

Renewable Organics Network

Barwon Water's Australian-first Renewable Organics Network (RON) is a cogeneration facility supplying renewable electricity to Barwon Water's Colac Water Reclamation Plant, and renewable hot water to several industrial customers in Colac. The RON initiatives provide renewable energy, reduced waste and carbon emissions. It demonstrates how strong and dynamic strategic partnerships with businesses, councils and agencies can play a critical role in the success of circular economy projects, by leveraging the strengths and value of all partners to contribute to regional prosperity.

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Background

Barwon Water is moving from a utility service provider to an enabler of regional prosperity. It has set challenging sustainability targets that will support the region's transition to a circular economy. Barwon Water is aiming to achieve zero waste, zero emissions and 100% renewable electricity use as a part of its Strategy 2030 goals.

The first stage of cogeneration installation, taking the entire Colac Water Reclamation Plant off the grid, is due to be completed by early 2021. Total cost for the project is \$39.79 million (Colac Water Reclamation plant upgrade \$30m, RON \$9.79m) funded by Barwon Water's capital works improvement program, outlined in its 2018 Price Submission.

Key to the success of the RON is Barwon Water's strategic partnership with two Colac-based major global export manufacturing businesses, Australian Lamb Company (ALC) and Bulla Dairy Foods. Strong and trusted relationships with industry and councils are a significant enabler of the RON initiatives.

The partnerships that underpin the RON require commitment and clarity to ensure everyone understands their role, responsibility and investment from the start. It was important to involve prospective partners throughout the business case development and provide clear, tailored updates for each party involved.

As both projects have evolved, it has been important to allow the partnership to adapt accordingly. The more partners involved, the more flexibility is required to ensure mutual benefits continue to be created and maintained throughout the process.

Benefits to the utility, and to climate-related outcomes

The project leverages existing water and sewerage infrastructure to convert high-strength commercial and trade waste organics into dispatchable renewable energy, hot water for commercial operations and value add by-products, such as soil enhancers for agricultural purposes.

In doing so it is diverting waste from lower order disposal routes, creating clean renewable energy, reducing costs, generating jobs and driving economic growth in the region. Measurable benefits include:

- The net production of 5.5 gigawatt hours of renewable electricity each year. Approximately 50% of this renewable electricity will be used "behind-the-meter" to take the Colac Water Reclamation Plant completely off grid electricity, while the remaining renewable electricity generated will be exported into the grid
- Renewable hot water will be generated and supplied to ALC via an innovative hot water pipeline, which offsets ALC's natural gas consumption from the grid by 21.4 terajoules each year – equivalent to the gas usage of 350 households
- The generation of this dispatchable renewable energy in the form of hot water and electricity results in carbon emissions being reduced by 6,300 tonnes each year.

Broader benefits include

- For business, the Colac RON creates a circular economy, where waste production generates savings on electricity and heating bills and reduces their carbon emissions
- For Barwon Water customers, the energy created can be used to power (and reduce intensive energy costs for) the Colac Water Reclamation Plant, keeping bills affordable
- Addressing climate change by reducing greenhouse gas emissions
- Enabling sustainable waste management, and reduced waste / energy costs for customers
- Helping Barwon Water achieve its commitment to zero waste/ zero emissions by 2030.

A second strategic partnership between Barwon Water and six municipal councils is exploring options for a broader 'Regional RON'. This partnership is considering the viability of a dedicated processing facility to convert organic matter from regional municipal kerbside collection and biosolids generated through the wastewater treatment process into renewable energy, heat, biogas and soil enhancers. The total area potentially serviced by this RON covers a population of approximately 600,000 people.