EXECUTIVE SUMMARY

SunWater owns 22 water supply schemes servicing irrigators.

SunWater and customer representatives (comprising a Tier 1 peak reference group, and Tier 2 scheme-level reference groups) developed price paths from 2006/07 to 2010/11, in accordance with the State Government's rural water pricing policy. At the end of this time, 15 of the 22 schemes will have achieved the minimum lower bound cost recovery target.

The Queensland Competition Authority (QCA) anticipates that it will be directed to develop prices at the end of this current price path, from 1 July, 2011 to 30 June, 2016.

The QCA engaged Synergies Economic Consulting (Synergies) to compile background information to inform the Authority's investigation, in relation to general scheme descriptions, scheme infrastructure, service standards, segment prices and known scheme level issues.

Business overview

SunWater Ltd (SunWater) supplies water to customers in rural and regional Queensland. Its major assets include dams, weirs, pump stations, pipelines and distribution channels, and drainage infrastructure servicing irrigators, mines, local governments, industrial users and power stations.

While around 80% of water deliveries are to irrigators, they account for less than one third of total revenue.

SunWater's water supply activities encompass bulk water, network and drainage services.

SunWater has three wholly-owned subsidiaries – Eungella Water Pipeline Pty Ltd, North West Queensland Water Pipeline Pty Ltd and Burnett Water Pty Ltd. Of these, Burnett Water holds bulk water storage assets, while the other two own pipeline assets supplying the mining sector. Both entities hold water access entitlements (WAE).

SunWater's other services include water trading, external consultancies and contracts, and hydro-electric generation.

General scheme descriptions

Many SunWater schemes only provide bulk water services, while others provide network and drainage services to irrigators as well. Some of these schemes also have network assets (eg pipelines) that supply the non-irrigation sector.

Bulk water assets are typically storages such as dams, weirs and offstream storages. These assets are described in, and regulated under, Resource Operations Licenses (ROLs).[1] In some cases, these licenses include pipeline and associated assets (eg pump stations) where WAE are supplemented in streams or groundwater area not supplied by the ponded area of a storage, or releases from it. Hence these assets provide a bulk water service. Such assets include:

- the Redgate Relift system in the Barker Barambah WSS;
- the Callide Diversion Channel in the Callide Valley WSS;
- the Yaramalong Pump Station and Pipeline in the Upper Condamine WSS; and

[1] Or interim Resource Operations Licenses, where applicable.

- the Youlambie Channel in the Three Moon Creek WSS.

In some irrigation districts, network assets (typically main channels) provide a dual function, delivering water to channel segments as well as supplementing streamflows.

The table below provides a summary of the services provided in each scheme.

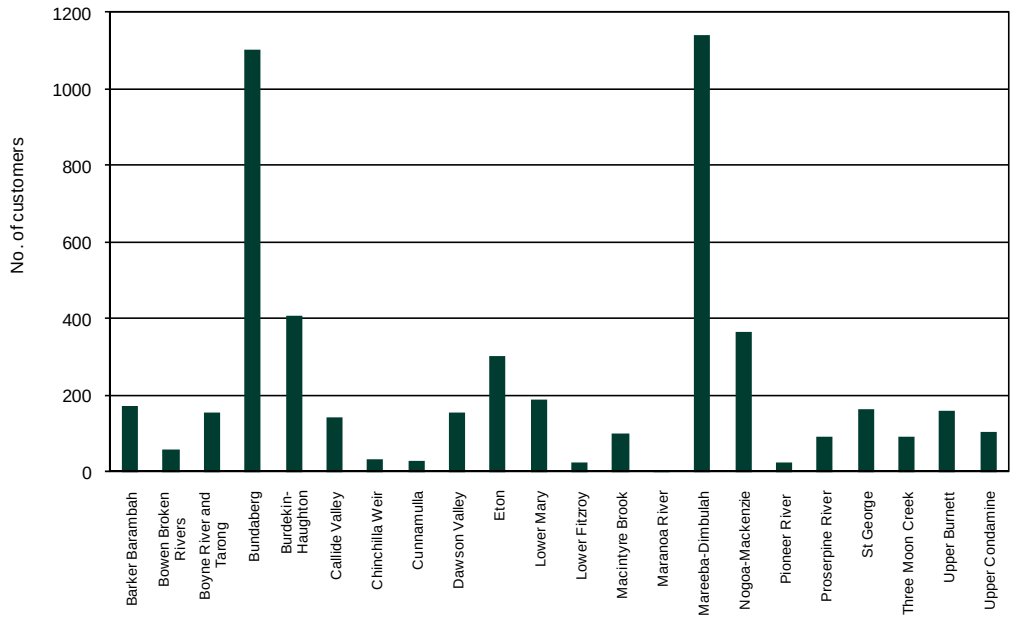
Summary of scheme services.

