

## ABSTRACT

Methane to Markets (M2M a Program of the EPA)

### Landfill Gas to Energy

The US EPA requested proposals for projects that focus on reduction of greenhouse gases (GHG) worldwide. Advancing the recovery and use of methane generated in landfills as an energy source is a primary objective. The overall project goal is to develop a “Master Plan for Landfill Management for the State of Espirito Santo, Brazil” specifically aimed at the optimization of production, capture, and use of methane from the degradation of solid wastes. The first task of the project is to compile information on the current state of landfill practices from design, through construction and operation as practiced in Brazil, and the United States. Emphasis will be placed on current proven practice, but will provide insight to innovative technologies for landfill gas recovery and utilization.

The objective is to prepare a state-of-the-practice (SOP) report on technologies for generation, recovery, and use of methane generated in landfills in the USA. These practices will be considered for application to landfill issues in ES in a later task of the project. Reduction of landfill gas emissions and possible utilization of the gas (methane) can result in a reduction of greenhouse gases and provide additional revenue to landfill owners through sales of electricity, heating fuel or hot water. The use of landfill gas directly offsets use of oil based energy production.

The coverage of SOP technologies includes those implemented in the United States as there are a significant number of existing landfills operating advanced technologies. Information on recent studies of eleven landfills in Brazil is also summarized, and it points to appropriate technology use in Brazil.