

Australian Water Recycling Centre of Excellence



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Securing Australia's water future requires a diversity of water sources to ensure we are prepared for future droughts and changing population patterns. Water recycling has a substantive and important contribution to make in securing our future water supply and improving the health of our waterways.

Ongoing scientific and technical studies are required to maximise this contribution through developing water recycling opportunities that are environmentally, socially and economically sustainable.

The Australian Water Recycling Centre of Excellence (AWRCE) is a new national research program directed toward this opportunity. It will enhance the management and use of water recycling through industry and research partnerships.

The Australian Water Recycling Centre of Excellence is being funded by the Australian Government through its Water for the Future initiative.

The Centre has already commenced work with a national and international consultation process focused on identifying priority research needs. This consultation process is underpinned by a philosophy of research and industry working in partnership to address opportunities of national significance.

Developing the Strategic Research Plan

The Australian Water Recycling Centre of Excellence (AWRCE) Research Advisory Committee is developing a Strategic Research Plan for the Centre of Excellence. To initiate a dialogue with potential industry and research partners, the Research Advisory Committee has produced short discussion papers covering four research themes:

- Theme 1: Technology, efficiency and integration
- Theme 2: Risk management and validation
- Theme 3: Social, institutional and economic challenges
- Theme 4: Sustainability in water recycling.

These papers are drawn from the Research Advisory Committee's knowledge of the water industry, together with input from a wide range of industry and research practitioners.

The discussion papers outline the rationale for the research theme, outline examples of national and international research relevant to the theme, and identify known gaps and potential research topics.

Where to next:

The Centre has developed four discussion papers and is seeking industry and expert feedback on these papers to inform development of the Centre's Strategic Research Plan. The discussion papers can be requested via the Centre's website at www.australianwaterrecycling.com.au or by contacting the Centre at enquiries@australianwaterrecycling.com.au

Submit Your Comments

Please email your organisation's feedback on the Centre's research discussion papers to submissions@australianwaterrecycling.com.au



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Research Themes and Topics

Theme 1: Technology, Efficiency and Integration

This theme has been developed in the knowledge that we already have the technology to produce water of any quality to meet the requirements of a wide range of recycling opportunities. The challenge often faced, however, is how to optimise these technologies to achieve the required quality of water that is fit for purpose.

This theme suggests topics that all relate to improving efficiency and integration with the aim of developing sustainable water recycling solutions.

Suggested research topics include:

- Management of salt and saline effluents in water recycling
- Improved on-line monitoring processes
- Optimisation of existing process technologies and trains
- Optimal integration of source waters, technologies and end uses
- Innovative and novel technologies for water recycling.

Theme 2: Risk Management and Validation

This theme has been developed to further research the assessment and management of risks when reclaimed water is returned to the water cycle. Much of the theme discussion is related to validation of the performance of the technology applied in water recycling schemes.

The theme also identifies that the communication of risk issues relevant to the provision of safe, reliable and affordable reclaimed water are best managed with the appropriate involvement of four key groups of stakeholders - the water professionals, the policy and regulatory decision makers, the independent science researchers, and the consumers.

Suggested research topics include:

- Toxicology and chemistry
- Measurement and assessment of pathogens
- Risk assessment and communication
- Policy and practice.

Theme 3: Social, Institutional and Economic Challenges

Water recycling has assumed a recognised and important role in the portfolio of water management strategies in metropolitan and regional areas. The social, economic and institutional components of water recycling are pivotal to achieving sustainability in Australia.

The theme notes that recent national appraisals of the state of urban water reform, inclusive of water recycling, found that research was deficient in social, institutional and economic factors. The reviews concluded that improved understanding in these research areas is central to increasing the level of recycling application and acceptance.

Suggested research topics include:

- Decision support (institutions and governance)
- Prioritised investment (economics of water recycling)
- Implementation and evaluation (social psychology research into water recycling).

Theme 4: Sustainability in Water Recycling

This theme proposes that by understanding the complexities of water recycling, and using the principles of sustainability as a platform, more effective outcomes for the water sector will be achieved.

Central to this theme is the proposal that water recycling should align with national and international Life Cycle Assessment (LCA) initiatives to help ensure sustainable water recycling systems. The theme also suggests research topics that are focussed on the adoption of technologies to achieve more effective and yet sustainable water recycling initiatives.

Suggested research topics include:

- Alignment of water recycling with national and international Life Cycle Assessment initiatives
- Management of salts and recovery of nutrients
- Expanded use of low energy and energy recovery systems
- Reduction and reuse of chemicals and consumables in water recycling.