

Meeting Attendees: YADCA Management Committee &
Unity Water Executive, Sustainability and Stakeholder Engagement Team

Development Application lodged 25.5.2026: MCU26/0121 – Sewerage Treatment, Utility Installation
Bioresource Recovery Facility - 10 Focus Lane YANDINA;

Assessment Level: Impact – a Material Change of Use is triggered under the *Planning Act 2016* as the proposed BRF is inconsistent with the current site designation of Community Facility Zone.

Pre-Lodgement meetings: in January 2026 Unity Water met with SARA (State Assessment & Referral Agency) and SCRC (Sunshine Coast Regional Council) prior to the lodgement of the above DA.

On 5th June, YADCA met with the Unity Water team for a briefing and consultation on the proposed Bioresource Recovery Facility (BRF). The site, owned by Unity Water, is located on the western side of the North Maroochy River and, historically, was the location of Yandina's sewage treatment plant.

Currently, the site functions as a sewerage pump station sending sewage, which used to be treated on-site, to the main Nambour sewage treatment plant for processing. Since the plant was decommissioned, the surrounding land has been developed into a major industrial estate. The site is now accessed through this industrial estate via the Paulger Flat Road exit from the roundabout on the Yandina-Coolum Road.

Bounded by the Maroochy River, the site is identified as being subject to high flood risk from riverine flooding to a depth of 8.4m. This has been considered in detail in the DA, with a proposal to build the site up over 1m to an adopted minimum platform and building floor levels above 8.9m, making it flood resilient to year 2100 flood levels.

The meeting began with the Unitywater team providing a detailed explanation of the carbonization process and the proposed plant layout to be constructed on the site, which is currently out for tender. Carbonization is the process in which the sludge, known as "biosolids", a byproduct of the wastewater treatment process, is dewatered, then trucked to the BRF to convert it at high temperatures into a dry, odourless, free-flowing, high-value material known as "Biochar". It is anticipated that 70,000 tonnes of biosolids will produce 12,000 tonnes of biochar p/a. Biochar is basically elemental carbon in a form (similar to charcoal) that makes it a very effective active material in a range of agricultural and industrial applications from soil improvement and water purification to batteries and fuel cells.

At the moment, unprocessed biosolids from wastewater treatment plants operated by Unitywater is trucked to agricultural acreage west of Brisbane, where it is spread on fields as a soil improver and fertilizer. However, for several reasons, which is not the best way of using this resource. The biosolids has a high moisture content, and not all of the carbon content is in a form that can be utilized in soil enhancement and ends up as greenhouse gas emissions. The Unity Water plan is to truck the biosolids to the Yandina BRF where it will be turned into a superior saleable product, the revenue from which will ultimately pay for the new facility.

The carbonization of biomass is a well-established process employed around the world to deal with an unavoidable product of human civilization. In this process the water content of the biomass is reduced and the solid material dried to the point at which it is free-flowing and can be moved on a conveyor belt. In that form the biomass is passed through a chamber in which it is heated in a low oxygen atmosphere to a temperature over 650°C to 850°C. In that low oxygen environment, the organic matter releases a combustible gases known as "Syngas" which through a closed-loop circular system is burned to generate most of the heat required in the process. Notably, this continuous process of

generation and burning of syngas means there is no storage on site as there is no excess syngas produced. The product of the pyrolysis process is nearly pure carbon in a form that has a very large surface area per unit of volume. That active surface enhances the contribution the carbon can make to the improvement of soil fertility and performance in industrial applications.

The second part of the meeting provided the opportunity for YADCA to clarify the following initial concerns and proposed mitigation of adverse effects the development may have on the Yandina community and wider environment.

1. Risk Management - The first concern is the potential effect of truckloads of regulated waste driving around the Yandina outskirts. The load is enclosed and covered by a tarpaulin and there is a responsibility on Unitywater to prevent spillages. Twelve sewage treatment plants between Burpengary and Noosa will supply the biosolids to the BRF in Yandina. Most will access the plant via the Bruce Highway, but material will also come from the Coolum and Fisherman Road Wastewater Treatment Plants. This is a regulated activity by the Department of Environment, Tourism, Science, and Innovation and the Unitywater team confirmed that on the basis of the long experience of trucking the biosolids to regional areas, that spillages are low risk and have not proved to be a problem previously.

The second concern is Unity Water's ability to quickly manage and repair a gas leak, especially as the site will be unmanned at night and over weekends. Syngas ($\text{CO}_2/\text{CO}/\text{H}_2$) is highly toxic. What mechanisms will be in place to contain the syngas, and will the staff be adequately trained to handle such a situation? The Unitywater team said that there will be a gas detection system that will monitor for any leakages. The response would come from staff at Unitywater's Service Centre at Service Road, Maroochydore, which is manned around the clock. A roster of on-call staff would also provide for faster response times based on their home locations and immediate response capacity.

