



Participant Data

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Project Type:	Landfill Gas (LFG)-to-Energy
MRV Protocol:	Developed by Environmental Resources Trust (ERT): “Monitoring, Reporting, and Verification (MRV) Protocol for the Chicago 2.0 MW LFG-to-Energy Project”, August 17, 2007.
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Summary

Based on its review of U.S. Energy Biogas Corporation’s (USEBC) LFG-to-Energy projects, ERT has verified information submitted by USEBC as being consistent with the referenced monitoring, reporting, and verification (MRV) protocol. ERT finds that the project baseline conforms to generally accepted greenhouse gas (GHG) accounting standards. The emission estimates are found to be a fair and accurate representation of USEBC’s actual emissions and are free from material misstatement. ERT has verified the projects according to ERT’s *Carbon Controlled Standard (June 2007)*, and registered a total of 644,368 metric tons of CO₂ equivalent emission reductions (CO₂e), 441,584 tonnes CO₂e vintage 2006 and 202,784 tonnes CO₂e vintage 2007 (H1), broken down by project as follows:

- Brickyard: 95,330 (2006) and 43,162 (H1 2007)
- **Chicago: 43,632 (2006) and 18,630 (H1 2007)**
- Dolton: 104,769 (2006) and 54,567 (H1 2007)
- Romeoville: 35,491 (2006) and 17,005 (H1 2007)
- Streator: 32,696 (2006) and 14,454 (H1 2007)
- Upper Rock: 129,666 (2006) and 54,966 (H1 2007)

This is conditioned on the following findings presented below.*

It is ERT’s opinion that: (1) baseline and project activity emissions quantification methodologies result in a conservative estimate of emission reductions, which are not overstated; (2) emission reductions are real, surplus, unique, permanent, and additional to those which would have occurred in the absence of the project; (3) emission reductions are verifiable with finely detailed activity data collected, managed, reported, and maintained by USEBC, in accordance with the MRV protocol; and (4) USEBC has clear title rights to the landfill gas, certified by contract, and ownership of the emission reduction values created by their LFG-to-Energy operations.



Verification Approach

The objective of this verification project effort is to verify that the actual monitoring systems and procedures and quantification methodologies are in compliance with those specified in the MRV protocol, and that the methods used for estimating GHG emission reductions are sound and consistent with established data and methodologies. The verification evaluates the GHG emission reduction data and makes a conclusion with a high level of assurance that the reported GHG emission reductions data are free of material misstatements. It also verifies that the reported GHG emissions data are sufficiently supported by documentary or physical evidence, such as monitoring data, sales records, etc. In addition to these types of quantitative data, the verification also considers qualitative data on emission reductions, such as internal management procedures and controls, calculation procedures, frequency of data collection and reporting, and internal quality control checks on data accuracy and transfer. Emissions and reduction estimates are confirmed, and an evaluation of the uncertainty associated with the reported data is made.

This verification effort was conducted following procedures outlined in the “*Corporate GHG Verification Guideline*” (prepared by ERT in 2005 under a grant program overseen by U.S. EPA Climate Leaders), as they apply to emission reduction projects. This guideline document provides verification guidance on boundaries, quantification methods, emissions data, activity data, emission factors, base year emissions, reporting, QA/QC, and key performance indicators. It seeks to independently corroborate the claims of the MRV protocol based on supporting evidence and good engineering practice. Reported data, quantification methods, source data, and data management systems are examined in detail. Records that pertain to emissions quantification, such as fuel usage and material/electricity consumption are also examined. External data and records may also be employed to confirm internal estimates. Third party site visits to selected project sites are also conducted.

This verification effort involved a review of calculations and methodologies used to generate the emissions estimates presented in the MRV protocol, including reviews of some disaggregated data. Documentation was examined and the audit trail followed below the aggregated project reporting level to raw data sources. Field site survey visits were conducted by ERT staff at USEBC LFG-to-Energy facilities in East Moline (Upper Rock), Dolton, and Danville (Brickyard), Illinois, in June 2007.



Key Findings*

<p>Project Boundaries, Dates, and Ownership:</p>	<p>The project boundaries are consistent with those described in the referenced MRV protocol. The project crediting period dates associated with the emission reductions verified in this statement are 1 January 2006 through 30 June 2007. The project initiation date is February 1998.</p> <p>Previous emission reductions from the 2003-2005 time period, which are part of USEBC's asset base are being reviewed as a follow-on part of this verification project. The referenced MRV protocol, and its associated baseline alternatives, additionality tests, and quantification procedures will be applied on a project-specific basis to those 2003-2005 historical reductions, as part of that ongoing verification effort. This verification statement will be updated to include those historical project reductions when that verification effort is completed.</p> <p>Contract documents were reviewed to verify USEBC's ownership of the emission reductions. In contract, USEBC entered into a landfill gas lease agreement in which they were provided the rights, title, and interest, if any, of 100% of the LFG from the landfill, and all such rights were conveyed to USEBC.</p>
<p>Additionality and Leakage:</p>	<p>The emission reductions were verified to be additional, given existing U.S. and State of Illinois regulatory requirements. Various other additionality tests were performed in the referenced MRV protocol according to the ERT <i>Carbon Controlled Standard</i> (June 2007), further documenting the additionality of the project.</p> <p>No leakage of emissions outside the project boundaries, i.e., increases in emissions at other sources as a result of this project, was identified.</p>
<p>Baseline</p>	<p>The baseline is the unmitigated release of methane from the landfill that would have occurred in the absence of USEBC's LFG-to-Energy project. Year 2006 and 1st half (H1) 2007 emission reductions for this specific verification project have been estimated relative to such a baseline.</p> <p>The WRI/WBCSD Project Accounting Protocol provides guidance on project-specific baselines which indicate that for projects that capture fugitive emissions or those that remove or store GHGs, baseline emissions from the continuation of current activities will be equivalent to the amount of GHG emissions captured or sequestered by the project, respectively. The USEBC MRV protocol's baseline determination is consistent with that approach.</p>



Monitoring, Data Collection, & Methodology:	<p>In general, the monitoring procedures implemented and their associated results were in keeping with the monitoring plan described in the referenced MRV protocol.</p> <p>Measurements of LFG collected from the landfill and combusted for electricity generation are collected using an orifice plate meter on the LFG header to the IC engines. Daily raw data and weekly summary spreadsheets were reviewed throughout the entire reduction project crediting period, and were used to generate the annual reported results. Comparisons were made against monthly and annual aggregated data results from the electronic database reports, to verify reported results. Annual reported results were also compared against USEBC's annual emission inventory report. Key performance indicator (e.g., Btu/kW-hr) data checks were also reviewed.</p> <p>Electricity usage and natural gas consumption records were generally available for all daily and weekly reporting periods during the 2006 through H1 2007 reduction project time period.</p>
Quality Control, Reporting, Documentation, & Uncertainties:	<p>Quality control, reporting, and documentation procedures followed in this GHG emission reduction project were generally in keeping with the referenced MRV protocol document. Basic QA/QC measures are explained in the MRV protocol, and their implementation was verified in this project. Some of these include provisions for QA/QC procedures and practices in the metering instrumentation measurement, regular calibration, and data collection/review processes. Overall, the uncertainty in emissions data and emission reduction calculations are deemed to be low, in particular given the use of highly accurate LFG flow and electricity production/sales meters, and gas analysis equipment, as well as multiple daily and weekly data cross-checks.</p>

*Applicable to this verification statement versus entire project lifetime.

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