Scheme	***Bulk water***	***Network Service (Irrigation District)***	***Drainage Service***	***Non-irrigation networks***
Barker Barambah	✓			
Bowen Broken Rivers	✓			Eungella Pipeline (subsidiary) Collinsville Pipeline
Boyne River and Tarong	✓			Tarong Pipeline
Bundaberg	✓	✓		
Burdekin – Haughton	✓	✓	✓	Burdekin-Moranbah Pipeline
Callide Valley	✓			Awoonga-Callide Pipeline
Chinchilla Weir	✓			
Cunnamulla	✓			
Dawson Valley	✓	✓	✓	
Eton	✓	✓		
Lower Mary	✓	✓		
Lower Fitzroy	✓			Stanwell Pipeline
Macintyre Brook	✓			
Maranoa River	✓			
Mareeba-Dimbulah	✓	✓	✓	
Nogoa-Mackenzie	✓	✓	✓	Blackwater Pipeline
Pioneer River	✓			

Scheme	*Bulk water*	*Network Service (Irrigation District)*	*Drainage Service*	*Non-irrigation networks*
Proserpine River	✓			
St George	✓	✓	✓	
Three Moon Creek	✓			
Upper Burnett	✓			
Upper Condamine	✓			

The figure below provides a comparison of customer numbers between schemes, and shows the dominance of Bundaberg and Mareeba-Dimbulah in terms of customer numbers.

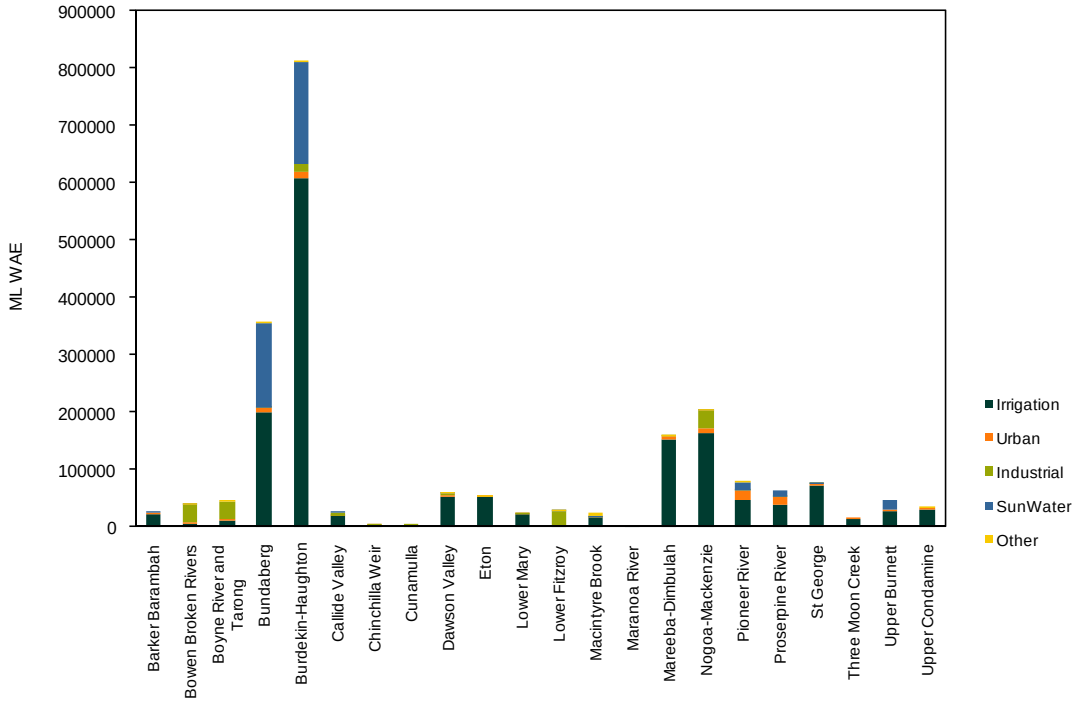
Comparison of No. of customers between water supply schemes



