Regional Renewable Organics Network at Black Rock

About a third of the waste, we throw out at home is organic material, mainly food scraps, that create greenhouse gases when sent to landfill. Barwon Water is planning a world leading Regional Renewable Organics Network (RRON) facility at the Black Rock Water Reclamation Plant in Connewarre.

A solution to our waste problem

The planned facility will take household food and garden waste, local commercial and industrial organic waste and biosolids (organic materials from wastewater treatment) and safely convert it into products (biochar and digestate) that enrich compost, soil and capture carbon for high value use in agribusiness and sustainable manufacturing, and at the same time produce renewable energy. In doing so, volumes of organic and green waste will be diverted away from landfill, reducing emissions and helping to reverse the cycle of burning fossil fuels. We are partnering with local councils (Borough of Queenscliffe, City of Greater Geelong, Golden Plains Shire and Surf Coast Shire) along the way to align with the state-wide Circular Economy Initiatives and Recycling Victoria Policy. The RRON will deliver significant environmental, economic and community benefits to the region.

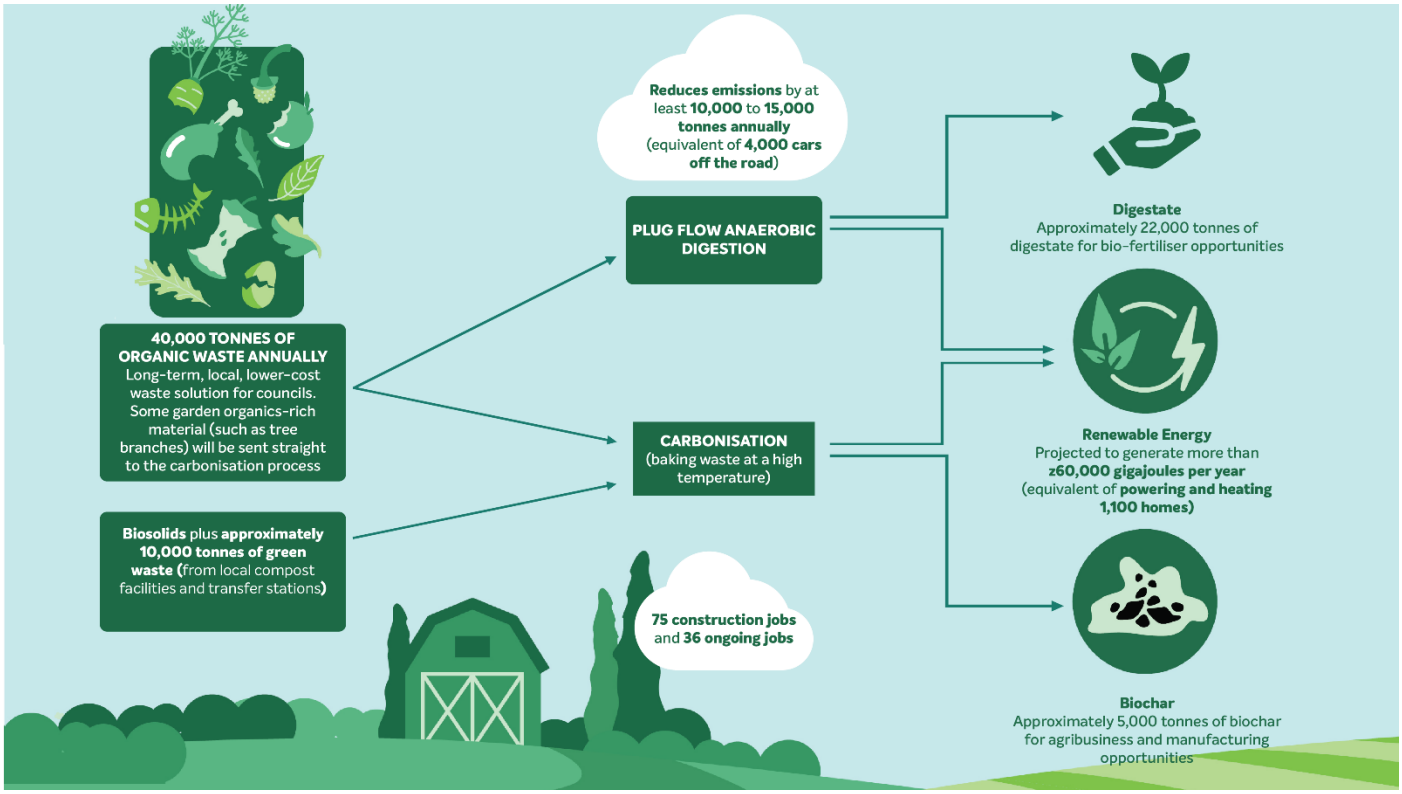
What will the RRON facility look like?

The RRON facility (see left) will be built on a vacant area of land near Barwon Water's existing Black Rock Water Reclamation Plant, which treats greater Geelong's wastewater and produces Class A and C recycled water. The RRON facility will be compact with most equipment located within the main building. The digester tank, liquid waste receival area, biofilter (which filters air from the building), digestate aeration areas and the office will be located outside the main building. The height of the building is designed to provide enough clearance for operations, including trucks to safely drop off organic waste within the building. The facility will stand at 13.13 metres high (its tallest point, ~ 3 metres lower than the existing buildings at the site), will be ~ 100 metres long and ~ 45 metres wide – taking up a total of ~ 4,500 square metres or roughly 0.5% of the total Black Rock site.



How it works

The facility will take household organic waste (such as food scraps and garden waste), organic commercial and industrial waste, (like fats and oils), large and oversized green waste (such as branches and logs) and organic materials from wastewater treatment plants (biosolids). The facility will operate across two different processes - anaerobic digestion and carbonisation.



About biochar

Biochar is a carbon rich substance which, due to its chemical and physical structure, can be extremely beneficial for soil health and can assist with plant growth while sequestering carbon for hundreds of years. The operating temperature of the carbonisation vessel also helps manage contaminants the waste may have contained. In years to come, it could also be used in applications as broad as carbon fibre materials, sustainable batteries and green construction. Biochar is black and granular, also lightweight and highly porous.

About digestate

When the food and garden organics go through the plug flow anaerobic digester, it produces a nutrient rich product called digestate. Digestate is a nutrient rich compost- like mixture that can be primarily used as a bio-fertiliser. It also improves plant growth and soil quality, reducing the need for traditional fertilisers. The raw digestate will be mechanically dewatered before going through an enclosed aeration process where air will be mechanically forced through the digestate. This process will reduce moisture in the product and significantly reduce odour, before the product is sent out for use.

Next steps

We are committed to listening and learning from our community. Below is a table outlining the project's next steps:

Mid-2023 to mid-2024	We will listen to and learn from the community as we share the proposed functional design of the facility and outputs of the technical assessments. We will apply to the Environment Protection Authority and Department of Transport and Planning to seek approvals to proceed with the project.
2025	If approved, construction of the RRON facility will commence.
2026	Commissioning and commencement of the operation of the facility.

Stay informed

Stay up to date by registering for updates on our project website: yoursay.barwonwater.vic.gov.au/rron Should you have any questions, please get in contact with us at projects@barwonwater.vic.gov.au or 1300 656 007.