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Candice Anderson Zero Waste Canada

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Waste-to-energy delays progress, eco-group says

According to the United Nations Environmental Programme, global plastic consumption has gone from 5.5 million tonnes in the 1950s to 110 million tonnes in 2009

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Bolstered by a new study, Canada's plastic industry seems to approach the issue of landfilled plastic with a 'life gives you lemons, make lemonade' philosophy — that is, recovering energy from plastic, and using it to power hundreds of thousands of Canadian cars and homes. But zero waste environmentalists say it's a band-aid solution, one that enables industry to ignore why the lemons exist in the first place.

Upwards of 600,000 cars and 500,000 households could be powered by energy from landfilled plastic, says the December 2012 study by the School of Planning at the University of Waterloo, conducted on behalf of the [Canadian Plastics Industry Association](#) (CPIA).

When [Candice Anderson, Zero Waste Canada's](#) Ontario director, heard these figures, she told *EcoLog News* that it's simply not worth it to recover energy from discarded plastics made from petroleum or natural gas in a chemical process. Waste-to-energy conversion is costly, she says, and it damages the environment while needing to send back more than 30 per cent of the processed waste back to the landfill anyway.

In her eyes, waste-to-energy is seen as a "slippery slope" that provides a crutch for unsustainable industry and postpones the reality of the waste problem, which is not what do to with the waste, but to identify the source of the waste. When tech companies keep racing to innovate new ways to treat waste, society gets farther away from the thinking that product design and actual waste generation are the culprits.

"Once we've built the plants, we're required to feed them," Anderson says of waste-to-energy facilities. "Why are we producing these materials to begin with?"

The conversion process necessary for waste-to-energy — the “to” part — is a delicate subject. Incineration is a word that makes modern industry cringe because of the public perception of filthy, towering, decrepit structures belching plumes of smoke and fire.

“First of all, energy recovery is not incineration,” CPIA VP Cathy Cirko told *EcoLog News*. “Energy recovery is the process by which solid waste is converted into feedstock materials or renewable energy.” Through technological refinements, words like gasification and pyrolysis are the norm, not incineration. Modern processes now span thermal, chemical and mechanical options.

“There are different technologies, but it’s the same in the end,” Anderson says. “You need to use energy to make energy. And these materials were not designed to be burned or [to] create efficient energy.”

Despite the waste-to-energy views held by many environmentalists, in a [2003 letter](#) to the Integrated Waste Services Association, the U.S. Environmental Protection Agency said waste-to-energy facilities produce electricity “with less environmental impact than almost any other source of electricity.” As recently as 2009, the agency has restated this claim.

While Cirko and Anderson fundamentally disagree on the value of waste-to energy, or more specifically its implied validation of waste, the two agree on one very important point.

“[Plastic] should not end up in landfill in the first place,” Cirko says. “If unrecycled or unrecyclable, we should have energy recovery facilities where plastics and other waste materials would go for recovery of energy.”

The University of Waterloo study, [“Energy and Economic Values of Non-Recycled Plastics \(NRP\) Currently Landfilled in Canada”](#), refers to Statistics Canada data that shows 324,731 tonnes of plastic materials were diverted in 2008 compared to 2.8 million tonnes disposed into landfills.

Who should be held accountable for that landfilled plastic? Consumers? Industry?

In Anderson’s view, the answer is simple. She wants industry to make only reusable and recyclable products that aren’t overpackaged. She says there are currently no incentives for industry to change its practices, though certain extended producer responsibility (EPR) policies cropping up across Canada have proven to be a step in the right direction.

According to the University of Waterloo study, if all non-recycled plastics were converted to fuel oil using technology called pyrolysis (thermal processing without oxygen), the plastics would produce nearly nine million barrels of oil worth \$786 million.

“Plastics, being hydrocarbons, have energy values substantially higher than coal and almost as high as natural gas and oil,” says M.E. Haight, one of the authors of the study. “Capturing this energy value of non-recycled plastics would contribute a significant supply of alternative energy in Canada.”

The real question may be why industry makes non-recyclable products (plastic included) in the first place. Generally, only two types of plastic are routinely recycled: polyethylene terephthalate (PET, used for synthetic fibers and water bottles) and high density polyethylene (HDPE, used for jugs, bottle caps, water pipes). Though sorting technology and other advances are growing at a fast pace, relatively little plastic is recycled because there are so many different types of plastic with different chemical compositions.

In recent years, there has been a push towards biodegradable plastics (or bioplastics), but the general issue is that there is a lack of demand for recycled plastics.

Anderson’s Zero Waste Canada organization, which launched in January of 2013, intends to lobby all levels of government as it defines its role. Her hope is that government will eventually use legislation as a tool to help industry rethink the practice of waste-to-energy as a viable long-term solution.

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