2. Road Network Impacts - Truck frequency to the Yandina site is expected to be 13 trucks per day = 26 trips in and out of the plant (about one truck per hour between 9.00 am and 3.00pm delivering biosolids) and 1 to 3 trucks every 3 months to load and transport the stored biochar is out to regional distribution centres. Unitywater advised that there should be minimal impacts from these trucks.

3. Odour and Vibrational Nuisance - The next concern was smell emission when the trucks tip their load into the BRF. The Unitywater team explained that risk will be minimized because the load is dumped under cover into a below-ground hopper that is held at a negative pressure. Air will be drawn into the facility rather than dispersing into the surroundings. The hopper will be sealed as soon as the truck has discharged its load.

The biomass in the hopper is fed into the drying processes which will be carried out in a sealed building which is maintained at negative pressure. Air pumped out of the building to maintain the negative pressure will be passed through filters and scrubbers to remove any smells and toxins.

Concern was also raised as to the atmospheric vibration and the airborne transmission of acoustic energy and low frequency pulsations generated by the 24/7 equipment operations and its impact on the health and wellbeing of local people, animals, and wildlife. It was confirmed that the building structures and slow movement of the fully enclosed conveyer belt system would mitigate unreasonable levels of impact.

4. River Contamination - Zero discharge will enter the river. Any leachate will be piped [with Yandina's sewage] to the Nambour Wastewater Treatment Plant using the existing onsite pumping station and pipeline.

5. Environmental Impact of end product - The output from this process is a coarse, black, odourless, free flowing material made up of grains of elemental carbon around 6mm. Biochar is a high value material with a wide range of uses. Current market value for the bulk material is \$0.80-\$3.00/ kg.

This 25L bag of biochar is offered for sale for \$73.55



6. Tenure and expansion - The BRF will be designed to meet current demand and have an expectant life of 25 years. Any future expansion would be restricted by bunker capacity and would remain within the footprint of the plant.
7. Next step - community consultation in the form of pop-ups sessions in the local area and speaking opportunities ie YADCA forum.

The YADCA Checklist:

- Traffic impacts from trucks with biomass travelling from the 12 sewage treatment plants to the BRF and back to their base

We anticipate there will be minimal impacts from trucks arriving and departing from the facility with approximately 1-2 trucks transporting biosolids per hour. The vast majority of vehicle routes will be via the Bruce Highway arriving directly at the industrial precinct.

- Action plan for dealing with accidental spillage of biomass during haulage

The transport of biosolids is a regulated activity and Unitywater is required to maintain a plan for the cleanup of any spillage that might occur during its transport.

- The effectiveness of the sealed negative pressure system in preventing odours or toxins escaping into the atmosphere when the biomass is off loaded

Modelling indicates the system will be extremely effective at preventing odours and emissions escaping into the atmosphere during the offload of biosolids.

- Regularity of monitoring nuisance impacts on local community [re 24-hour operational atmospheric vibration transmission and odours impacting neighbouring residents, the Yandina Primary School, Spirit House Restaurant and food processing industries in adjacent low Impact industrial estate [ie. Ginger Factory, Nut Works, Coffee Roasters]

Unitywater has a 24-hour contact line in the event of any unexpected impacts and the facility will be staffed during business hours to monitor and manage any impacts. Unitywater will be responsive to ensure customers are not affected by this facility.

- Confirmation that no waste water from the plant will find its way to the Maroochy River System

The facility is not connected to the Maroochy River system and no discharging to the river will occur.

- The effectiveness of the monitoring systems to detect and quickly respond to leakages from the pyrolysis process.

Unitywater is employing the same technology that monitors our treatment plants to ensure we can detect and respond to any issues at the facility quickly with our 24/7 crews.

- The mechanisms to prevent highly toxic syngas (CO₂/CO/H₂) escaping if there is a leak or breakdown.

Any syngas generated by the facility is quickly oxidized in the closed-loop carbonization process. In the event of a breakdown there will be no syngas produced and no risk of it as escaping as it is not stored on site.

- Quality and ongoing maintenance of environmental restoration and landscaping following construction of the BRF.

Following the construction of the site Unitywater will restore the surrounding areas to preconstruction quality at a minimum.

- Height of the silos, chimneys and screening meet code provisions and adequately protect scenic amenity.

The tallest structure at the facility is comparable in height to existing structures on Industrial Place.