism in tariff decisions for government-controlled utilities by delegating tariff-setting to an independent body. The Office of Utilities Regulation in Jamaica, for example, established its credibility as a telecommunications regulation, and was then able to order water tariff increases that were grudgingly accepted by the public. The Independent Pricing and Regulatory Tribunal in New South Wales has been able to do the same’.”²⁷

²⁵ Cox and Seery (2010), p. 4. Furthermore, in a recent speech Greg Houston of NERA emphasises that the Government Pricing Tribunal was established specifically to sort out “the mess that was water pricing” that had arisen from the fact that “all the decisions were simply made by politicians with the usual unhealthy mix of objectives”. Houston (2012).

²⁶ Roman (2002). Similar arguments about the need to depoliticise the price-setting process have been used to justify privatisation of water utilities. Wu and Malaluan (2008): ‘In addition, water privatisation was perceived as a means to end government subsidisation by ‘depoliticising’ water pricing; public water utilities often priced water and sanitation services at below cost-recovery level, creating enormous financial burdens for governments in developing countries’.

²⁷ Ehrhardt and Janson (2010), p. 38.

This section has focused primarily on the role of an independent regulator in achieving pricing reforms. But in principle, the establishment of an independent regulator may also facilitate reforms in other areas, such as productive efficiency. As with pricing, it appears that government-as-owner is often unwilling or unable to take needed reform steps, perhaps due to a short-termism or a lack of independent information. NERA (2006) suggests that independent regulatory oversight can clarify the objectives that should be pursued by the regulated firm and can establish a consistent framework of accountability and incentives.²⁸ There is some empirical evidence that the establishment of an independent regulator improves sector performance. Estache and Rossi (2008) find that ‘firms operating under the control of a regulatory agency use about 9.5% less labour to produce a given bundle of inputs’.²⁹

But the ability of an independent regulator to bring about reforms of a government-owned enterprise should not be over-emphasised. Although independent regulation can improve the quality and quantity of performance information and allow a degree of independence in decision-making, it cannot bring about change in a firm which is unable or unwilling to reform. As Ehrhardt and Janson (2010) put it:

‘Regulation cannot overcome the problems of corruption and interest group politics that drive up costs in government-controlled utilities. And because most government-controlled utilities are not commercially motivated, there is no inherent incentive on managers to reduce costs. Regulators may cap prices at no more than cost-recovery levels, or fine utilities for non-compliance, but the losses the utility makes in consequence will not make the utility’s managers worse off, but simply be passed on to tax-payers. It follows that regulation cannot be applied to a government-controlled utility in isolation, but rather should be designed to support complementary governance reforms’.³⁰

To summarise, although there is a line of thinking that governments should retain control over expenditure decisions, there is a clear historic case for delegating pricing decisions when (a) the service provider is privately owned and there is a need for the government to commit to a level of government contribution or subsidy for a period of time; or (b) the service provider is government-owned and achieving needed price or performance reform would otherwise be politically infeasible. This is not the textbook rationale for regulation, which focuses on the control of deadweight loss. Rather, this rationale for independent regulation focuses on correcting defects in governance that arise in government ownership.³¹

²⁸ See NERA (2006), p. 12.

²⁹ Estache and Rossi (2008), p. 10.

³⁰ Ehrhardt and Janson (2010), p. 39.

³¹ Although I have used the short-hand ‘independent regulator’, in practice no government-funded agency can ever be (and nor arguably should it be) completely independent of government. There are important institutional questions regarding how to design regulatory agencies which have both a credible degree of independence and, at the same time, sufficient accountability and transparency to ensure on-going efficiency and productivity in their operations.

5. Is there an economic foundation for the cost allocation methodology used by IPART?

The first section of this paper argued that there may be economic grounds for a government contribution to a bulk water service provider; the second section pointed out that there are economic grounds for delegating the task of setting that government contribution to an independent regulatory authority. This final section discusses the methodology that should be used to determine the magnitude of that government contribution.

In determining what share of the costs incurred by State Water should be allocated to the government, IPART has, in recent years, relied primarily on an ‘impacter pays’ approach to cost allocation.

