

# Alternative capabilities

Ecowaste Industries Ltd. expands its recycling solutions for C&D waste with a wood processing line from HAAS Recycling Systems.

HALEY RISCHAR



Photos courtesy of haas

For nearly 50 years, Canada-based [Ecowaste Industries Ltd.](#) has been servicing its community by providing diversion and recycling solutions for construction and demolition (C&D) waste.

In an effort to more closely align the company's services with its mission to recycle, repurpose and sustain the products it manages, Ecowaste invested in a multi-million-dollar wood processing system in 2019 to better recycle waste wood streams into a high-quality biomass product that can be used for alternative fuels.

"In the past, we knew that we would be interested in getting into the wood business, and at the time, we had an opportunity to buy a [company] that would give us a pretty good reach into the wood recycling industry," says Christian Dietrich, general manager for Ecowaste's waste management division.

At the end of 2018, Ecowaste acquired the operating assets and facilities of Urban Wood Recycling and Smithers Enterprises, both based in Vancouver. Since the start of 2019, Ecowaste has been accepting former Urban and Smithers customers at its Ecowaste Landfill in Richmond, British Columbia.

To facilitate the wood processing needs of Ecowaste's broadened customer network, the company began collaborating with [Van Dyk Recycling Solutions](#), Norwalk, Connecticut, to purchase new equipment.

“We obviously needed a good long-term system to be able to process the wood through, so we went to Van Dyk and said, ‘Hey, can you help us find some equipment to start the process and make relationships with the biomass buyers and users,’” says Dietrich.



## THE SYSTEM

Following a proposal by a Van Dyk consultant based in Holland, Ecowaste ultimately decided to purchase a complete wood processing line by [HAAS Recycling Systems](#), Dreisbach, Germany.

“We took a trip to look at a couple of HAAS’ sites in Germany and Holland, and then completed the final design on all the components that we felt were needed,” says Dietrich. “We then went back and did another inspection of the equipment before it shipped last summer.” The parts for the equipment were delivered in August 2019 and the system has been fully operational since October 2019.

Using a highly automated system, the wood processing line is capable of processing roughly 100,000 tons of material per year.

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“The system is designed to work long hours with minimum maintenance and high availability,” says Sascha Kloft, managing director for HAAS.

According to Ecowaste, the wood processing system first starts with the shredding of inbound, clean wood, which is done by a HAAS Tryon 2000-E 2.0 shredder. The material then heads to an overbelt magnet that separates the ferrous metals before it is fed into a HAAS Arthos 1600-E hammermill. During this step, the wood fraction is further reduced in size, liberating smaller metal pieces through two or more ferrous magnets and a nonferrous magnet.

“The versatile Tyron pre-shredder and the Arthos hammermill with its ‘ballistic chute’ protection system allow the system to process all types of waste and biomass, even if bigger metal parts or stones are within the infeed product,” says Kloft. “This gives the advantage of allowing many different waste streams to be processed with one line.”

Next, a downstream neodym overband magnet separates the exposed ferrous parts, followed by an eddy current separator that sorts out nonferrous metals. The HPS 125 flat screen separates the material into four fraction sizes:

- Fraction 1 is approximately 0-10 mm
- Fraction 2 is approximately 10-25 mm
- Fraction 3 is approximately 25-80 mm
- Fraction 4 is more than 80 mm

Additional screening and sorting processes ensure the correct particle size for the end consumer, and all light plastics are removed by using an air separator.

“We’ve been running for 10 months now, and the system is pretty slick,” says Dietrich.

Dietrich also says that any fears he initially had with buying equipment outside of North America have been mitigated by Van Dyk’s handling of maintenance issues.

“Van Dyk has done a good job supplying or storing a lot of spare parts in Connecticut for this line, so, I can get something within a day or two if I really need to,” he says.



## PRODUCING BIOMASS

Ecowaste’s clean wood output is sold as biomass fuel to customers located in Canada’s lower mainland near Vancouver, with one customer in the British Columbia interior.

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Included in the company's biomass customer base is a paper producer and recycler in New Westminster, Canada. According to Dietrich, the company burns the biomass to power their dryers.

"In paper manufacturing, drying the paper can be quite expensive if they don't use biomass," he says.

In addition to Ecowaste's biomass ventures, the company plans to pursue the building of a C&D materials recovery facility (MRF) in the coming years.

"Historically, we've recycled roughly 20 percent of what we handle—mostly concrete, a bit of wood and some green waste, materials like that," Dietrich says. "We made the decision a few years ago to build a large C&D MRF; so, instead of taking 80 percent and burying it, [what] we plan to do is basically flip our recycling rate."

Ecowaste is currently in the permitting process for the construction of the C&D MRF, which would process approximately 250,000 tons of mixed material yearly. The wood processing line Ecowaste recently purchased from HAAS marks the beginnings of this part of the business.

Dietrich says, "The intention behind the [wood processing] system we bought last year was for us to get into the biomass business before we built the big MRF. So, this is kind of us dipping our toes into the business of biomass sales."

Once this part of the business is fully operational, Dietrich says they will be able to efficiently pull clean wood out of their incoming stream, along with plastics and paper, to be further recycled or used as alternative fuels.

"There's a tremendous amount of wood in the mixed C&D waste stream. Somewhere between 45-60 percent of the material in the C&D stream is wood," he says. "So, if it comes into our site and it's mixed with all other types of construction materials, like plastic, insulation, carpets and roofing materials, we can't really do much with it today, but the big MRF will be able to separate it all into different streams resulting in 70-80 percent landfill diversion. We plan to keep the HAAS line separate in the future so customers who take the time to source separate their wood will receive a lower disposal fee than if it was mixed with other C&D materials."

Dietrich says Ecowaste is hoping to finalize the design of the C&D MRF by next summer, with the facility expected to be fully operational by the end of 2022.