



# Landfill Gas Energy

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When the biological waste inside landfills becomes trapped without exposure to air, it undergoes anaerobic decomposition and produces organic compounds, such as methane (CH<sub>4</sub>). Landfills are the largest source of anthropogenic methane emissions in the United States. Although methane is a potent greenhouse gas, it is also one of the primary fuels used to generate electricity (e.g., natural gas). Landfill methane emissions can be captured and repurposed for a variety of uses, including electrical generation, heating, and even refined as fuel oil. Landfill gas is by far one of the cheapest methods to generate Class I RPS energy, more cost effective than wind or solar technologies. However, trace chemicals present in landfill gas, combined with a conventional combustion-based electricity production process, can lead to the release of harmful compounds into the air and may not be the best method for managing toxic air pollution.

## **What is the status of landfill gas energy in Massachusetts?**

Under the Massachusetts [Renewable Portfolio Standard](#) (RPS), energy generated from captured landfill emissions qualifies as Class I and was the second largest source of Renewable Energy Credits (RECs) purchased to meet RPS obligations in 2013. As of October 2013, there were 20 landfill methane plants operating in MA. There are currently two operational landfill methane plants in the MAPC region:

- A 2.156 MW plant in Quincy
- A 3 MW plant in Randolph

Landfill methane plants were at one point opened in Braintree and Amesbury, but both were decommissioned and do not currently operate. There were also some potential landfill sites identified in Peabody, Hudson, and Marshfield, as well as a “candidate” landfill site in Wayland.

## **How can I develop landfill gas energy in my community?**

The EPA offers an Excel-based [Landfill Gas Energy calculator](#) that can help you determine if a landfill in your area is suitable for development. Large landfills that have been closed for several years are the best possibilities for electricity production. Communities with newer landfills might consider simply reducing the amount of methane produced by their landfills in the long run by segregating organic and non-organic waste and reducing waste overall through composting and recycling programs.