

Background paper
QCA review of irrigation prices

Service framework

Introduction

The Queensland Competition Authority (QCA) is to recommend prices for SunWater's irrigation customers. In undertaking this review, it is important that the pricing outcomes are consistent with the broader service arrangements between SunWater and its customers. These arrangements are generally bound by:

- contracts between SunWater and customers;
- customers' water entitlements; and
- SunWater's obligations under the various water planning instruments (including Resource Operations Licences¹ and associated conditions set out in Resource Operations Plans).

This framework is very different to that of many other water businesses subject to regulation, where the water supplier manages for a demand-supply balance on behalf of customers, within a defined service footprint.

The purpose of this paper is to provide a brief overview of SunWater's service framework in order to provide context to the issues being considered by the QCA. The paper is structured as follows:

- a summary of the different supply regimes that can exist in the water sector; and
- a description of the specific supply arrangements in place between SunWater and its customers.

Supply regimes in the water sector

In the water sector, there are two different types of service regime: centralised and decentralised. These are discussed below.

Centralised regime

A centralised regime involves the service provider taking responsibility for managing the demand-supply balance in its area of operations. This includes taking measures to respond to supply-side events, including droughts, and planning augmentations to meet demand growth.

This centralised regime typically applies in metropolitan / urban centres.

By their nature, centralised regimes require the service provider to control those aspects of the supply chain for which it has planning and supply responsibilities. This

¹ A Resource Operations Licence authorises the licence holder to interfere with the flow of water in a Water Supply Scheme, as detailed in the associated Resource Operations Plan, to the extent necessary to operate the water infrastructure to which the licence applies.

usually requires the service provider to own the underlying water entitlements relied upon to supply its customers.

In managing the demand-supply balance, the service provider will consider both supply side and demand side measures. Service providers may also have regulatory powers to set and impose restrictions as a demand side response to water shortage.²

A defined level of service (LOS) is a key feature of this regime. This LOS, which sets the target frequency, duration and maximum period for restrictions, provides the basis for supply planning. Demand management and source augmentations are a function of these LOS – for example a higher LOS might require greater/sooner augmentation, or greater supply contingency.

The fundamental supply obligation under the centralised regime is to anticipate and meet the demand requirements for users in a defined service area, in accordance with the LOS.

Decentralised regime

A decentralised regime involves water users being responsible for their own water supply management, including planning and procurement. This typically requires that end users hold their own water entitlement.

Users are expected to manage their water supply risks through, for example:

- holding surplus entitlements as a buffer to drought events, peak demands, or to secure growth needs;
- sourcing alternative supplies (eg groundwater); and
- using temporary trade markets to either source additional water, or sell water to derive income.³

This decentralised regime is commonly applied outside of reticulated networks in metropolitan areas, and usually occurs for commercial users with significant water demands (eg irrigators, mines, and power stations).

The service provider does not manage for the demand-supply balance. As such, it has no role in planning nor in demand-side management.

The rules for water sharing in times of drought are set by the resource regulator.⁴ In Queensland, the Department of Environment and Resource Management (DERM) decides water sharing rules, and SunWater implements those rules (eg via the announced allocation).

² These are also being applied as permanent measures in some jurisdictions.

³ For example, irrigators may choose to sell water rather than use it for irrigation where the returns from the temporary trading market are higher.

⁴ The service provider will still have a role in administering the rules set by the Resource Manager.

There is no LOS under a decentralised regime. Users bear the risk of water being available under their entitlement, and DERM determine the target reliability of those entitlements.⁵

As drought or water shortages occur, the service provider continues to be responsible for delivering against water entitlements, in accordance with the water sharing rules in the Resource Operations Plan (ROP) as well as Critical Water Sharing Arrangements approved by the Department of Environment and Resource Management in accordance with the ROP. The service provider is not responsible for drought management, and is not required to prepare a drought management plan under the *Water Supply (Safety and Reliability Act) 2008*.⁶

In closing, SunWater operates under a decentralised regime, which means:

- SunWater’s customers are responsible for managing their own demand-supply balance, and procure water rights accordingly;
- SunWater does not undertake water supply planning, sets or manages to a LOS, or respond to supply shortages. Rather, SunWater supplies water to customers in accordance with their entitlements at a given point in time; and
- SunWater’s charges do not recover any planning or drought management costs (as it does not incur them). Rather, customers undertaken their own measures to manage their supply risks.