Source: SunWater Annual Report, 2008-09.

Burdekin-Haughton, Bundaberg and Nogoa-Mackenzie are the largest schemes in terms of WAE (refer below).

Amount of WAE supplied in each scheme by sector



Notes: Mareeba-Dimbulah excludes supplies to the Barron Gorge hydroelectric station. Bundaberg and Upper Burnett include WAE held by Burnett Water Pty Ltd.

Source: SunWater Annual Report, 2008-09.

Water sales in each scheme are typically lower than the forecasts adopted for price setting. In some schemes, but not all, this is due to limited water availability over the first three years of the price paths.

Status of water planning activities

The Department of Environment and Resource Management has completed the initial water planning process for most schemes, with Resource Operations Plans (ROPs) and ROLs already established. This means that WAE have been formalised in those schemes, and permanent trading of those entitlements can occur.

In five schemes, Interim Resource Operations Licences (IROLs) are still in place. The table below provides an overview.

Summary of water planning status by scheme

Scheme	*WRP Catchment*	*IROL*	*WRP*	*ROP*	*ROL*
Barker Barambah	Burnett Basin		✓	✓	✓
Bowen Broken Rivers	Burdekin		✓	✓	✓
Boyne River and Tarong	Burnett Basin		✓	✓	✓
Bundaberg	Burnett Basin		✓	✓	✓
Burdekin – Haughton	Burdekin		✓	✓	✓
Callide Valley	Fitzroy Basin	✓	✓		
Chinchilla Weir	Condamine Balonne		✓	✓	✓
Cunnamulla	Warrego / Paroo / Bulloo / Nebine		✓	✓	✓
Dawson Valley	Fitzroy Basin		✓	✓	✓
Eton	Pioneer		✓	✓	✓
Lower Mary	Mary	✓			
Lower Fitzroy	Fitzroy Basin		✓	✓	✓
Macintyre Brook	Border Rivers		✓	✓	✓
Maranoa River	Condamine Balonne		✓	✓	✓
Mareeba-Dimbulah	Barron		✓	✓	✓
Nogoa-Mackenzie	Fitzroy Basin		✓	✓	✓
Pioneer River	Pioneer		✓	✓	✓

Scheme	*WRP Catchment*	*IROL*	*WRP*	*ROP*	*ROL*
Proserpine River	Whitsunday	✓			
St George	Condamine Balonne	✓	✓		
Three Moon Creek	Burnett Basin	✓	✓		
Upper Burnett	Burnett Basin		✓	✓	✓
Upper Condamine	Condamine Balonne		✓	✓	✓

Source: http://www.derm.qld.gov.au/wrp/timetable.html

Some WRPs are currently under review, in accordance with the 10-year planning and review cycle.

Scheme service standards

SunWater operates under a 'decentralised' service regime, whereby customers hold their own WAE and manage supply risks accordingly (eg through trading). SunWater's role under this regime is to supply the owner of that WAE with water, in accordance with the conditions of that WAE and other contractual terms. This means that customers bear the risks of water availability and risks associated with conditions for their WAE generally.

Bulk water service

The bulk water service is provided in all 22 schemes, and involves making water available to a customer's nominated diversion point, in accordance with their WAE. This service is largely constrained by water management regulation, and in particular the ROP and SunWater's ROL.

