QCA review of irrigation prices

Supplementary information
Allocation of centralised costs

February 2011

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1 Introduction

The Queensland Competition Authority (QCA) is currently investigating irrigation prices to apply in 22 bulk water schemes and 8 distribution systems owned by SunWater.

SunWater also owns other assets and provides other services.

SunWater has outlined to the QCA the nature of its centralised costs, and how these should be allocated to its various assets and services, including bulk water schemes and distribution systems subject to this price review[1].

The QCA has sought additional information about SunWater's rationale for its proposed approach. This supplementary submission provides more detail and further justification.

2 Previous approach

The 2006 – 2011 price paths were developed with indirect costs allocated using direct operating costs (excluding electricity) as the driver. Other options were considered by SunWater and the Tier 1 Working Group (comprising irrigator representatives) including different cost groups (eg direct costs plus electricity, lower bound costs etc), business centre full time equivalents (FTEs) and an estimate of effort by indirect staff. In assessing options, it was noted that there was very little variance in the outcomes for the proportion of costs allocated to bulk water and distribution systems.

For the forthcoming regulatory period, SunWater has proposed that its centralised costs be allocated proportional to the forecast labour cost in each bulk water and distribution system, and other SunWater assets and activities.

3 Pricing principles and regulatory application

The ACCC, IPART and QCA have recently considered cost allocation matters in the water sector. These are summarised below.

3.1 ACCC

The Australian Competition and Consumer Commission (ACCC) recently published draft pricing principles for infrastructure charges, which consider cost allocation issues:[2]

> *Shared costs incurred in providing several categories of service must be allocated between those categories. Where there is an identifiable relationship between the shared cost and the services being provided, a causal allocator should be used to share those costs between services... Where shared costs are immaterial or a causal relationship cannot be established without undue cost and effort, the operator may use a non-causal allocator to allocate costs between services.*

[1] SunWater. *Background Paper. QCA Review of Irrigation Prices. Centralised Costs* (January 2011)

[2] Australian Competition and Consumer Commission. ACCC pricing principles for price approvals and determinations under the water charge (infrastructure) charge rules. Draft (January 2011. p47

This recognises that some costs cannot be assigned with precision on a causal basis, and that a proxy measure is required.

3.2 QCA

The QCA recently set out requirements for distribution-retail businesses in South East Queensland, requiring that amounts which are not directly attributable to a particular service or geographic area must be allocated on a causal basis, except where a causal relationship cannot be reasonably established. The QCA indicated that amounts may be allocated on a non-causal basis provided that:

- there is likely to be a strong positive correlation between the non-causal basis and the actual cause of resource or service consumption or utilisation that those costs represent; or
- the cost to derive the causal allocation outweighs the benefits of allocating items on that basis; and
- the aggregate of all amounts allocated on a non-causal basis is not material. [3]

In its 2005 investigation of pricing for the Gladstone Area Water Board (GAWB), the QCA identified three categories of operating expenditure:

- system direct costs – costs specifically attributable to system zones which were thereby allocated directly;
- system overhead or indirect costs – costs attributable to a service but not to a specific zone. It was considered that these costs should be allocated on the basis of the operating and maintenance costs incurred by individual zones; and
- general administration costs – costs that could not be attributed to a particular service or zone.

General administration costs were allocated to customer service functions (10%) and demand-based functions (90%). Customer service functions include billing, customer contract administration, queries and customer pricing matters, and were distributed based on customer numbers. The remaining 90% were allocated between GAWB's three major segments based on an assessment of relative management effort, in accordance with the following weightings:

- 0.5 for supplies from Awoonga Dam
- 1.0 for raw water delivery
- 2.0 for treated water production and delivery.

For the 2010 investigation, the QCA engaged Davwil Designs and Management Services (Davwil) to conduct a review the cost allocation methodology. Davwil noted that the 10% allocation for customer service functions was having a significant impact on small volume customers and that it believed the level of specific overhead activities associated with customers to be significantly less than 10%.

The QCA described Davwil's conclusions on this matter as follows:[4]

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[3] Queensland Competition Authority. *SEQ Interim Price Monitoring. Information Requirements for 2010/11. July 2010.* P5

> *... Davwil concluded that the current 90-10 split should be replaced by overhead costs being allocated solely on the basis of relative administrative effort required to provide storage, raw water and treated water services. Effectively, Davwil recommended that overhead costs should be assigned to customers on the basis of their share of demand in the zone.*

The Authority accepted that overhead costs should be allocated on the basis of relative administrative effort, and recommended that GAWB's general administrative costs be allocated to customers on the basis of the relative administrative effort required to provide storage, raw water and treated water services.