Service features

SunWater provides bulk water, channel delivery and drainage services. Each of these are delivered under a decentralised regime. The features of each of these services are summarised below.

Bulk water

The fundamental obligation for the bulk water service is to store and deliver water to a customer, in accordance with their rights to take water. These rights relate to water entitlements, which were originally initialised in a ROP.

There are two key features for water entitlements:

- the location for taking water – being the zone for their water entitlement, which is usually defined by river section; and
- the priority of their allocation – usually medium or high priority.

Customers can alter these rights, subject to approval by DERM. For example, the location can be changed to a different river section. The ROP usually sets the

⁵ As set out in Water Resource Plans.

⁶ Refer to Section 122(a) in particular.

constraints for such changes. These are not matters for the bulk water provider, and are not a service feature.

The customer's diversion of water is also subject to conditions on their pumping works, which are set under planning and development laws.

There is a fundamental linkage between water entitlements and bulk water assets – without those assets, the water entitlement would not exist.⁷ Similarly, the bulk water asset owner can only supply services to water entitlement holders⁸, and nobody else. To do otherwise would be in breach of its license obligations. Accordingly, the *Water Act 2000* effectively requires that a water entitlement holder must have a contract with the asset owner.⁹ This is different to a centralised regime, where the water supplier will anticipate and manage for growth from new customer demands.

The core service feature relates to the operational aspects of scheduling releases to meet customer day-to-day demands. This is constrained by storage outlet size (rarely a constraint in practice) travel times for water from the time of release to diversion at a customer's pump.

The ROP provides the overarching regulatory framework for this service, and also specifies the scope of assets covered by the ROP, which are integral to the management of the overall system to service bulk water entitlement holders. SunWater's obligations in relation to the ROP are set out in its Resource Operations License, which is an authority to operate a storage and interfere in the flow of water (essentially via storage and release). The key aspects of this ROL and related conditions set out in the associated ROP include:

- operational conditions for storages, such as minimum storage levels, environmental release rules and constraints on changes in the rates of release;
- water sharing rules (such as announced allocation or continuous sharing rules);
- environmental monitoring and reporting requirements; and
- recording and reporting water use by entitlement holders.

The ROP also sets out the scope of storage assets applicable to a scheme, usually in separate infrastructure schedules listing the features and license conditions for those storages. Other assets required to provide the bulk water service, including gauging stations and distribution works connecting different river or groundwater systems, are also required to meet the conditions of the ROP but are not necessarily listed in the ROP itself as they do not store or regulate the flow of water in a watercourse.

⁷ Specifically those entitlements that benefit through supplementation of natural river flows from releases from water storage.

⁸ This could include a person holding rights to water through a seasonal water assignment or temporary transfer.

⁹ Various provisions under the Act operate to achieve this outcome. For example, a transfer of water entitlement can only be registered if there is a supply contract with the resource operations license holder in place.

A water ordering regime is used to manage releases, and often requires customers to order water some days in advance of taking water (or otherwise having a standing order over multiple days).

As set out above, other aspects to the water supply such as ‘reliability’ (or long-term water availability) are intrinsic to the water entitlement, and are managed through the water resource planning process. For example, water resource plans specify water allocation security objectives (WASOs) that are a measure of historic water availability and are used as a benchmark in setting the water management rules in the ROP.

This contrasts to a centralised regime, where the water supplier plans and manages to a LOS, and is in control of supply and demand factors to achieve that LOS.

The bulk water service does not involve a water quality dimension, as SunWater does not control water quality nor treat water quality to a particular standard. Rather, water is supplied on an as-is basis, in its raw state. In some instances there are regulatory requirements intended to optimise raw water quality, set in the ROP, which are orientated towards environmental outcomes, rather than for the benefit of water users.

Channel (network services)

The core delivery obligation of SunWater in channel networks is to divert the water available to the customer (under their water entitlement) on their behalf, and deliver it to their offtake. This diversion occurs at SunWater’s pump stations or river offtakes, where water entitlements are measured. In some cases, these pump stations and distribution works provide a dual function for bulk water, where they are also required to underpin entitlements into other river or groundwater systems.

