

# And the beat goes on



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It seems to be happening again. The shape of voluntary international emissions trading took one more small step toward clarity in June. Nuon, a Dutch utility company and GSF Energy, an affiliate of the US company DQE Inc, concluded a path-breaking transaction involving Nuon's purchase of greenhouse gas (GHG) emission reduction credits equivalent to 301,252 tonnes of carbon dioxide (CO<sub>2</sub>).

Headquartered in Amsterdam, Nuon is one of the largest multi-utility companies in the Netherlands, providing services such as electricity, gas, water and heat to 2.5 million residential and commercial customers. GSF Energy, a landfill gas (LFG) recovery firm, currently owns facilities across the US and provides turnkey design, financing, construction and operation of LFG recovery systems.

The emission reduction credits are attributable to GSF's methane capture programme at a sanitary landfill located in Monmouth County, New Jersey, during 2000, and the destruction of the captured methane to generate 54,113,598 kWh of electricity. GPU Energy, the New Jersey electric utility that sold and distributed the electricity to end-users, facilitated the transaction by providing

documentation to confirm GSF's unencumbered ownership of the GHG emission reduction credits.

Without installation of the landfill gas collection systems, the methane would have otherwise been vented into the atmosphere, thereby contributing to global warming. The capture and use of the landfill methane converts a highly potent greenhouse gas to a renewable energy resource.

The purchase by a European company of GHG offsets from an American renewable energy company makes the transaction a landmark trade. Chicago-based Environmental Financial Products arranged the transaction.


It is important to put this trade in a macro context. Emissions from landfills in the United States represent the largest source of methane from human activities. In 1999 emissions were equivalent to 188 million tonnes of CO<sub>2</sub>. This represents a significant decrease from the 1990 level of 236 million tonnes<sup>1</sup> which is attributable to the large increase in projects associated with capturing methane from landfills.

In 1990 there were only 89 landfill gas-to-energy (LFGTE) projects in operation. This grew to 299 in 2000.<sup>2</sup> Furthermore, signifi-

cant gains are still possible. There are 6,000 landfills scattered across the United States with only 325 LFGTE systems currently operating. The Environmental Protection Agency estimates that there may be up to 700 new landfills with the ability to convert methane to electricity. These LFGTE projects are capable of producing electricity for approximately 3 million houses across the US. This would be equivalent to offsetting the emissions of close to 24 million cars. These estimates may appreciably underestimate the potential. It is self-evident that the monetisation of environmental services through GHG trading will increase the return on projects. This means currently marginal investments could become profitable. Opportunities like this exist elsewhere around the world.

For example, opportunities to generate landfill gas GHG reductions in Canada have been demonstrated by the successful processing of over half a dozen LFG projects through Ontario's Pilot Emission Reduction Trading project (PERT), which has now been reformed as Clean Air Canada Inc. The World Bank's Prototype Carbon Fund included among its first projects a LFG-energy project in Latvia. And tremendous potential to generate GHG reductions exists in places like Brazil, where a large LFG energy resource is virtually untapped.

In the past, we have promised to transmit in this column information on greenhouse gas markets in general, and the Chicago Climate Exchange (CCX) in particular. The illustration shows the potential for landfill methane reduction in the Midwest. The 121 landfills in the seven states targeted for the initial market could generate 5 million tons of CO<sub>2</sub>-equivalent reductions per year.

We are pleased to report that a second company with landfill gas projects – Waste Management – is joining Zahren Alternative Power Corporation in the CCX design phase. Waste Management is a leading provider of comprehensive waste management services and operates 73 landfill gas-to-energy facilities. Finally, since our last report, energy giant BP, forest products firm Mead and flooring products company Interface have also agreed to participate in the design of the CCX. 

<sup>1</sup> Voluntary Reporting of Greenhouse Gases 1999, US Energy Information Administration.

<sup>2</sup> 2000 Update of US Landfill Gas-To-Energy Projects, Landfill Methane Outreach Program, US Environmental Protection Agency.

## Solid waste landfills in the US Midwest Region

