November 2021 Environmental Moments

Innovations in Waste Management

With worldwide consumption at an all-time high, waste management is a growing concern. Improper disposal of trash can lead to air and water pollution, environmental damage, and the spread of disease. Proper disposal can limit these adverse effects and innovative practices can even turn garbage into a useful energy source. These are some of the emerging methods being utilized to handle trash and perhaps even turn it into treasure.

Landfill Gas-To-Energy

Landfill waste emits methane and other gases as it decays, and these emissions can be collected in pipes and directed to treatment for new purposes. "Landfill gas is collected from decomposing waste to control odors and emissions, with the potential for conversion into renewable energy." (WM) Landfills are the third-largest source of artificial methane and if captured and used could provide the energy for 12 million households. (EPA)

Robot Recyclers

Recycling is in a worse position than you may realize--contaminated lots, jammed machines, and even worker injury is common. All of these problems also cost plants valuable time. Due to this, "for the nation's 600-plus recycling facilities, which process some 67 million tons of waste, [robots] are one answer to the current bottlenecks facing the industry." (Forbes) Teaching AI to recognize the different materials to be sorted has been an arduous task and the current implementation is far from perfect. However, with "an ability to pick up 80 pieces of material per minute versus [the] 40" humans can, it is promising for increased productivity, efficiency, and accuracy with recycling. (Forbes)

Smart Bins

Traversing a city to empty half-filled bins is incredibly inefficient. Instead, new smart bins allow operators to, "monitor the fill-level, temperature, and conditions of trash bins in real-time using cloud software." (Insights) This helps the environment by slashing travel time and saves consumers money since they only pay for the pickups they need. The data gleaned from these bins may also shed light on our waste habits, providing new perspectives on how to lower levels of waste.

Produced by the Utility Arborist Association Environmental Stewardship Committee and Davey Resource Group:

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Works Cited

Cai, Kenrick. "Rise of the Recycling Robots." Forbes, Forbes Magazine, 17 Nov. 2020, https://www.forbes.com/sites/kenrickcai/2020/11/12/rise-of-the-recycling-robots/?sh=5c571be65f9e.

"Disrupting Waste Management: Breakdown on Startup Driven Innovation." StartUs Insights, 11 Dec. 2018, https://www.startus-insights.com/.

EPA, Environmental Protection Agency, https://www.epa.gov/.

"Waste Management." Waste Disposal & Recycling, https://www.wm.com/.