TRANSFORM
Energy Systems through Game-changing Technology

BUILDINGS | CARBON CAPTURE AND STORAGE | FUEL CELLS | NUCLEAR | POLICY | PLANNING
RENEWABLES | SMART GRID | STORAGE | **SUSTAINABLE MOBILITY** | SUSTAINABILITY ANALYSES

TRANSFORMING SOLID WASTE INTO USABLE ENERGY

Bill Anderson

Waste disposal and its environmental impacts have become an increasingly growing concern within Canada. Canada generates more municipal waste per capita than any of its peer countries—at 777kg per capita in 2008, twice as much as Japan—across the Organization for Economic Co-operation and Development (OECD). Solid and semi-solid waste is major waste category, with the oil sands industry being the largest solid waste producer in Canada.

In Ontario, most of the municipal solid waste is landfilled or incinerated. Given the increasing difficulty in finding acceptable sites for landfilling, there is enormous pressure to find a viable, sustainable, and economic alternative.

Bill Anderson, Director of Admissions and Professor in the Faculty of Engineering at the University of Waterloo, and his colleagues believe the answer lies within converting waste into useful energy.

Using methods such as agricultural waste processing and resource recovery, solid waste can be burnt into ash, reducing the volume of landfilled waste up to 90% and recovering useful nutrients for organic fertilizer components. Modern energy recovery facilities equipped with air pollution control devices can also remove hazardous gases and particulates during the incineration process, leaving useful steam for electricity generation.

Anderson and his team look forward to informing and scaling the research through the upcoming Solid Waste Management Partnerships Workshop on June 24 that will bring together a group of leading academics and industry personnel to identity the solution pathways for addressing solid waste issues in Canada. The goal is to foster research collaboration with a focus on R&D capacity of integrated waste management systems.

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