



Prices for Recycled Water

Kevin Young
Managing Director

31 March 2006

Recycled Water

▶ Expanding interest due to

- Widespread drought
- Maturity of available water sources
 - source options limited or costly
- Sustainability pressures & responses
 - eg BASIX
- Integrated water resource planning
 - Bringing together all the above pressures in one planning framework

▶ Timely inquiry

- IPART involvement offers scope for a consistent approach to pricing



Quick Snapshot

- ▶ Hunter Water serves 500,000 people in lower Hunter Valley
- ▶ 17 wastewater treatment plants
 - 20,000ML/yr to 20ML/year
 - 2 recycle all effluent
- ▶ Recycle 8.5% of ADWF



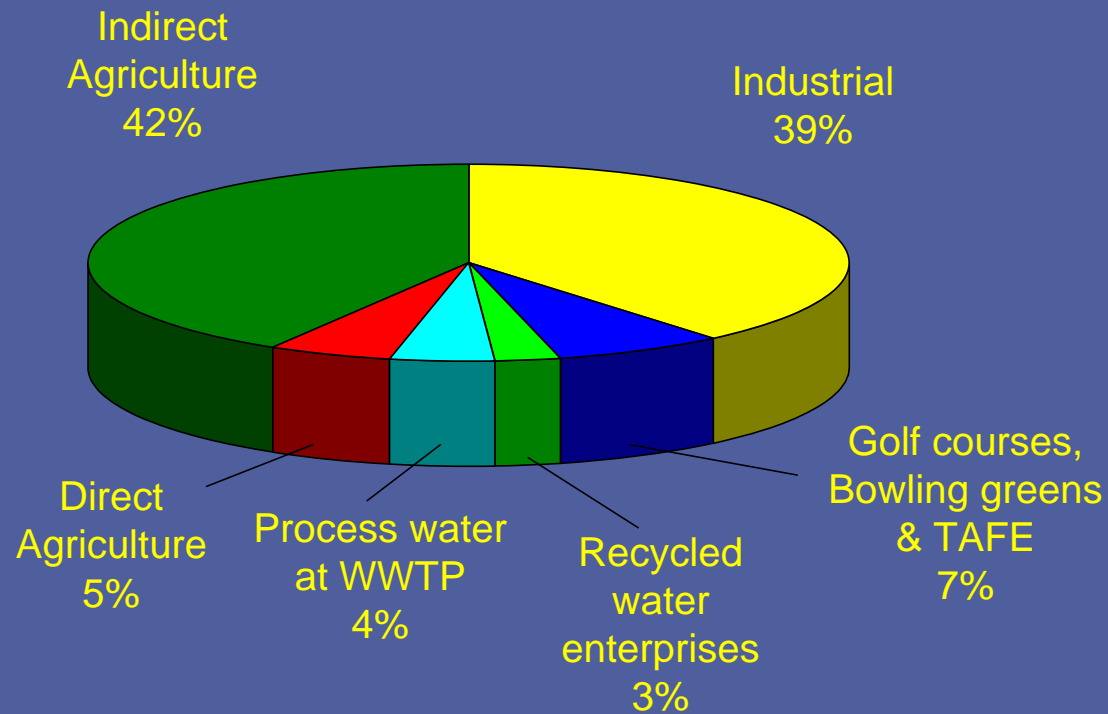
Recycling in the Hunter

- ▶ **Hunter region has significant industrial base**
- ▶ **Major focus has been industrial recycling**
 - Coal mines, washeries, power station
- ▶ **Industrial = good “bang for the \$”**
 - large volumes at low infrastructure cost
 - Mostly provide potable substitution
- ▶ **Smaller opportunities near outlying treatment plants**
 - Mainly irrigation – not potable substitution
 - Some benefits in reducing discharges



Recycled water use

(overall 8.5% of ADWF)



The product

- ▶ **Variety of potential uses, demands, delivery modes & quality options**
- ▶ **Complex links to potable supply, wastewater & stormwater systems**
- ▶ **A range of community perceptions**
- ▶ **Not always best to pursue recycling for recycling's sake**



Reasons for Recycling

▶ Economic

- May be least-cost water source for specific uses
 - Assess as part of system plan (IWRP)
- Recycling should not close off other cost-effective options
 - Rain tanks, demand management, source augmentation

▶ Varying impacts of effluent disposal

- Positive and negative

▶ Reduce demand for potable water

- source & distribution system benefits
- Can be cost-effective “augmentation”
 - Possible external benefits



Pricing should be cost reflective

- ▶ **Incremental capital cost**

- ie cost of new infrastructure for recycled water

plus

- ▶ **Building block OM & A costs as for water & sewer prices**

- operating, maintenance, admin costs + return on & of capital

plus

- ▶ **Adjustment for avoided costs in water & wastewater systems**



Avoided costs

- ▶ **Costs in water & wastewater systems that would otherwise occur without recycling**
 - Capital & operating
- ▶ **Complex inter-relationship with water & wastewater systems**
 - Relationships & costs vary with each opportunity
- ▶ **Avoided costs depend on:**
 - Potable substitution → → Possible savings in water supply investment & operations
 - Backup requirements
 - top up, peak demand etc
 - Reduction in wastewater disposal costs
 - possible avoided cost from recycling that does not substitute potable use



Need to consider case-by-case

Orange County California

- ▶ **Additional potable water is high cost**
 - Supplied through grid of aqueducts
- ▶ **OC has a “designer” range of recycled water**
 - Some higher quality than potable
 - For industrial customers
- ▶ **Significant avoided costs in using recycled water**



Colorado River Aqueduct
390 km with a pump lift of 500m

Case-by-case in the Hunter

- ▶ **Hunter Water has an Integrated Water Resource Plan (IWRP)**
 - Evaluates all water demand & supply options on level footing
- ▶ **Reviewing IWRP over 2006/07**
 - Look at BASIX effect, further retrofit schemes, leakage reduction, **recycling** & other demand mgt etc
- ▶ **Preparing \$0.5m recycling strategy to inform new IWRP**
 - Look for opportunities for dual reticulation, aquifer recharge, industrial use, municipal use etc



Project-based pricing

- ▶ **Nature of emerging market favours project based pricing**
 - Wide variability in product, uses, scale & costs
- ▶ **Reticulated residential schemes are similar in use, product & customers**

But

- ▶ **Too few residential projects to establish an “average” price**
 - **New residential projects are discrete, lumpy increments of varying scale**
 - potential for significantly different average costs



Pricing flexibility

Pricing needs to cater for:

- ▶ **Variability in product, uses, scale & costs**
- ▶ **Mix of new entrants & existing customers**
 - eg developer charges can be used for new entrants but not for existing businesses
- ▶ **Investment risk**
 - Matching investment & pricing to business risk



Recycled water prices should be

▶ Cost reflective

- Cover incremental investment & operating costs and take account of avoided costs

▶ Apply on individual recycling project basis

▶ Be flexible, simple and easily understood

- Be applicable to different customer types
 - From the farmer next door to the large industrial recycler
- Be capable of IPART audit

A pricing methodology best fits these needs



Next steps

- ▶ **Hunter Water looks forward to working with IPART and other stakeholders to develop a recycled water pricing methodology that**
 - Promotes best use of resources and is
 - cost reflective
 - applicable to individual projects
 - sufficiently flexible to cater for new entrants & existing customers and diverse users and uses
 - auditable





caring
for our
community
and the
environment