The ‘impacter pays’ notion comes from the literature on environmental law and economics. ‘Impacter pays’ is typically contrasted with ‘beneficiary pays’, as two different possible allocations of rights or ‘duties of care’.³² Under the ‘impacter pays’ or ‘polluter pays’ concept, the environment (and its users) has the right to be free from harm or disturbance. If an action causes harm or disturbance to the environment or a user, the causer of that harm must pay the economic cost. In practice this means that the impacter must incur the costs of complying with all environmental rules or obligations, and in some cases, must compensate victims for any remaining harms caused.³³ In contrast, under the beneficiary pays approach, the causer of a harm or disturbance to the environment has the right to inflict that harm, and the beneficiary of any reduction in harm must pay for that reduction.

In the context of bulk water services, the impacter pays approach asserts that all economic, safety and environmental costs or impacts associated with the provision of bulk water services should be borne by the users of those services. In contrast, the beneficiary pays concept would give extractive users the right to engage in certain environmental harms. If the community wishes to impose, say, higher environmental standards—such as fish passage facilities—the beneficiaries (which in practice means the wider community) would be required to pay.

The use of the impacter pays concept in the regulation of State Water dates back to a report by ACIL Consulting dated 31 July 2001. The report noted that at that time ‘from an economic viewpoint at least, thinking on cost allocation remains confused’ and involved ‘a somewhat arbitrary blending of beneficiary pays and impacter pays’. As an illustration of this blending or confusion, ACIL Consulting pointed to ‘items such as fish passage and water temperature infrastructure investments’ which were to be charged 50 per cent to water extractors:

‘This seems a strange half-way house. Either we examine the direct benefits to extractors from improved fish passage and conclude that they are probably zero,

³² See, for example, Dodds (2004).

³³ Dodds (2004) distinguishes impacter pays from polluter pays, categorising impacter pays as an enhanced or extended form of polluter pays.

or we assume that extractors will benefit because they will be allowed to continue extraction – in which case ... the share allocated to extractors might well be much higher’.³⁴

ACIL Consulting argued for a clean or pure implementation of the impacter pays approach—specifically, all forward costs should be allocated on an impacter pays basis—in effect, most if not all of these costs of bulk water services would be attributed to extractors. However, it also recommended a clear separation for legacy costs which ‘should be clearly separated and allocated only lightly, if at all, to extractive users’ and ‘any affordability constraints should be applied transparently on top of these derived allocations’.

In its 2001 Pricing Determination, IPART adopted ACIL Consulting’s recommended emphasis on the impacter pays approach (changing the spelling to ‘impactor pays’) but defined it slightly differently as: ‘allocating costs to individuals or groups in proportion to the contribution they make to creating the costs or the need to incur the costs’.³⁵

However, confusingly IPART went on to assert that the government, in imposing higher environmental standards, can be a *causer* of costs, thereby opening the door for some of the costs of higher environmental standards to be attributed to the broader community rather than (as ACIL Consulting recommended) attributing such costs entirely to extractive users. In effect, although IPART stated that it uses an impacter pays approach, its application of that approach includes some beneficiary pays elements:

‘Whilst the Tribunal considers the ‘impactor pays’ principle is appropriate for bulk water cost allocation, it notes that there does not appear to a universally accepted understanding about its application. The Tribunal has attempted to allocate costs between extractive users and the broader community, represented by the Government, essentially in proportion to the contribution each group makes to creating the costs or the need to incur the costs. In so doing the Tribunal considers that the impactors causing the need for expenditure variously include both:

- the community, in changing the standards which natural and built infrastructure is required to meet and in requiring increased levels of environmental resource and asset management; and
- bulk water users, by creating the need for system management expenditure, environmental mitigation and, effectively, by requiring ongoing bulk water delivery from assets which might otherwise be decommissioned rather than upgraded to meet contemporary standards’³⁶

³⁴ ACIL (2001), p. ix.

³⁵ IPART (2001), p. 2. In contrast, they defined the beneficiary pays approach as allocating ‘costs to different individuals or groups in proportion to the benefits that each individual or group stands to derive from the costs being incurred’.

³⁶ IPART (2001), p. 32.

Consistent with this perspective, in its 2001 decision, IPART explicitly identified the broader community as a causer of higher environmental standards and therefore allocated a share of these costs to the government:

‘The areas of expenditure allocation which generated the highest level of stakeholder concern were compliance capital costs. These include capital costs associated with ensuring structures such as dams and weirs comply with relevant dam safety standards, meet relevant public safety and occupational health and safety standards and comply with contemporary standards to mitigate the environmental impacts of stream interruption. Particular concerns have been raised with the Tribunal about capital costs for structures to mitigate environmental impacts. These include fish ladders to enable native fish passage past structures such as weirs, multi-level water offtakes in dams to reduce cold water pollution and release valves in dams sufficient to enable high volume environmental flows.

