Nelson to expand landfill waste-to-energy project

Eamon Rood, Energy News
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Nelson City Council is looking to expand waste-to-energy capabilities at York Valley landfill to include electricity generation.

The Nelson Tasman Regional Landfill Business Unit (NTRLBU) opened a registration of interest process yesterday for commissioning and operating an electricity plant as part of the council's Waste-to-Watts project.

The ROI on the Government's GETS tender website mentions two roughly 500-kilowatt biogas engines with capacity to add a third. There's also supply, installation, testing and commissioning of a 750 cubic-metre-per-hour gas pretreatment system.

The request also covers mechanical and electrical infrastructure, control systems, SCADA integration and balance-of-plant components.

"NTRLBU is seeking a supplier to partner with us in delivering an innovative and technically challenging project using proven, industry-leading technology," the ROI document says.

"The successful supplier will play a central role in the design integration, delivery and commissioning of the landfill gas-to-energy facility that will provide long-term benefits to both the environment and the local community."

York Valley

York Valley is the region's primary municipal landfill and is managed by the NTRLBU on behalf of Nelson City Council and Tasman District Council.

Since 2005, landfill gas captured there has been transported approximately 2.5 kilometres to Nelson Hospital, where it's used for heating, hot water and steam production.

A 2-megawatt boiler at the hospital produces more than 60 per cent of the hospital's thermal energy demand for heating, hot water and steam. That substantially displaced the hospital's coal use and reduced its carbon footprint by 3300 tonnes every year.

The project was originally part of a three-way partnership formed between Nelson City Council, Nelson Marlborough District Health Board and Pioneer Energy, which owned and operated the gas treatment and delivery system and the boiler at the hospital.

Expansion

Over the past several years, the NTRLBU has invested heavily in expanding and improving gas collection infrastructure at York Valley, including additional extraction wells, piping networks and gas management systems.

In 2022, it purchased the landfill gas management contract and associated infrastructure from Pioneer.

The NTRLBU says that removed key constraints on future gas projects and positioned it to pursue opportunities to reduce emissions and create value from landfill gas.

"These investments have significantly improved gas capture rates, reduced emissions and created opportunities for beneficial reuse of the gas resource," the ROI says.

Over the past two years, the NTRLBU has installed a landfill gas-to-energy engine at Eves Valley Landfill, the region's closed landfill.

That served as a trial and proof-of-concept for the Waste-to-Watts initiative at York Valley and included upgrades to the site's electrical network and existing services.

The engine is now operational and generating electricity from captured gas, with power exported to the grid. The long-term objective is to allow the York Valley site to use its own renewable energy generation, improving self-sufficiency while reducing emissions.

"This project forms an important part of NTRLBU's broader strategy to maximise environmental outcomes, improve energy resilience, reduce emissions and create long-term value for the Nelson Tasman community from an energy resource that would otherwise be wasted," the NTRLBU says.

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