Importantly, SunWater is responsible for managing distribution losses in the channel system. This means that if the customer has 100ML available to them at the river, then SunWater must ensure it manages distribution losses to make the full 100ML available at the customer’s offtake. SunWater holds its own water entitlements for these losses.¹⁰

SunWater does not forecast future demand from the network nor plan for expansions to the service footprint to upgrades to capacity. In theory, this does not preclude developing commercial arrangements with new users to do so although in practice this is difficult to achieve.

Customers taking water from channels hold a separate, additional contract for this service.

There is no statutory requirement for this agreement.

¹⁰ These entitlements were initially established through water planning and in interim Resource Operations Licenses. In theory, SunWater could purchase additional water to meet any shortfall, at its cost.

The service aspects for the channel network are considered below.

The first aspect relates to ordering times, which are usually constrained by the nature of the infrastructure and the original design basis for the network – in some cases the network can provide water ‘on demand’, while in other cases advanced orders must be placed.

Supply interruptions from planned maintenance events (including aquatic weed control) occur within a service target framework, where the scheduling, notice for and duration of interruptions are important to customers.

The period of supply is another feature. In SunWater schemes, water is typically supplied all year round. This contrasts to other irrigation networks, for example in NSW and Victoria, where the channel network operates over a specified irrigation season.

Some networks experience periods where demand exceeds the capacity of the network. When this occurs, water supply is rationed in accordance with an established regime of flow rate limitations and/or a roster.

As with bulk water supply, there is no quality attribute to this service. However, SunWater does have regulatory obligations in relation to its use of chemicals for weed control and discharging water to the environment.

Unlike distribution networks in a metropolitan (centrally planned) setting, SunWater does not manage for growth in the demand footprint. Rather channel networks are stable in terms of their coverage, and any expansions (including related capacity upgrades) would occur on a stand-alone commercial basis.

Drainage

The drainage service relates to the acceptance and disposal of water from land, which is usually also serviced by the channel network. Water accepted can be excess water from irrigation, but the drainage infrastructure is designed to remove large rainfall events.

Nonetheless, drainage infrastructure was integral to the design and development of the channel network, as it was required to allow a change in land use to irrigation cropping for the area served. Hence drainage and channel infrastructure services the same area.

SunWater maintains the capacity of the drainage infrastructure, for the serviced land.

Drainage rates are set under regulation.

Augmentation

Under a decentralised regime, growth or changes in demand are met through trading of water entitlements. In some instances, unallocated water has been identified in

Water Resource Plans, presenting opportunities for a proponent to develop a water storage and sell additional water allocations.¹¹ In evaluating its investment, the proponent would need to consider competition from existing entitlement holders in the same market.

In these circumstances, each investment should be considered on a standalone basis, and existing users unaffected by the investment - indeed, they will be competing with the proponent in the water entitlement market.

Hence where storage capacity is added, generating additional water entitlements to the proponent, existing users should not bear the costs of spare capacity, nor the risk of uptake. Rather, these are costs and risks that should be assigned to the proponent. Conversely, existing users should not derive a benefit from augmentation without paying for those benefits – in this case, this transaction should be negotiated commercially between the parties.

Similarly, existing users should be no better or worse off as a result of distribution investments (channel capacity upgrades), as the proponent will bear the costs and risks of the capacity generated. Where new pipelines or channel systems are constructed, they too should be considered as standalone investments (noting that any arrangements for non-infrastructure measures aimed at improving utilisation of existing assets relate to the existing customer base, with costs and prices adjusted accordingly).

SunWater has made investments in accordance with the above arrangements since corporatisation in 2000, and plans to do so into the future.¹²

This contrasts to the augmentation framework under a centralised regime, where prices to existing users can incorporate the (efficient) cost of spare capacity and future augmentation to meet forecast or actual growth, or to improve system security to achieve a LOS target.

¹¹ The Department of Environment and Resource Management has published policies in relation to the release of this unallocated water. This can involve payment for unallocated water reflecting its market value.

¹² Prior to 2000, when the formal water entitlement regime was not yet established, augmentations occurred under a variety of arrangements.