Generic service aspects and responsibilities – bulk water service

Service Aspect	*Service Provider*	*Customer*	*Comment*
Water availability		✓	Customers hold WAE, and bear the risk of availability.
Water quality		✓	Water is typically provided in its raw state.
Supply continuity	NA	NA	Service providers are typically responsible for scheduling releases of water to meet demands. This often relies on a water ordering regime.
Pump access		✓	Customers own the pump works and are responsible for

			pump location, repair etc.
Diversion rate		✓	A customer's diversion rate is subject to planning and development approvals for their works.
River transmission losses	NA	NA	These are factored into water plans and water sharing rules.

The majority of the value generated by the service relates to the 'creation' of a regulated or supplemented WAE, through construction of water storage. These WAE have different characteristics, which are set out in the table below.

The water resource planning process sets the performance standards for WAE in each scheme.

The Water Allocation Security Objectives (WASOs) for each scheme provide an indication of the relative performance or standard between medium and high priority WAE. The table below provides a summary of these WASOs, where they are being set.

WASOs for water supply schemes

Scheme	***Water Resource Plan***	***High priority***		***Medium priority***	
		Annual	*Monthly*	*Annual*	*Monthly*
Barker Barambah	Burnett Basin	95% (monthly/annual not stated)		85% (monthly/annual not stated)	
Bowen Broken Rivers	Burdekin Basin	95%/90%[a]	98%	65%	85%
Boyne River and Tarong	Burnett Basin	95% (monthly/annual not stated)		73% (monthly/annual not stated)	
Bundaberg	Burnett Basin	95% (monthly/annual not stated)		90% (monthly/annual not stated)	
Burdekin – Haughton	Burdekin Basin	100%	-	90%	95%
Callide Valley	Fitzroy Basin	95-100% [b]		82-88% [b]	
Chinchilla Weir	Condamine Balonne	Note[e]	Note[e]	Note[e]	Note[e]
Cunnamulla	Condamine Balonne	Note[e]	Note[e]	Note[e]	Note[e]
Dawson Valley	Fitzroy Basin	95-100% [b]		82-88%[c] [b]	
Eton	Pioneer Valley	-	95%	-	85%
Lower Mary	Mary Basin	-	95%	-	88%
Lower Fitzroy	Fitzroy Basin	95-100% [b]		82-88% [b]	
Macintyre Brook	Border Rivers	Note[e]	Note[e]	Note[e]	Note[e]
Maranoa River	Condamine Balonne	Note[e]	Note[e]	Note[e]	Note[e]
Mareeba-Dimbulah	Barron	95%	95%	75%	90%

Scheme	***Water Resource Plan***	***High priority***		***Medium priority***	
		Annual	*Monthly*	*Annual*	*Monthly*
Nogoa-Mackenzie	Fitzroy Basin	95-100% [b]		82-88% [b]	
Pioneer River	Pioneer Valley	-	95%	-	85%
Proserpine River	Whitsunday (draft)	99% - 100%	97%-100%	65% - 70%[e]	75% - 80%[e]
St George	Condamine Balonne	Note[e]	Note[e]	Note[e]	Note[e]
Three Moon Creek	Burnett Basin	95% (monthly/annual not stated)		Not specified[d]	
Upper Burnett	Burnett Basin	95% (monthly/annual not stated)		90% (monthly/annual not stated)	
Upper Condamine	Condamine Balonne	Note[e]	Note[e]	Note[e]	Note[e]

a For water allocations in the high A1 priority group in the Bowen Broken Water Supply Scheme, the annual supplemented water sharing index must be at least 95%, while for allocations in the high A2 priority group, the annual supplemented water sharing index must be at least 90%.

b The 'water allocation security performance indicator' for schemes within the Fitzroy Basin region are defined as the median of the simulated monthly reliabilities for water allocations of a particular priority group.

c For as 'Medium A reliability' WAE. A different WASO applies for Medium B WAE.

d Whilst the Water Resource Plan for the Burnett Basin specified a percentage relating to medium priority allocations for the Three Moon Creek water project area below which allocation losses should be minimised, no minimum security level was specified for medium priority allocations in this region.

e The water resource plan does not specify the WASO as a percentage, but instead refers to it as needing to be not less than the percentage immediately before any decision is made in relation to the ROP or amendment/change of a WAE under the ROP.

f Lower WASOs apply to WAE held by the Kelsey Creek and Six Mile Creek water boards.