In accepting Davwil's recommendations, it appears the QCA may have applied an approach whereby general administrative costs were allocated across bulk water, distribution and treatment assets proportional to customer demand. However, this is not entirely clear from the QCA's recommendations.

3.3 IPART

The Independent Pricing and Regulatory Tribunal (IPART) recently reviewed bulk water charges for State Water Corporation (SWC), including consideration of how common costs should be allocated to each of SWC's 12 valleys.

IPART considered that salaries and wages (represented as FTEs) represented a key cost driver and a significant proportion of total costs. IPART's decision was to adopt SWC's proposal to allocate costs based on FTEs.[5]

4 SunWater's proposed approach

SunWater has proposed that costs are allocated to both operating and capital expenditure, using three tiers which reflect the degree to which costs can be assigned to individual activities or assets. These three tiers are:

- Directly attributable costs, where time and expenses can be assigned directly to activities benefiting a specific asset/activity. For example, a certain percent of a staff member's time may be dedicated to a bulk water scheme (eg in response to a particular asset management requirement), in which case that percentage of labour cost is allocated to that scheme. These are called **direct costs**;
- Costs that are indirectly attributable, where costs are attributable to a type of activity or asset, but it is difficult to establish a direct causal link to a particular activity/asset. For example, some functions such as water accounting, hydrographic services and dam safety only relate to bulk water, and are allocated accordingly. This means that distribution systems are not allocated any costs for these activities. The costs that are allocated in this way are called **indirect costs**, and are allocated in proportion to forecast labour costs for each

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[4] Queensland Competition Authority. *Final Report. Gladstone Area Water Board: Investigation of Pricing Practices June 2010.* p139

[5] Independent Pricing And Regulatory Tribunal (2010). *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014. Water – Draft Determination and Draft Report.*

asset class (eg bulk water) or activity (eg facilities management under contract with another asset owner); and

- Costs where there is no direct causal relationship with individual or types of assets or activities. These are called **overhead costs.** Importantly, these costs are not just administration or corporate costs, but the residual costs that cannot be allocated as direct or indirect costs.[6] These overheads are allocated to all bulk water, distribution and other assets/activities proportional to the forecast labour costs for operations and capital expenditure.[7]

Under this approach, 54% of all centralised costs are allocated as overhead, with 31% allocated on a more targeted basis as indirect costs, and 15% directly costed.[8]

4.1 Why change approach?

SunWater's business profile has changed significantly since the previous price paths were developed in 2006. Importantly, SunWater has (and continues to) embark upon significant investment in new water supply assets to service the mining and industrial sectors.

Direct cost is no longer a relevant indicator in this environment, as the nature of the investment cycle is different to operating existing assets. Furthermore, major capital projects are lumpy and will not generate operating expenditure until (and if) they are completed and commissioned.

Since 2006 SunWater has centralised a number of functions, changing the profile of centralised costs and the scope of activities. A more sophisticated approach is required that better targets the allocation of this expanded scope of centralised activities, rather than simply spreading the expanded scope of functions in the same manner as before.

4.2 Outcomes

SunWater's approach to allocating centralised costs results in around half of its centralised costs being allocated bulk water and distribution systems (52% in the 2011-12 year), the balance relating to other assets (eg industrial pipelines) or activities (eg consulting).

Of the costs allocated to bulk water and distribution, around 18% are directly charged to these schemes, with 50% allocated as indirect costs, and 32% as overhead.

Of the costs allocated to bulk water and distribution, just under half are assigned to the 22 bulk water schemes and just over half to the eight distribution systems.

It is notable that the distribution systems account for a slightly greater proportion (around 60%) of operating costs (excluding electricity and centralised costs) than bulk water. This would suggest that adopting the previous approach, where costs were

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[6] Insurance costs are allocated using a different driver. This is discussed in detail in Attachment 1 to SunWater's background paper.

[7] While labour is the major driver, a small portion of overhead costs are assigned to non-labour costs (excluding electricity) using a 5% loading for these costs. For example, if the purchase of chemicals costs $100, $5 in overhead is allocated to that purchase in recognition that the purchase and use of materials also has some bearing upon centralised costs This loading is not applied to large development and dam safety projects, costs such as procurement and legal are directly charged and hence it is not necessary to apply the 5% loading.

