

DECENTRALISED RECYCLED WATER DECISIONS – UNDERSTANDING THE INFLUENCE OF THE DECISION MAKER AND THE DECISION MAKING FRAMEWORK

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INTRODUCTION

The green market, prolonged water restrictions and a suite of regulatory changes have facilitated direct private investment in water infrastructure, particularly for decentralised recycled water systems. This means that the decision to invest in decentralised recycled water schemes can be made by three quite different groups:

- Public water utilities – to meet government recycled water targets, to manage wastewater discharges, to manage centralised infrastructure constraints, to improve service levels and to increase efficiency
- Local councils – to meet sustainability goals, to improve stormwater quality, to provide non restricted irrigation water
- Private investors – to service developments where water services are not available, to meet ‘green’ market demand, to provide non restricted irrigation water.

This paper compares and contrasts how the public and private sector are making decisions to invest in the decentralised recycled water market and what this means for their future uptake.

PROCESS

Public decisions in the water industry

Water services have been seen as a government responsibility with benefits that are not always reflected in market signals. While public decisions seek to provide value for money, a number of frameworks (such as multi criteria analysis and cost benefit analysis) have been developed to allow the decision maker to consider social and environmental benefits to the whole of society.

However, these common decision making frameworks are far from perfect. They have issues that can affect the robust consideration of all water and wastewater service alternatives and issues that specifically affect decentralised systems. For example, selecting the correct comparison metric in cost effectiveness analysis, setting the project boundaries in all methods, finitely valuing benefits and particularly how you value externalities, is problematic for all options.

Specific issues with the common public decision making processes that particularly bias against decentralised recycled water systems include:

- Including risk and uncertainty biases against less well understood options
- Inherent optimism bias, where planners overestimate benefits and underestimate costs, which favours larger options

- Incorporating the value of flexibility is complex and poorly understood.

Private decisions in the water industry

The provision of direct competition for water services is relatively new. However, the theoretical enablers and barriers for private investment are well studied. Successful private investment in the water industry depends on a stable investment environment (stability, security, predictability), the economic/ commercial viability of the project, appropriate risk allocation, technical strength of the project and capabilities of the proponent. Conversely, international experience shows that political interference in decision making, the low level of cost recovery in the water sector and uncertainty over future government action also limit private investment in the water industry.

In Australia there are three key areas that theoretically should limit private investment in water services:

- Regulation is complex: In NSW a decentralised recycled water system may trigger 6 Acts, be covered by 4 specific guidelines and require the approval or advice of up to 8 authorities.
- Regulatory pricing policies limit viable competition: This includes difficulties in calculating and collecting avoided costs, the low price of water, postage stamp pricing and the regulatory price structures themselves.
- Government policies that distort (for example subsidies or setting recycled water targets) or restrict (for example limiting supply options such as new dams or indirect potable reuse) markets.

RESULTS/ OUTCOMES

In theory, the regulatory and institutional frameworks in Australia should limit private investment in the water sector. By comparison, the broader perspectives incorporated into common public sector decision frameworks should enable investment in decentralised recycled systems where they are sustainable. However, in addition to barriers in the assessment frameworks, recycled water is more frequently being seen as a discretionary good, not an essential public service. This means that recycled water projects are subject to different assessment, risk and cost recovery criteria to the ones public utilities use to assess essential water and wastewater services. This is compounded by the lack of clarity in responsibility for delivering water sensitive urban design and limited understanding on how costs and benefits should be traded off or recovered.

In contrast, despite the theoretical barriers to private investment in the Australian water industry private decentralised recycled water systems are being planned and installed throughout Australia. This may be because the private sector has greater flexibility to accept risk and recover revenue that is currently allowed in the public water utilities.

CONCLUSION

In Australia, the assessment of decentralised recycled water systems is affected by who is making the decision and how they are making the decision in ways that theory and experience elsewhere does not predict. The broad assessment frameworks used by the public sector should enable sustainable alternate service solutions. However, inherent biases in the decision making frameworks, knowledge gaps, unclear responsibility for delivering water sensitive urban design and inflexible risk and cost recovery criteria is potentially limiting the uptake of decentralised recycled water systems by utilities. In contrast, despite the theoretical barriers to private investment embedded in the current regulatory and institutional framework, the private sector is continuing to invest in decentralised recycled water systems.