

How to make a profit from rotting garbage

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Landfills can make a profit from all their rotting waste and a new patent explains exactly how to make the most out of the stinky garbage sites.

Decomposing trash produces [methane](#), a [landfill gas](#) that can be used to produce electricity or heat. Since methane is a greenhouse gas and most [landfills](#) don't produce enough of it to make energy production worthwhile, many dumpsites burn, or flare, the methane away so that the harmful gas does not escape into the atmosphere.

But a process invented by Russell Chianelli, Ph.D., a chemistry professor at The University of Texas at El Paso, shows how landfills can up their [methane production](#) to turn a profit.

"We're wasting valuable methane by flaring it off," Chianelli said. "This process can help landfills make plenty of electricity to turn a profit by selling it back to the electric company."

The patented process involves capturing and recycling the [exhaust gas](#) that's produced from generating electricity with landfill methane. The gas can be used to heat the landfill and to provide additional moisture—conditions that can boost the landfill's overall methane production. Carbon dioxide found within the captured exhaust gas will also release additional methane once recycled within the landfill.

The invention takes this methane-boosting process a step further by suggesting that part of the recycled exhaust gas be used to cultivate algae.

Chianelli explained, "What makes the methane in landfills are the organisms that are feeding on decomposing waste. So what we need to do is feed them even more for more methane production."

Half of the cultured algae can be pumped down within the landfill to further increase methane output, while the other portion of algae could go toward creating biodiesel fuels.

"What's great about this is that it's a clean process," Chianelli said. "Nothing goes to waste; it's a zero-discharge system."

More information: <http://utepn.ws/1BKlIsa>

Provided by University of Texas at El Paso

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