

# Turning protein waste into next-generation biofuel

West Coast Reduction has become a key biofuel feedstock supplier to some of the world's largest energy producers

**T**he same process used to make soup stock is helping West Coast Reduction Ltd. cut the carbon footprint of fossil fuels.

The Vancouver-based company primarily focuses on rendering: taking leftover meat and fish products from farms, slaughterhouses, grocery stores and restaurants that would otherwise become waste or compost, and recycling certain components for use in animal feed and, more recently, alternative fuel.

"If you've ever made chicken stock, that's basically what we do; it's a simple process with no chemicals, just heat," says Jared Girman, the company's director of government relations and strategic initiatives.

He describes the company's plants as "very large kitchens. We heat the material and remove the water — the same as if you boiled down your leftover chicken bones to make soup stock — and then we're left with two products; a dry protein meal and fats and oils."

The protein meal is used in pet and animal feed, while the fats and oils — known as lipids or tallow — are sold to companies in the oil and gas and chemical industries. Traditionally, the ingredients would be used to make products like soap and cosmetics. However, in recent years, Mr. Girman says there's been a "dramatic shift" to use the fats and oils as biofuel feedstock.

The tallow is co-processed alongside crude oil to produce a blended, lower-carbon fossil fuel product. Other materials used in biofuel production include soybean oil, used cooking oil and canola oil.

West Coast Reduction has become a key biofuel feedstock supplier to some of the world's largest energy producers, such as Britain's BP plc and Calgary's Parkland Fuel Corp., as part of the oil and gas industry's efforts to provide more renewable fuel sources. Parkland, for example, sells the biofuel it produces with tallow from West Coast Reduction at gas stations across Western Canada.

"The biofuel industry has really come online," Mr. Girman says.

West Coast Reduction's site at the Port of Vancouver is the only



West Coast Reduction's facilities at the Port of Vancouver.



A West Coast Reduction employee inspects rail cars containing fats and canola oils arriving at the Port of Vancouver from the Prairies.

facility in Western Canada with the capabilities to input feedstocks from various sources and refine them into an exact specification for different fuel producers, Mr. Girman says.

Parkland, which owns a Burnaby, B.C. refinery that produces roughly 50,000 barrels of fuels such as gasoline and diesel daily, has benefitted from its close proximity to the West

Coast Reduction facility.

Ryan Krogmeier, Parkland's senior vice-president of supply, trading and refining, says the tallow is shipped by barge along the Burrard Inlet to the refinery.

West Coast Reduction also has the unique ability to partially refine its products before being sent for blending into gasoline or diesel.

"Cooking down the animal fat to make lard is just the first step in the process [because] it has impurities in it that can come from the rendering process itself," Mr. Krogmeier says. "What [West Coast Reduction] can do is go through and further refine it by filtering out impurities and taking out a lot of the bad stuff that we don't want. It also removes some of the highly-paraffinic molecular chains."

Right now, tallow only makes up roughly 5 per cent of the material Parkland uses to produce fuel at its Burnaby refinery, but Mr. Krogmeier says the company's "aspiration" is to double that over the next year.

"Over time, you could see these kinds of lipids or bio-feedstocks certainly becoming much more than 10 per cent of the refinery's feedstock mix," he says. "We haven't really found the upper limit for that yet... it really just depends on the infrastructure."

West Coast Reduction is ideally positioned to provide more tallow to feed Parkland's increasing demand for renewable supplies, Mr. Krogmeier says. Eventually, it might even

be possible to cut fossil fuels out of their feedstock mix entirely, he adds, by processing just the tallow to produce hydrogenated-derived renewable diesel or HDRD, also known as "green diesel."

"As West Coast Reduction is able to recover more tallow from its processing, increasing its yield and the aggregation of the available tallow across the supply chain, it's really going to be fantastic," Mr. Krogmeier says.

In 2019, West Coast Reduction supplied roughly 230,000 metric tonnes of raw material to biofuel production. Mr. Girman says the company is looking to move its rendering off of the Port of Vancouver site and double its refining and storage capacity within the next decade.

"It's an important factor in reducing greenhouse gases," he says.