In recent years, conversion factors have been developed for three schemes that enable a WAE to be changed from one priority to another (Nogoa-Mackenzie, Lower Fitzroy and Burdekin-Haughton).

However, these conversion factors are not without other constraints, in particular constraints about the minimum and maximum amount of high priority and medium priority WAE that can exist in various river zones or in the scheme as whole. Hence, these conversion factors may provide an indication of equivalence between the two products, but should not be interpreted as being definitive across the whole scheme.

Network service

The network service involves diverting water available to a customer under their WAE, and transporting that water to their offtake, via a physical connection to SunWater's infrastructure. SunWater is required to manage distribution losses in that network, and holds a specific WAE for this purpose. This means that a customer's WAE is effectively measured at their network offtake, with SunWater managing losses from the point of river diversion.

Other key aspects to the network service are summarised in the table below.

Generic service aspects and responsibilities – network service

Risk / Service Aspect	*Service Provider*	*Customer*	*Comment*
Water availability		✓	Customers hold WAE, and bear the risk of availability.
Water quality	NA	NA	Water is provided 'as is' at the point of diversion, although the service provider may have obligations in relation to chemical treatments for weeds.
Supply continuity	✓		Service providers have responsibilities in terms of the timing and period of shutdowns for weed control, maintenance etc.
Flow rate	✓		Service providers may be expected to supply in accordance with a defined flow rate or roster during times of peak demand.
Frequency and duration of peak demand periods		✓	The incidence of peak demand periods will often depend on crop diversity, weather etc.
Channel distribution losses	✓		Service providers typically hold a water entitlement to cover these losses in the network.

Service differentials – irrigation and non-irrigation

There is no differentiation in service between irrigation and non-irrigation users. Rather, the service provided to all users is largely determined through their WAE.

Drainage

The drainage service involves removal of water from serviced providers and disposal via a drainage network. This network is normally designed to remove flows from rainfall events. There are not normally requirements about the quality of water accepted (unlike, for example, trade waste).

Drainage services are offered in five of the eight irrigation districts.

Service standards

SunWater has set service standards for 21 of the 22 schemes.[2] These standards largely relate to supply interruptions, and are set under provisions in standard supply contracts.[3]

SunWater reports performance against these standards in its annual report.[4]

Service standards were considered for the current price paths, but the Tier 1 reference group considered the issues were better dealt with in subsequent reviews. Tier 1 also considered the likely quantum of any price-service trade-off as immaterial, and there should be majority customer support for any change.[5]

Prices

The current price paths span from 2006/07 to 2010/11. Prices are set in $2005/06, and are indexed annually at CPI.

The outcomes are documented in various reports on SunWater's website.[6]

Government's rural irrigation pricing policy

The price paths for bulk water, network and drainage services were set in accordance with State Government policy parameters.

Tariff structure

The current tariff structure essentially carries forward that set in 2000, for the original price paths. This is a two part tariff, subject to a minimum charge, for the bulk and network services. These tariffs are applied as follows:

- Part A – which is a fixed charge (or equivalent to an access fee for network services), and applies per ML of WAE; and

- Part B – which is a volumetric charge, applied to each ML taken.

In general, Part A and Part B charges were set to recover a nominated proportion of lower bound costs, with Part A charges typically set to recover around 70% of costs, and Part B charges the residual. There were also some cases where particular costs or revenues were assigned to either tariff. For example:

- any 'above lower bound' revenues, where prices were already achieving above lower bound cost recovery were incorporated into the Part B tariff; and

- increases in drainage charges in the Burdekin-Haughton and Dawson Valley schemes were included in the Part A charge (rather than via an increase to the drainage charge).

