

# Adding Yard Waste to Landfills Does Not Mean More Greenhouse Gas

Research shows that adding yard waste to energy-producing landfills will create more renewable energy in Michigan. Recent follow-up research finds statewide landfill gas emissions will be reduced if existing and potential landfill gas-to-energy facilities increase their collection efficiency as a condition of accepting yard waste for landfill disposal.

Landfills produce gas, typically consisting of roughly 50 percent methane (the primary component of natural gas) and 50 percent carbon dioxide. A landfill gas power plant captures this gas, which would otherwise be released into the atmosphere or burned off in a flaring process. Methane is a greenhouse gas that has 23 times the negative impact of carbon dioxide. By using landfill gas to produce energy, the U.S. Environmental Protection Agency

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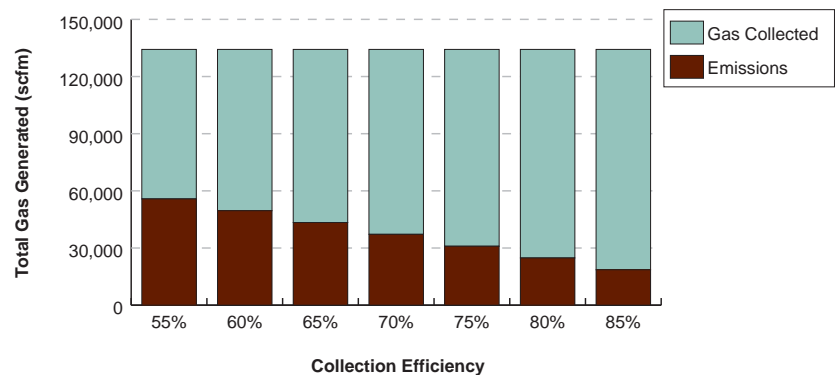
(USEPA) states that landfills can significantly reduce their emissions of methane and at the same time avoid the need to generate energy from fossil fuels, thus reducing emissions of methane, carbon dioxide, sulfur dioxide, nitrogen oxides, and other pollutants from fossil fuel combustion.

In Michigan, there are 20 operating and 12 potential landfill gas-to-energy facilities. If yard waste were added to these landfills, by 2015, the average amount of renewable energy produced would increase by 41 percent. The efficiency of the gas collection system at a landfill determines the amount of emissions that escape into the atmosphere. Therefore, ensuring a statewide increase in collection efficiency **as a condition for allowing the addition of yard waste** will offset any increase in emissions that may potentially result from the addition of yard waste to

the landfill. As Exhibit 1 shows, as the collection efficiency increases, the proportion of gas collected increases and the proportion of gas emitted decreases.

Exhibit 1

## Proportion of Landfill Gas Emitted Statewide at Increasing Collection Efficiency, 2015, with the Addition of Yard Waste



SOURCE: NTH Consultants Ltd. 2007.

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Although there is a general lack of published baseline data regarding current statewide collection efficiency, the USEPA suggests a collection efficiency of 60 percent. At this collection efficiency, a 7.4 percent increase in overall collection efficiency would be necessary to offset landfill gas resulting from the addition of yard waste; in other words an average statewide collection efficiency of 67.4 percent would result in no additional emissions from the disposal of yard waste to Michigan landfills.

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*Requiring 70% collection efficiency before allowing gas-to-energy landfills to accept yard waste would adequately protect against the statewide potential emissions resulting from yard waste disposal at landfills.*

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Requiring 70% collection efficiency **before** allowing gas-to-energy landfills to accept yard waste would adequately protect against the statewide potential emissions resulting from yard waste disposal at landfills.