

# Verification of Landfill Gas Greenhouse Gas Emissions Credits

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# Presentation Outline

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- Introduction
- Protocols
  - Chicago Climate Exchange
- Verification process
  - Steps
  - Evidence required
- What does this mean to me?





# Landfill gases (LFG)

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- Controlling methane from landfills results in a decrease in greenhouse gases (GHGs) through:
  - Flaring
  - Power generation
  - Natural gas production





# GHG Credits from LFG

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- Anyone may be able to generate GHG emissions credits
  - Exact requirements depend on scheme used
  - Must not already be required to control LFG
- Buyers/Markets want assurance that the credits are “real”
  - Verification process





# Why Verification?

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- Requirement to Sell Credits
  - Companies are authorized to provide verification services
- Credibility
  - GHG emissions are not continuously monitored
  - Derived from electricity generation, methane content, gas flow data





# Chicago Climate Exchange

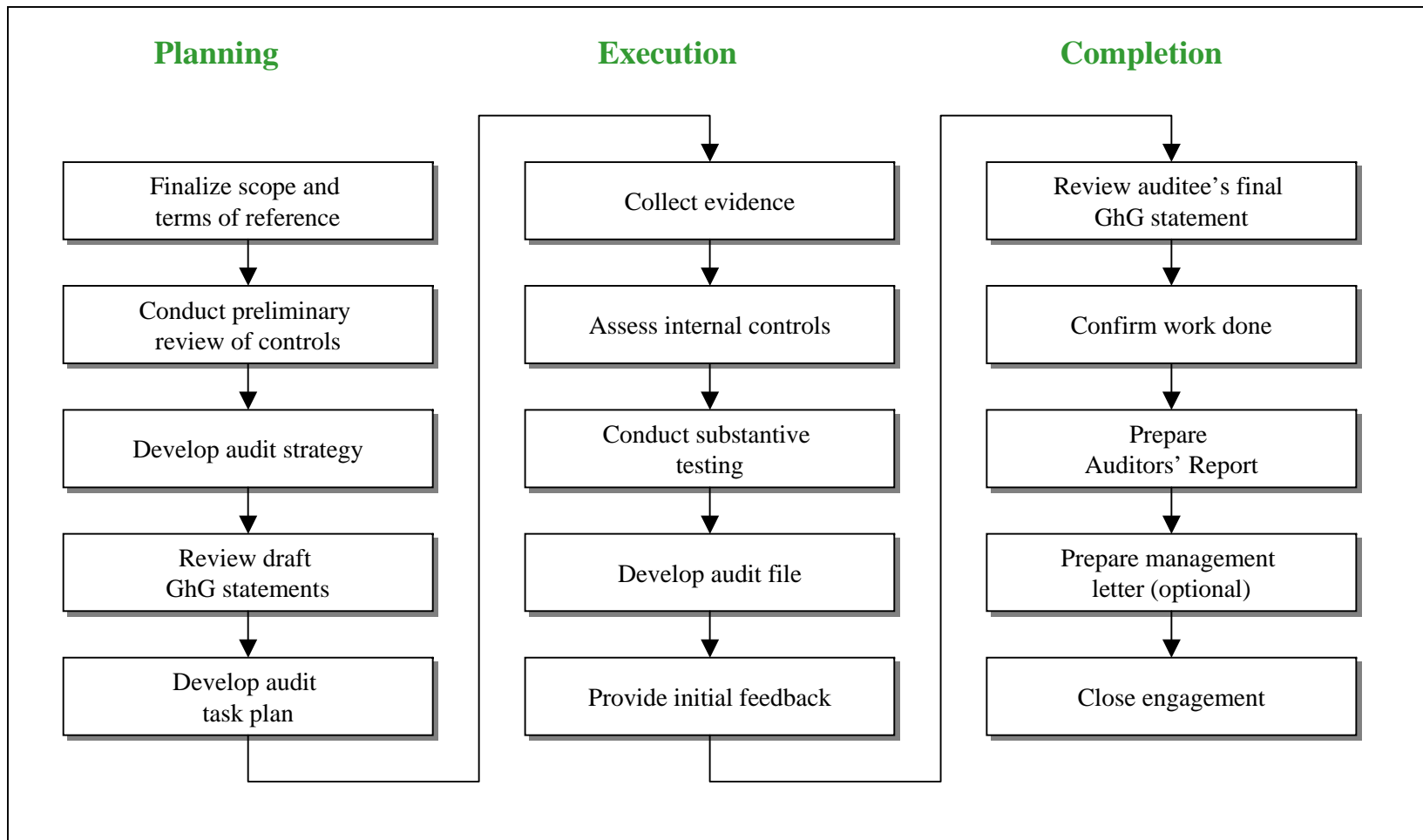
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- Two methods of calculating LFG credits
  - Use landfill gas flow and methane content data
  - Use electricity data
- Both use constants to calculate the CO<sub>2</sub>-equivalent reduction quantities





# General Overview of Audit Process





# The Audit Process

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- Initial Review of Draft GHG Emissions Statements
- Corporate/Client Level (Macro) Review
- Collection of Evidence
  - Interviews, documentation, records...





# The Audit Process (cont'd)

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- Assessment of Site's Internal Controls
  - calculations per protocol, measurements, data systems, control procedures...
- Follow-up Detail Testing
- Auditor Statement





# Collection of Evidence is Crucial

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- Data and processes are reviewed
  - Activity data
  - Controls on data
  - Calibrations
  - Calculations
- Center around ensuring that the calculations are accurate





# Activity Data

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- LFG gas flow measurements
  - Circle charts
  - Computer log
- Methane content readings
  - Field readings
  - Laboratory data
- Electricity generation
  - Production data





# Controls on Data

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- Data compilation
- Procedures/processes
- Quality assurance
- Overall management system or operating system requirements





# Calibrations

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- Flow meter
- Electricity meter
- Methane content equipment
- Third party or in-house
- Records





# Calculations

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- Formulas
- Assumptions
- Data testing





# The End Result

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- **Audit Statement**
  - Companies allowed to respond to ‘corrective action’ items before final statement
- **Management Report**
  - Overview of audit process and findings
  - Identification of best practices
  - Opportunities for improvement





# What does this mean to me?

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- If you may want to use current data for future emissions credits...
  - Ensure that you perform calibrations on meters/monitoring equipment
  - Retain calibration records
  - Ensure that you have complete data





## What does this mean to me? - 2

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- If you may want to use current data for future emissions credits...
  - Note down time or errors in logging
  - Assemble evidence prior to audit
  - Ask questions!





# First Environment Offices

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