[8] Based on the 2012 forecast year.

allocated proportional to direct costs (excluding electricity), would result in distribution systems receiving a greater share of centralised costs compared to bulk water schemes.

5 Justification

SunWater's proposed approach aligns with regulatory practice in so far as:

- where there is a clear causal relationship between a centralised cost and a particular assets or activities, costs are allocated directly based on an estimate of effort required. As set out above, 18% of centralised costs are allocated in this way;
- where no causation can be established between a particular centralised cost and a bulk water or distribution service, then that cost is not allocated to that services (eg dam safety costs are not allocated to distribution assets);
- where a cost relationship exists but costs cannot be directly assigned to a particular asset or activity, then labour has been selected as the cost allocator on the basis that it has a strong positive correlation between the costs being allocated and the services provided.

SunWater does not expect that the practice of identifying and assigning relevant costs direct costs to assets/activities would be controversial. However, adopting labour as the basis for allocating costs that cannot be directly assigned warrants further explanation.

In short, SunWater submits that labour is the most appropriate basis for allocating these costs. Moreover, there is a stronger correlation between centralised costs and labour, than alternative indicators (eg customer demand). This is supported by IPART in its considerations for State Water Corporation discussed above, although in this case FTEs were adopted instead of labour costs.

5.1 Relevance of labour for allocating costs

The costs of many centralised functions cannot be directly attributed to individual bulk water supply schemes, distribution systems or other assets/activities. These functions include the corporate costs (internal audit, finance, human resources, IT etc) and centralised technical/service functions such as water accounts, asset management and service delivery.

As indicated above, the QCA has previously considered that such costs could be allocated on a non-causal basis provided there is likely to be a strong positive correlation between that non-causal basis and the actual cause of resource or service consumption or utilisation that those costs represent.[9]

By definition, where no causal relationship exists for a certain cost, then there is no single, technically correct approach for allocating that cost. However, some approaches will clearly be better than others, and a comparative analysis is useful for explaining why labour is suitable.

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[9] Queensland Competition Authority. *SEQ Interim Price Monitoring. Information Requirements for 2010/11. July 2010.* P5

For example, an output measure such as water deliveries or customer demand could be used to apportion indirect and overhead costs among various assets or activities. However, there is not a strong relationship between output and centralised costs, particularly given these costs are typically fixed regardless of output, or in particular water demand.. Furthermore, SunWater has different types of outputs across its range of business activities, and selecting one output measure (Eg water demand) will bias the outcome (refer also the following section).
Other alternative indicators of effort, where a relationship may exist between centralised costs and SunWater's assets and activities, include:

- number of customers – the cost of some centralised functions will be affected by the number of customers serviced. For example, within the Service Delivery group resourcing customer enquiries could arguably be affected by the size of the customer base. However, the relationship between customer numbers and related customer functions is not linear – the addition of one customer does not generate additional costs for the customer service function. Moreover, customer numbers only impact upon a small portion of centralised costs – for example asset management, dam safety or internal audit costs will not be sensitive to the number SunWater customers. ;
- asset characteristics – some costs may be affected by the characteristics of certain assets. For example, older assets, critical assets and more complex assets may require more intensive asset management effort.[10] However, assets will have a mix of these characteristics – for example an aged asset that is less critical will require a lower level of management effort. This highlights the problem in choosing which asset characteristic is most relevant. Moreover, the relationship between asset feature (age, replacement value etc) and centralised costs is imprecise, and will generally have no bearing on many non-asset management costs that are centralised. ;
- transactions – some assets/services involve more transactions which need to be supported by centralised resources. Assets involving a greater proportion of purchasing requirements (eg fleet, chemicals, electricity), customer transactions (eg transfers of water entitlement) or other transactions such as property dealings will arguably have a greater impact upon the level of centralised resources to support those transactions. However, these transactions only apply to a limited number of centralised activities and would not have broad relevance.

Each asset/activity will involve a different mix of customers, assets and transactions. For example, some bulk water schemes service many customers yet have relatively few storage assets (eg Mareeba-Dimbulah). Other bulk water schemes will have fewer customers but involve more storage assets (eg Nogoa Mackenzie).

Similarly, some distribution systems involve a significant number of transactions (eg chemical procurement, land access) yet have less complex assets (eg no pumping due to gravity systems). For example, Mareeba and Bundaberg distribution systems have

[10] SunWater's approach adjusts for this to the extent that centralised technical costs associated with one asset type are only allocated to those assets – for example centralised water treatment technical resources are only allocated to water treatment assets.

around the same number of customers, yet Mareeba is predominantly a gravity system while Bundaberg involves significant pumping assets.[11]

Accordingly, selecting one of the above categories to allocate costs is likely to bias the outcome towards one of these measures.