In the Tribunal’s (IPART’s) view the need to incur this expenditure arises because of the community’s expectation that the needs of the environment will be met at the same time as the needs of extractive users. There is a significant legacy component to some of these costs with evidence that fitting of fish ladders has occurred for many years although some constructed in earlier years are now thought to be inadequate. Ongoing extraction and changing community values both constitute impacts driving these areas of expenditure.

Having reviewed the arguments put to it, IPART has concluded that environmental compliance capital expenditure has both legacy and non-legacy components and is attributable to both extractive users and the general community (on behalf of the environment). IPART has also reviewed the allocation of compliance capital costs in the areas of occupational health and safety and public safety and has similarly concluded that these represent a mix of legacy and non-legacy costs which are attributable to both extractive users and the community.

The allocation adopted by IPART for these particular costs is less polarised than that proposed by ACIL. However, IPART believes this is likely to result in allocations that appropriately balance the competing interests of different stakeholders.”³⁷

It appears that, even in the 2001 pricing decision, the clarity sought by ACIL Consulting in recommending the impacter pays approach has been blurred. Ten years later, there is continuing evidence of this confusion in the most recent IPART decision. The cost allocation for fish passage works remains a contentious issue. Recall (as noted above) that in the 2001 report, ACIL expressed surprise at the practice of allocating these costs 50 per cent to users and government. But this practice has continued. The 2010 State Water pricing determination reports:

‘A number of stakeholders proposed that the Government should be responsible for 100% of costs of fish passage works that are initiated by requirements to comply with NSW dam safety standards. Namoi Water stated:

³⁷ IPART (2001), pp. 33-34.

We would submit that the fish passage trigger caused by that work [dam safety upgrade], when that work commences, again is a legacy issue and 100 per cent the cost of the New South Wales Government.

Gwydir Valley Irrigation Association also shares this view:

When fish passage work requirements are triggered by Pre- 1997 Dam Safety Upgrades, the fish passage costs should be included as part of the Upgrade costs and allocated accordingly (100% Govt).

Lachlan Valley Water stated that it:

...recommends that the provision of fish passage as a result of dam safety upgrades to pre-1997 assets be considered an integral component of the dam safety upgrade and therefore 100% funded by Government.

We consider that the proposal to allocate these costs to the Government is inconsistent with the 'impactor pays' principle. Fish passage is necessitated by the existence of dams which prevent fish movements. As dams exist primarily for irrigation purposes, a 50% fish passage user share is a reasonable sharing of costs on irrigators, regardless of whether the timing of dam safety upgrades has triggered the works.³⁸

As cited above, ten years earlier ACIL Consulting described the decision to allocate 50 per cent of fish passage works to the government as 'a strange half-way house'—corresponding to neither the impacter pays nor the beneficiary pays approach. They concluded that the approach at the time represents 'a somewhat arbitrary blending of beneficiary pays and impacter pays'. It seems that IPART's underlying cost allocation objectives remain blurred.

It seems this problem with a lack of clarity of objectives and methods arises in part due to IPART's treatment of legacy costs. In principle, any new regulatory obligation which imposes significant costs or constraints on existing users should potentially be grandfathered, no matter when it was introduced. However, IPART has taken the approach of defining as legacy costs those costs incurred to meet regulatory obligations imposed prior to July 1997. Costs of regulatory obligations imposed after July 1997 are excluded from the legacy. This has left IPART in the position where more recently incurred costs to comply with regulatory obligations cannot be labelled as legacy costs but nor does it seem right to allocate those costs entirely to extractive users. As we have seen, IPART has squared this circle by blurring the impacter pays concept.

In my view, there is a straightforward resolution of these difficulties. A return to first principles, drawing on the analysis in the sections above, suggests the following principles for cost allocation:

- As a general rule, all of the forward-looking costs of providing new bulk water services infrastructure or the costs of upgrading new facilities to meet new environmental or safety standards should be met by the future users of those facilities. This could be called an impacter pays approach, however as we have seen, such labels are not particularly useful and probably should be dropped.

³⁸ IPART (2010), pp. 113-114.

