

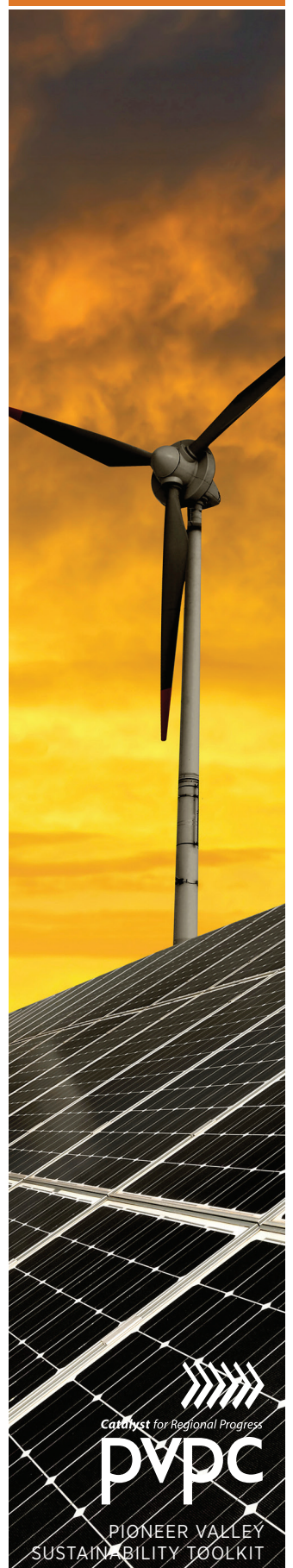
Methane Capture From Landfills

PURPOSE

To reduce the amount of harmful methane emissions that escape from decaying organic matter in landfills by capturing the methane and processing it for an alternative fuel resource.



Each day millions of tons of solid municipal waste are disposed of in sanitary landfills around the world. Many landfills produce methane gas as a byproduct of decaying organic matter, such as food and paper. When methane escapes from landfills and enters into the atmosphere it contributes to global climate change. Methane gas is the primary component of natural gas, which can be used for cooking, heating and generating electricity. Capturing methane from landfills can limit global climate change and be used for human needs.



HOW IT WORKS

Methane recovery systems can be installed to reduce the release of methane into the atmosphere from landfills by more than half. A series of vertical wells that are drilled down through layers of decaying matter, horizontal well connectors, and a vacuum system which directs the collected gas to the surface can be used to collect and pipe the methane to a central location.

The gas can be used in two ways. The landfill gas can be processed and made available as an alternative fuel. The quality of the power source is lower than pure methane or natural gas, but the cost to process the product is much lower and needs only minimal processing and minor modifications to be used in most modern combustion equipment. Another option is to create pipeline-quality gas from the landfill gas by processing and purifying the product, since only about one half of the landfill gas can be expected to be useable methane.

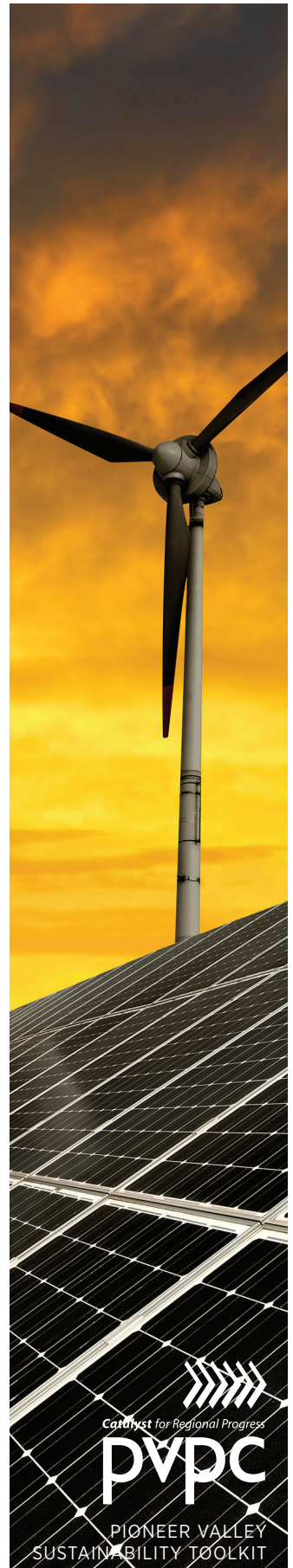
EXAMPLES OF WHERE STRATEGY HAS BEEN ADOPTED

North Country, New York

The Development Authority of the North Country (DANC), which receives around 1,000 tons of waste a day from three New York state counties, has a recovery system in place that captures excess methane and pipes it out of the landfill. The Authority has entered into a public-private partnership with Innovative Energy Systems to generate electricity from the captured methane. IES, which owns a total of nine power plants in New York, produces 4.8 megawatts of electricity from the landfill and sells it to the grid. The New York State Energy Research and Development Authority is providing a subsidy to the DANC at a rate of approximately \$22 per megawatt. The Climate Action Reserve also awarded the DANC carbon credits, which are now being sold.

Vancouver, British Columbia

Vancouver has reduced GHG emissions from municipal operations 33% below 1990 levels. The most significant reductions have come from the Vancouver Landfill where the city captures methane gas and burns it to generate enough electricity for 7000 homes. The landfill gas collection system includes 200 vertical extraction wells and 10 horizontal extraction laterals, built at a cost of \$1,750,000. The City selected Maxim Power Corporation to build a power station to burn the gases, and Maxim in turn sells electricity as “green power” at a premium price to B.C. Hydro.



Dartmouth, Massachusetts

The methane from the Crapo Hill Landfill in Dartmouth supplies fuel to a power plant that produces an estimated 3.3 million megawatts of electricity. Greater New Bedford Regional Refuse Management District owns and operates the landfill, which has 41 vertical wells and 20 horizontal extraction wells. The project also receives carbon credits.

LINKS TO MODEL BYLAWS OR MORE INFORMATION

GREEN HOUSE GAS ONLINE HAS A RESOURCE PAGE DEVOTED TO EXPANDING KNOWLEDGE OF METHANE SOURCES, SINKS AND SOLUTIONS, PARTICULARLY LANDFILL PRODUCED METHANE. THE PAGE CAN BE FOUND AT:

<http://www.ghgonline.org/methanelandfill.htm>

THE EPA HAS A VOLUNTARY ASSISTANCE PROGRAM FOR PUBLIC AND PRIVATE ENTITIES TO BECOME ACTIVE IN LANDFILL METHANE GAS CAPTURE. MORE INFORMATION ABOUT THE PROGRAM CAN BE FOUND AT:

<http://www.epa.gov/lmop/>

FOR MORE INFORMATION, PLEASE CONTACT

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