

Co-designing a resilient water and energy toolbox for Aboriginal and Torres Strait Islander communities.

Project Summary

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Climate Action Beacon

A Cities Research Institute project

Project Overview



Project purpose

There is an urgent need for transformation of supply, use and management of water and energy in non-urban Aboriginal and Torres Strait Islander (herein Indigenous) communities in Australia.

Such a transformation will build social, economic and environmental resilience of the infrastructure and management to contribute to healthy and productive Indigenous communities.

range of factors including high water use, poor coordination of maintenance, low energy and water literacy, poor economies of scale, high turnover of staff and exclusion of community input into decision making has led to high cost, inefficient systems that frequently do not meet drinking water quality or reliability standards (Jackson 2019). In 2020–21, government payments to subsidise energy costs in off-grid communities were \$66M alone in Queensland (Queensland Government, 2021). Addressing these complex issues requires sustainable governance and collaboration between managers and Indigenous communities to identify appropriate solutions to water security and quality issues. Further, as investment in fast, reliable telecommunications infrastructure and use of smart phones grows in remote Indigenous Australia (Featherstone, 2020; Watson, 2015) there is significant opportunity to support community-based, culturally appropriate engagement with digital tools for sustainable remote water and energy management. To date this has not been researched in Australia due to uncertainty

in uptake in more communities, however recent research from Beal et al (2019) clearly shows this is a feasible, yet unexplored area.

The aim is to collaboratively create a toolbox of innovative, community-based approaches for water and energy management in First Nations communities. This project will combine digital and cultural approaches to create a novel set of tested and evaluated tools for engaging both community and service providers in transforming water and energy use practises in discrete Indigenous communities.

The key output will be an **empirically** tested and user-friendly water-energy toolbox tailored to reduce the currently extreme cost of supplying essential services to remote communities. Application of these outputs will significantly reduce demand on local water sources and dieselgenerated energy use while creating a skill base for local employment opportunities.

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Project objectives

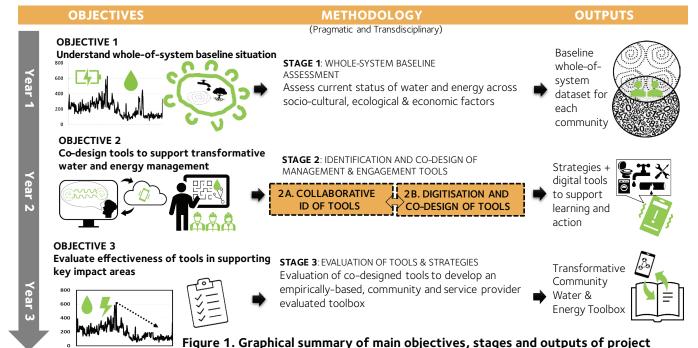
The main objectives are:

- Assess and understand whole-of-system baseline water and energy systems in three states/territories.
- Co-design new tools with communities and key actors to support transformative water and energy management.
- Trial, monitor and evaluate, through participatory processes, the impact and effectiveness of the codesigned tools.

Project approach

The project will cover three states/territories (Northern Territory, Queensland and Western Australia) in remote Australia and will focus on developing innovative, community-based approaches for water and energy management. Four communities will be selected (1 in NT, 2 in QLD and 1 WA) with help of key stakeholders.





Project name and logo

he name 'iKnow, weKnow' represents the combination of Indigenous knowledge, technical water and energy knowledge and digital technologies, together with the concept of inclusion and moving from a focus on individual behaviours to collective action to address water and energy security in a climate changed future.

The logo was created by <u>Indigenous artist Chad Briggs</u> who designed the logo to incorporate Aboriginal and Torres Strait Islander patterns and symbols representing water and energy.

Industry Partners



Centre for Appropriate Technology

cfat.org.au

Ergon Energy

ergon.com.au

Indigenous Technology

indigenoustechnology.com.au

Murdoch University

murdoch.edu.au

Northern Territory Government

nt.gov.au

PowerWater

powerwater.com.au

TSRA

tsra.gov.au

Water Corporation

watercorporation.com.au

Project Benefits

Example of benefit

Previous project saw 40% less water and 25% less energy from community engagement and smart meters.

This project will build on these savings while ensuring sufficient use for healthy living practices (drinking, washing, heating and cooling) are maintained and encouraged.

Example of benefit-

Water and energy officers as well as Environmental Health Workers will be trained in the fundamentals of data use for understanding consumption and community engagement.

This will add capacity in community from a service delivery aspect too.



less water and om community smart meters.

Improved access to

Community water management

> iKnow, weKnow

ARC linkage project

safe water

- Example of benefit

Co-development of place-based community water safety and security planning.

This project will also increase knowledge of safe water choices and reduce risk of drinking contaminated water sources.

Enhanced community well being and health

-Example of benefit

With reduced water and energy use, avoided or deferred water and energy infrastructure upgrades will occur.

This will reduce future capital spending and divert funds to other community needs.

Infrastructural upgrades



Example of benefit

Currently underused water and energy use data will be used to communicate daily usage and alert both service provider and householder of high use.

Key community members will directly be involved designing a water and energy App with service providers for efficient and sustainable use of water and energy. Developing connections with service providers

Indigenous knowledge sharing

Example of benefit

Existing local and Traditional knowledge and practices will improve community buy-in and greater adoption of socio-culturally appropriate and placed-based water and energy efficiency practices.