- However, as discussed above, where there are external benefits, such as flood mitigation, and where it is not easy to charge the beneficiaries for these services, there is an argument for a government contribution which should cover at least the incremental cost of providing these external benefits and may include a share of the common costs.³⁹
- Legacy issues should be treated separately. Careful analysis should be undertaken before passing on the costs of any new environmental or safety obligations to the customers of that infrastructure. As a general rule, existing customers should not be materially disadvantaged by new regulatory obligations. In particular, where there are material costs associated with upgrade works such as fish passages, which would threaten the value of sunk investment by users, the associated costs should not be passed on to extractive users in the short or medium term. In the long-term, as existing assets reach the end of their useful life, there can be a transition price path to a new full cost recovery level.

6. Conclusion

This paper explores features of the regulatory regime for bulk water services in NSW. Concerns have been raised that elements of this regime are incompatible with the Water Act, or good regulatory practice. In contrast, this paper has suggested that there is an underlying economic framework which can justify several of the practices of IPART, although there is scope for further clarifying the rationale and methodology used by IPART.

Specifically, this paper makes the following points:

- There is an economic argument for under-recovery of the costs of bulk water service provision in certain circumstances. In the long-run some degree of under-recovery is justifiable where there are external benefits from bulk water service infrastructure which cannot be easily charged to the beneficiaries (i.e., public goods aspects of the bulk water services). In the medium term, some degree of under-recovery is justifiable in the case of a government-owned service provider where regulatory obligations or cost-recovery expectations have changed over time and where, in the case of privately-owned service providers, there would be an exemption from the regulatory obligation or compensation paid to the affected parties. Such grandfathering or compensation is necessary to protect sunk investments made in good faith under existing regulatory regimes, to promote such investment in the future.

³⁹ Flood mitigation could and perhaps should be categorised as a 'water planning and management' charge. It is generally accepted that the costs of certain water planning and management activities should not be borne by users, such as the development of state policies or intergovernmental agreements. Other water planning and management charges can be allocated to users or to government. (The Water Act does not appear to define 'water planning and management charges', but the National Water Initiative pricing principles set out a framework for classifying water planning and management activities which includes 'Flood Plain Management' as one of its lists of activities.)

- There is also an economic argument for an independent regulator to have some role in setting the level of the government contribution. Although the government contribution could be paid in the form of an occasional capital injection linked to specific capital projects, this has not been the route taken in NSW. Where there is an on-going government contribution, delegating the task of tariff setting and cost allocation to an independent authority both increases the assurance to the customers that the contribution will continue (thereby facilitating sunk investment) and also (in the case of a government-owned service provider) increases the scope for pricing reform and changes in the level of the contribution that would otherwise be politically infeasible.
- IPART, following the advice of ACIL Consulting, claims to have relied primarily on an ‘impacter pays’ approach to cost allocation. Yet, the same cost allocations which appeared blurred to ACIL Consulting still occur. Confusingly, IPART appears to have defined the government (representing the broader community) as the causer or impacter of certain costs (such as the cost of fish passage works). I recommend clarifying the cost allocation grounds by dropping labels such as impacter pays or beneficiary pays and instead making clear that (a) all efficiently-incurred forward looking costs of new, upgraded or replacement facilities will be charged to the relevant users⁴⁰; (b) the costs of providing external benefits (such as flood mitigation) which cannot be charged to users or beneficiaries will be charged to the government; and (c) costs incurred to meet new environmental or safety standards associated with existing infrastructure will not be passed on to existing users for the remaining life of those assets.

This paper has not addressed the question of whether or not these conclusions are compatible with the Water Act or the Water Charge (Infrastructure) Rules. Further work will be necessary to determine whether or not a regulatory framework, such as the one articulated here, could be accommodated within the existing rules.

⁴⁰ As noted earlier, there may arise circumstances where it is not economically efficient to replace or upgrade existing facilities, in which case certain facilities should be withdrawn from service, even if that means discontinuing irrigation.

Appendix: Dams and Flood Mitigation

This appendix briefly explores the question of the importance of flood mitigation in the range of services provided by dams in practice.