This could be remedied by using multiple drivers to allocate different cost types, similar to the approach adopted for GAWB in the QCA's 2005 investigation. However, this involves additional complexity and requires judgements about the relationship between cost groups and any nominated driver. Indeed, selecting multiple drivers can increase the scope for error as it may require a number of different cost relationships to be found when only a weak relationship exists. [12] As such, it promotes illusory precision.

Rather than selecting a driver(s) based on output, customers, asset characteristics or transactions, SunWater has selected direct labour on the basis that it provides a more balanced indicator of the utilisation of centralised costs.[13] For example, all other things being equal:

- a service or asset with many customers will involve greater direct labour cost (eg meter readings, differing service requirements, managing peak demands) relative to an asset with fewer customers ;
- a service or asset with greater complexity, criticality or operational effort will also require greater direct labour input (eg increased monitoring and maintenance), compared to a more simple, less critical asset; and
- a service or asset that is transactionally intensive is likely to require more direct labour input compared to a service or asset that involves little or no external inputs or transactions with third parties. For example, assets that require significant procurement effort are likely to involve greater labour costs to manage, store and utilise those inputs procured. Similarly, assets with a high number of customer transactions are likely to involve greater labour effort to implement the water delivery aspects to those transactions (eg meter readings, managing new connections etc).

Furthermore, a labour driver is the best basis for allocating costs across regulated and non-regulated services. This is discussed below.

5.2 Application for unregulated activities

SunWater has extensive assets and activities beyond bulk water and distribution systems supplying irrigation customers. Indeed, the current approach to cost allocation means that these activities absorb around half of SunWater's centralised costs.

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[11] AS set out in Figure 4 of SunWater's centralised cost paper, SunWater's approach results in Mareeba being allocated significantly less centralised costs compared to Bundaberg.

[12] As set out above, the approach for GAWB in 2005 used two drivers, with costs allocated based on customer numbers resulting in disproportionately high costs being allocated to small customers.

[13] This holds so long as the operation of that asset is internally resourced, which is predominantly the case for SunWater assets.

The allocator for indirect costs must be able to sensibly assign costs to these different types of assets and activities, including non-regulated activities. These other assets and activities include:

- non-irrigator water supply assets such as industrial pipelines and Julius Dam – these assets involve very few customers (often less than 10 major per pipeline) and relatively few transactions, while the asset characteristics are quite often less complex than for irrigation (eg single, closed pipeline systems compared to open channel networks);
- asset developments – involving investigation and development of new assets, particularly for water supply to the mining and industrial sectors. SunWater has a number of major developments in the advanced stages of implementation, including Connors River Dam;
- external contracts – SunWater provides significant facilities management services to other asset owners. SunWater is not the water supplier in this situation, nor the asset owner;
- consulting – SunWater provides engineering and related consulting services to other parties. Again, this does not involve SunWater assets nor water supply customers;
- hydro-electricity - SunWater owns and operates a hydroelectric generator at Tinaroo Falls Dam; and
- water trading - SunWater trades its portfolio of water entitlements. These entitlements are not infrastructure assets, and the customer base changes from year to year, as do the type, value and number of transactions. There are also very small direct costs for this activity.[14]

Labour is the most common element across these different activities and assets, and reflects the level of effort and organisational resources deployed.

While some other allocators could be selected for some or all indirect and overhead costs, they will not have broad application across the regulated and unregulated business. For example, some unregulated activities involve no infrastructure assets (water trading, consulting, external services) or have very few customers (eg industrial pipelines).

6 Conclusion

SunWater's proposed approach to cost allocation assigns centralised costs directly, where there is a direct causal relationship. Where a centralised cost relates to certain asset or service class (eg bulk water), costs are allocated in proportional to the forecast labour cost to each individual asset/activity within the broader asset/activity class. For centralised costs where no causal relationship exits, forecast labour costs are also adopted as the driver to allocate these costs.

Centralised costs are allocated to both operating and capital expenditure.

[14] Like any water entitlement owner, SunWater bears its share of bulk water costs associated with these entitlements.

There is clearly a relationship between labour and the centralised services and costs to be allocated. Labour is also reflective of a broad suite of centralised services, thus avoiding potential distortions that would arise from other measures. Labour is also a meaningful driver across SunWater's entire business, including for other assets and services.