

MAKING BETTER RECYCLED WATER INVESTMENT DECISIONS

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Over the last 30 years, driven by a confluence of interrelated factors such as drought, subsidies, treated wastewater disposal and sustainability interests, Australia has seen significant developments in water recycling. The drive to improve urban livability and the benefits of retaining greater amounts of water in the landscape will likely result in further schemes being implemented.

We have seldom looked back at these previous investments to see how differently things turned out from what was planned, and how the real costs, benefits and risks were balanced and distributed across different stakeholders. Recognising this gap the Australian Water Recycling Centre of Excellence commissioned the Institute for Sustainable Futures, to investigate the investment decisions associated with recycled water schemes. Drawing on the experiences of eight Australian recycling case studies, a suite of resources have been developed that contemplate the additional risks and uncertainties that are often unforeseen.

A key reflection emerging from the project is that the treatment of risk in recycling needs to expand dramatically. This needs to incorporate a broader range of business risks associated with the decision to invest in recycling, extending well beyond the historical focus around technical issues associated with public and environmental health standards. In addition, the 'stories' illustrate why context matters in every situation, how things always change, and how the practical assessment of success or otherwise goes beyond economics.

The principle project output, an investment assessment guide entitled 'Shifts happen', is focused on a process that allows potential investors to learn from the experiences of others in identifying and managing these broader risks. Six key issues emerge that need to be considered for any recycling scheme:

1. ***Clarify the stakeholders, their roles and responsibilities and control and influence*** - Identify the key players in the life of the project and who may have significant influence or control over the outcome. Understanding how each player's role might change over time also enables risks and uncertainties to be revealed. In addition thinking through which players should be brought on board early may prevent making costly changes to the scheme (e.g. involving operational staff in the design phase so that designs match operational requirements).
2. ***Have clear and common objectives among the direct players involved in implementing the scheme*** - Having identical objectives for each player is unlikely. However, ensuring they are aligned rather than conflicting is essential. Sharing these objectives amongst direct and indirect players is a key ingredient of the success of a project.
3. ***Avoid a mismatch between supply and demand*** - Matching supply and demand can only be determined on assumptions about the future (e.g. population growth, trends in water efficiency, effects of climate change, and implications of energy prices). Therefore, there is always uncertainty and risk that the forecast demand will deviate from actual demand. The mismatch might be the maximum demand and/or rate of demand growth over time. The greater the uncertainty of the assumptions, the higher the risk of deviation, often resulting in

cost implications. A common deviation is a high forecast and low actual demand where mitigation might involve building the scheme in modules over time.

4. **Choose the appropriate level of treatment** - This depends both on what the end-users want and when, and on source water quality. Perceptions of risk are key in setting treatment levels. Inaccurate perceptions often lead proponents and regulators alike to err on the side of caution. The advent of the Australian Guidelines for Water Recycling, and its shift to a risk-based approach, has unintentionally encouraged this cautious approach to treatment, despite the protections offered by end-use control points. Higher levels of treatment are not always better and typically lead to higher cost and energy implications.
5. **Be clear on the approvals and contractual arrangements that affect the scheme** - There are numerous approvals processes relevant to different jurisdictions, arrangements and applications and still some ambiguity around the need for formal and informal approval from multiple agencies involved including gaps in the regulations. In addition, there are many ways to set up schemes. Hence contractual arrangements require careful consideration to ensure clear roles and responsibilities and to avoid conflict when things don't go according to plan. Also, getting the balance of contractual risk right is important to avoid unfair financial bias to individual players in the long term.
6. **Consider the financial arrangements** – With major government recycling grants a thing of the past, considering the full costs and benefits of a scheme is essential but not straightforward. Some costs are direct and fixed but many other costs and benefits can't be monetised and are: indirect and difficult to measure, imprecise, uncertain and variable, contingent on future scenarios and dispersed.

For further reading on “Shifts Happen” and to access the case studies and suite of resources developed visit <http://waterrecyclinginvestment.com>.

Types of risks

Business Risk

Technical
Operations Risk