Looking around Australia, there are clearly a few cases of dams which have a material flood mitigation role. According to Macquarie River Food and Fibre, the Burrendong Dam (on the Macquarie River in central-west NSW) would be one-third smaller without its flood-mitigation function.⁴¹ Similarly, a paper by PriceWaterhouseCoopers notes that a number of dams in Queensland were designed and operate to provide flood mitigation services. For example:

- Peter Faust Dam, Proserpine (SunWater) – Proserpine River has a total catchment area of approximately 470 square kilometres. Following the overtopping and breaching of the levee banks constructed by land owners in major flood events, a decision was made to plan and construct a flood mitigation dam on the river. ... The Dam, commissioned in the early 1990s, operates as a flood mitigation dam, with the purpose of reducing the frequency and severity of floods in the Proserpine River.
- Wivenhoe Dam, Brisbane (SeqWater) – Wivenhoe Dam is built on the Brisbane River, approximately 80 kilometres from Brisbane. It was designed by the former Water Resources Commission and built in 1984. It provides safe and reliable water supply to the south-east Queensland region along with flood mitigation services. Wivenhoe Dam ... has a total storage capacity of 2.6 million megalitres. Standard full supply level is 1.15 million megalitres. The remaining capacity is used for flood mitigation, supported by operational rules concerning spillways (once water levels have exceeded full supply level, dam operators have a time limit to return dam levels to full supply level and can within this time limit control, to an extent, the profile of discharges and hence influence the severity of flooding downstream of the dam).^{42 43}

However, the Australian National Committee on Large Dams (ANCOLD) database on large dams in Australia reports that out of 564 dams on the database, only 14 (1.2 per cent) have, flood control as a *primary* purpose. None of these dams are very large (with the exception of a dam on the Ross River near Townsville in Queensland). These were as follows:

⁴¹ Macquarie River Food and Fibre, submission to IPART, 21 June 2006. Burrendong is upstream of Dubbo, amongst other towns.

⁴² PriceWaterhouseCoopers, 2010, *Pricing Principles for Dam Safety Upgrades*, August.

⁴³ Robinson and Ryan (2002): “There are several operational river improvement trusts (RITs) in southeast Queensland (Ipswich and Boonah) that primarily undertake engineering works for flood mitigation”.

Table 1: Large dams with flood control as a primary purpose

Number	State	Name of Dam	Size (k cu m.)
1	VIC	Jacana	2870
2	VIC	Kalkallo	4700
3	NSW	Loyalty Road	1520
4	QLD	Ross River	212 000
5	QLD	Washpool Ck	2800
6	QLD	Cerrito Ck	400
7	SA	Sturt	2040
8	SA	Leigh Creek Retention	16 700
9	SA	Flood Control Dam 10B	37
10	SA	Flood Control Dam 11	17
11	SA	Cobbler Creek	420
12	ACT	Jerrabomberra	1600
13	ACT	Wrights	32
14	ACT	Lower Molongolo	150

Another eight dams are listed as having a *secondary* purpose of flood control. These include some larger dams, including the dams mentioned above in NSW and QLD.

Table 2: Large dams with flood control as a secondary purpose

Number	State	Name of Dam	Size (k cu. m.)
1	NSW	Burrendong	1 118 000
2	NSW	Manly	2000
3	WA	Ord River	10 760 000
4	QLD	Somerset	380 000
5	QLD	Wivenhoe	1 165 000
6	QLD	Peter Faust (Proserpine)	491 400
7	SA	Hope Valley	3630
8	SA	Kangaroo Creek	19 160

Overall, it appears that although some dams provide flood mitigation services as either a primary or secondary purpose, flood control is seldom the primary reported purpose of a dam, and dams whose primary purpose is flood control are not usually very large. There are a small number of larger dams which provide flood mitigation services in addition to their primary purpose. The total number of dams for which flood mitigation is a primary or a secondary purpose is a small proportion of the total number of dams. In NSW, Burrendong Dam is the only dam of a material size which provides flood mitigation as a

primary or secondary purpose. For the average or typical dam, flood mitigation is not an important service.

Dams are not the only assets which might provide flood mitigation services. For example, the NSW Office of Water incurs the operating and maintenance costs of the hydrometric monitoring network. In the most recent price determination several stakeholders argued that water users should not have to pay for the full costs of the hydrometric network. IPART decided that some of the costs of the network were attributable to flood mitigation, and decided on a 70:30 sharing of costs:

‘In the absence of water entitlement holders, we acknowledge that there would be some gauging stations in place to manage flood events. However, this would likely be a very small number relative to NOW’s existing and future network of gauging stations – which is largely in place to manage the system of water entitlements. Therefore, we consider that a 70% user share of these costs is appropriate and consistent with the ‘impactor pays’ principle. This acknowledges that 70% of the costs associated with the hydrometric network are due to the presence or impact of water entitlement holders, while 30% of these costs are incurred due to the broader community.’⁴⁴

⁴⁴ IPART (2009).

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