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Innovation

Resource costs driving recycling sewage and waste in British Columbia

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Rising energy costs and the growing trend towards water conservation could become significant factors in driving greater innovation for recycling municipalities sewage and waste material, says Dr. Eric Hall, head of the University of B.C.'s civil engineering department.



"The technology has always existed," he says of innovations that make it even possible to turn wastewater into drinkable water. But costs of recovering usable materials and adapting the systems have made them beyond realistic reach. Also, there has been a public reluctance towards utilizing recycled waste products albeit heat or by-products (such as garden biomass) for fear of surviving pathogenic bacteria. "These are lingering deficiencies," he says, adding, "no matter how good the science, there has to be public acceptance".

But, escalating energy costs reflected in all things from home heating to transportation may be one economic trigger that finally leads to more utilization. Dr. Hall says the proposed use of heat generated by the breakdown of wastewater solids by bacteria and used to heat the Olympic Village in Whistler (and also in Vancouver) is an example of how economics has merged with the political will to adapt greener technology. "Whistler is a tourism town and they may be wanting to convey a certain message and are therefore taking the lead," he says. Whistler also has a sustainable community plan and the Olympic 2010 has a mandate to utilize green technologies.

Growing concerns over water and more municipalities increasing water conservation (new home metering to dual flush toilets) could also make municipal wastewater more attractive to utilize. Dr. Hall says currently a drawback to the economics of recycling municipal wastewater is the volume of liquid dealt with after solids are removed. North American households use more water than Europeans and that amount of water dilutes the sewage. "That makes recovery more difficult simply because of the volume," he says. "It would help if we reduced the water we use."

In the U.S., there has been more of a trend by municipalities to recycle their wastewater solids into usable gardening products. But, some B.C. municipal or regional governments are pioneering the trend. Kelowna, in 1992, started recycling biosolids mixed with wood chips to sell Ogogrow, commercial organic soil nutrient sold to residents or landscapers for garden use. In 2005, sales were approximately \$200,000. Approximately five truckloads of biosolids are trucked to a Winfield treatment plant daily to make the product. The GVRD also has a program, which produces Nutrifor from biosolids for use in municipal landscaping, gravel pit and mine reclamation projects and silviculture.

Calgary-based Maxim Power Corp., an independent power producer, has made a name out of innovative means of recycling usable energy from waste. It now operates 30 power plants in Western Canada, the U.S. and France having 482MW of electricity and 121 MW of thermal net generating capacity. In B.C., the company operates the Hartland Landfill project in Victoria, which utilizes the methane gas generated by the Victoria Capital Regional District landfill and transmits it to a station where it is put into BC Hydro's power grid.

Maxim also has the contract to utilize methane from the Vancouver Landfill to power a cogeneration facility yielding 7.4 MW and a 9.1 MW thermal project located on greenhouse lands in Delta. Electricity is sold to BC Hydro under a 20-year contract and thermal energy – and surplus energy – is sold to greenhouses.

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