USEPA Superfund Program
Landfill Methane-to-Energy Pilot

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May 6, 2010
Pilot Goal:

- Evaluate and increase the number of landfills on the Superfund National Priorities List (NPL) that use the methane generated on-site.
Technical Considerations for Using Landfill Gas:

- **Quality of Landfill Gas (LFG)**
  - Are there any known compounds in the gas or landfill that would preclude or greatly impact the cost of using LFG? (i.e. radioactive, infectious, explosive, or ordnance waste).

- **Quantity of LFG**
  - How much gas is present?
  - What is the methane concentration?
  - How fast is the flow rate declining?
Technical Considerations for Using Landfill Gas (concluded):

- **Accessibility of LFG**
  - How expensive will it be to collect the gas?
  - Is a gas collection system already in place?
  - Are there complicating site factors such as flooded wells, very shallow waste, unexploded ordnances, or unmapped trench-and-fill cells?

- **Energy demand**
  - What is the energy need for landfill related activities (e.g., ground water pump and treat system)?
  - What remediation equipment is used on site?
  - Is the landfill located in an area with nearby off-site energy demands that could be met by landfill methane-to-energy projects?
Initial Observations:

- Many NPL landfills in EPA Region 1, 2, and 3 in the Northeast have received so little municipal solid wastes in the last 20 years that they are producing very little recoverable methane.
- Few NPL landfills are producing marketable quantities of methane, but might produce enough to off-set on-site electricity usage.
- The cost for recovery of small methane flows from NPL landfills is expensive, and could benefit greatly from an existing well or vent field.
- Energy demands at NPL landfills are generally in the size range of microturbines.
Developing Screening Criteria:

- The ERG-Shaw-Cornerstone team is developing draft screening criteria that can be used in conjunction with the EPA LandGEM and LFGcost models to determine the practicality of using landfill methane to produce energy for on-site use.
- These criteria will include factors that are likely to have a significant positive or negative impact on gas recovery potential.
Schedule:

- Draft Screening Tool - July 2010
- Final Screening Tool - August 2010
- EPA final report – by December 2010
Next Steps:

- Encourage EPA Regions to find suitable NPL landfill methane-to-energy projects using the screening criteria.
- Encourage EPA Regions to collaborate with interested municipal authorities and Responsible Parties to implement projects.