


AT LARGE
PETER LADNER
Mining major economic benefits from MicroSludge

What's the point, so many are asking, of taking an economic hit to slow down global warming in Canada if China, India, and the U.S. are carrying on business as usual?

The perfect calm in the midst of this stormy debate is the place where we can make economic gains and reduce greenhouse gas emissions at the same time – creating jobs rather than losing them. There are many such places, but let's look at one that has the potential to save local taxpayers three-quarters of a million dollars a year, reduce truck traffic, reduce greenhouse gas emissions, produce green electricity and heat, promote an award-winning local clean-tech company and generate exports and new local manufacturing jobs.

This story starts in your and my stomach, moves down through our toilets, and out to the Lulu Island sewage treatment plant, interim resting place for the sewage of 170,000 Lower Mainland residents. Today, that treatment plant on Gilbert Road in Richmond pipes our dinner remains into anaerobic digesters that churn it up and break it down before flushing the liquid waste into the Fraser River. The solid remains are slopped into trucks, at the rate of one 40-plus-tonne load a day, and trucked off to a mine reclamation site in Williams Lake. Half of the methane biogas generated at Lulu Island, 21 times more harmful as greenhouse gas emissions than carbon dioxide, is flared on site.

A proposal about to be approved

by the Metro Vancouver (formerly Greater Vancouver Regional District) board will use MicroSludge technology, developed at UBC and commercialized by Vancouver-based **Paradigm Environmental Tech-**

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nologies, to divert the flow of sewage sludge through a “cell disrupter valve.” That's engineering talk for a locally manufactured funnel that slams the sewage microbes against a wall at 700 miles per hour, breaking down microscopic cell walls and vastly improving the ability of digesters to convert the muddy leftovers into gas. Instead of 15% to 30% of the sludge microbes being converted to biogas, the MicroSludge technology pushes that up to 95%.

Based on test results from Chilliwack and Los Angeles, Paradigm president **Gordon Skene** has convinced Metro Vancouver's traditionally cautious engineers that we could reduce our truckloads of leftover sludge from around one a day to one every two days. That's a \$448,000 annual saving. The added methane generated on-site would be re-routed from its current venting place in the open air of Williams Lake to a state-of-the-art gas engine at the treatment plant. There it would

be turned into electricity and heat at vastly greater volumes than currently occurs. Nitrogen oxide emissions would drop by 90%. The added energy would allow the plant to stop buying natural gas and electricity from the grid, saving more money and generating carbon dioxide credits.

Add in the benefits of the energy produced, and the annual revenue payback to Metro Vancouver taxpayers jumps to \$790,000.

That's not all.

Metro Vancouver is exploring diverting those reduced truckloads of sludge to a local manufacturer, where they would be burned instead of coal, saving even more greenhouse gas emissions and costs.

Paradigm and Metro Vancouver desperately want to see this all in place by 2010, which means raising the \$10 million funding for the project by early 2008. The project team is working hard on the provincial and federal government, in partnership with the **National Research Council**, to source the funds.

If we are serious about reducing greenhouse gases, everyone wins with a project that spins off substantial economic returns as well as environmental benefits.

Let's get this one going. ■

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