

**GHG Emission Factor Development Project for Selected
Sources in the Natural Gas Industry**

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Quarterly Progress Report

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Submitted to

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Project Overview

Methane (CH₄) is the primary component of natural gas and is also a potent greenhouse gas (GHG). Emissions of CH₄ from natural gas production, processing, and distribution are among the top ten source categories of greenhouse gas emissions in the United States, expressed on a CO₂ equivalent basis. The overall goal of the project is to update default CH₄ emission factors for selected processes and equipment used in the natural gas industry. The default emission factors will be updated by compiling and synthesizing existing data for a variety of source categories and by acquiring new emission rate measurement data for selected sources where existing data have unacceptably large uncertainties or are insufficiently representative of current practices or equipment.

The project is organized into four tasks:

- *Task 1, Data Synthesis and Gap Analysis:* The purposes of this task are to: (1) identify, compile, and synthesize existing CH₄ emission factor and activity factor data; (2) critically review the quality and representativeness of the existing data; (3) recommend and prioritize emission source characteristics for new data collection efforts under Task 3.
- *Task 2, Technical Plan Development:* The purpose of this task is to develop technical work plans and detailed cost estimates for conducting data collection and measurement studies aimed at filling the emission data gaps identified in Task 1. In doing so, we will consider the range of potential activity data metrics that could be used for updating default emission factors and gather preliminary data on relevant metrics to ensure that all the major subgroups of equipment or processes are taken into account.
- *Task 3, Measurements and Analysis:* The purposes of this task are to: (1) execute the technical plans developed in Task 2, contingent on authorization by EPA; and (2) analyze the resulting data to develop new default emission factors and uncertainty estimates for the measured sources.
- *Task 4, Reporting and Dissemination:* The purpose of this task is to report on the default emission factors developed in Tasks 1 and 3 of this study, including the methods used in the process. Reporting and communication with stakeholders will be integrated into all of the tasks and a final reporting will disseminate project results.

Progress on Tasks

Task 1

A draft review of sources of emission factor and/or activity factor data that may have relevance to the natural gas sources of interest was prepared at the end of 2008. A series of stakeholder conference calls to solicit input on the report were organized (calls were held beginning in January, 2009) and an updated literature review was prepared. The updated review, dated March 31, 2009, was posted to the project web site:

(<http://www.utexas.edu/research/ceer/GHG/tasks.htm>)

On a subsequent conference call (May 12, 2009), stakeholders identified additional reports and reports that, while not currently available, would likely become available during the lifetime of the project. These reports will be incorporated into the Task 1 report as they emerge, so the report will continue to be updated throughout the project.

Task 2

During the previous quarter a work plan specifying methods and procedures for gathering additional data needed for updating factors used for estimating methane emissions from centrifugal and reciprocating compressors used in natural gas processing was drafted. A series of stakeholder conference calls to solicit input on the plan were organized (calls were held beginning in January, 2009). A second draft of the work plan has been added to the project web site: (<http://www.utexas.edu/research/ceer/GHG/tasks.htm>).

During the current quarter, the focus has been on identifying compressor sampling sites. At least 4 different companies are considering opening multiple sites to the study team. Compressor inventories at the candidate sites have been assembled and have been compared to available compressor inventories. Draft site access agreements have been forwarded to the host companies, and negotiations are expected to begin in the next quarter. For sites outside of Texas, the University has indicated that additional liability insurance may be required. This is being investigated by the study team.

A preliminary data collection event was successfully completed and the results from the sampling are currently being documented. This preliminary sampling experience will be used to establish detailed cost estimates for the first group of measurements. These cost estimates will then be used by the study team, the EPA and the stakeholder group to establish priorities for compressor measurements.

Plans for Next Quarter

Task 1

The literature review will be updated, as appropriate, on an on-going basis.

Task 3

If site access agreements are finalized, the first group of compressors will be sampled during the next quarter.