Prior to the current price path, separate drainage rates were set on a per hectare basis in four of these districts. In Mareeba-Dimbulah, drainage costs were recovered in the network service charge. However, separate lower bound drainage costs were not identified in the original 2000/01 – 2005/06 price paths. This was remedied for the current price paths, with lower bound

2 There are no standards published for Pioneer Valley WSS.
3 These can be found at http://www.sunwater.com.au/water_schemes_rules-targets.htm.
4 For example, page 31 of the 2008-09 Annual Report.
5 Statewide Irrigation Pricing Working Group. *Tier 1 Report* (April 2006). p62.
6 Refer to http://www.sunwater.com.au/irrigationpricing.htm.

drainage costs determined for each of the five schemes with drainage services, and are recovered under a mix of arrangements, including through (wholly or partially) network service prices.

Price or revenue cap

Three schemes opted for a revenue cap: Bowen Broken Rivers, Cunnamulla Weir and Macintyre Brook.

Key pricing inputs and assumptions

SunWater and the Tier 1 reference group set and published the lower bound costs at a scheme-level, rather than a tariff level. This comprised operating, maintenance and administration costs, electricity, and an asset renewals annuity.

A productivity adjustment was specified for each scheme.

Indec Consulting were engaged to review SunWater's operating costs for efficiency and potential improvements, using the 2003/04 year as a baseline. This review identified potential savings to be realised through continuous improvement, and did not identify "any readily (instantaneously) realisable savings with respect to the 2003/04 year".[7]

A refurbishment program was prepared for each scheme, and reviewed by Gutteridge, Haskins and Davey (GHD) who found them reasonable and appropriate. The Tier 1 reference group accepted this program.

The renewals annuity was calculated over a rolling 30 year period, and adopted the estimated annuity balance at 30 June, 2006 rather than the actual balance.

Cost allocation

The following approach was adopted for cost allocation for the existing price paths:

- corporate head office and regional office costs to assets: allocated proportional to direct operating and maintenance costs (less electricity); and
- between customer sectors from the same asset: based on water entitlements held by each sector, with an adjustment between high and medium priority.

A conversion factor was calculated using hydrologic modelling to establish an equivalent yield for each product.

Drought tariffs

SunWater offered flexible arrangements to apply in the event of severe drought, and drought tariff arrangements were adopted in two schemes, both of which have since been transferred to Seqwater.

Community service obligations (CSO)

A CSO was provided to SunWater to recover the shortfall between the efficient lower bound costs and anticipated revenues from irrigators. For some schemes, this CSO will end over the course of the current price path.

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[7] SunWater Statewide Irrigation Pricing Working Group. Tier 1 Report (April 2006). Appendices, Section 9.3.

However, CSO payments will continue through to the end of the price path (including the final year) for 7 Category 3 schemes. CSOs were also provided in relation to development costs for ROPs. These CSOs were specified for each scheme.[8]

Scheme price paths

Attachment 1 sets out the price paths for each scheme, by tariff group, and compares the lower bound cost reference tariff to the actual price path.

Known scheme-level issues

While there are generic, regulatory issues to consider (eg asset value, cost allocation etc), there are a range of specific issues arising (or identified in) the current price paths:

- treatment of ongoing Category 3 schemes which will not have reached the minimum lower bound cost recovery target by 2010/11;
- the appropriate tariff structure going forward for each service, and in particular the price signals from the fixed and volumetric components, as well as the merits of continuing with the current approach to postage stamp pricing;
- the ongoing form of regulation, and dealing with the three schemes currently under a revenue cap (with unders and overs provisions) in the subsequent pricing period;
- recovery of forthcoming and past spillway upgrade costs;
- assigning costs to the irrigation sector (including conversion factors for high and medium priority); and
- other issues specifically raised by the Tier 1 and Tier 2 customer reference groups.

[8] These CSOs may be included in the amounts in the above table.