

EPA's GHG Inventory

Estimating MSW Landfill Emissions

Kerry Kelly
Waste Management

April 27, 2017

THINK GREEN.®



Updating EPA's GHG Inventory

EPA Reached Out to Stakeholders for Advice

EPA follows the IPCC 2006 Guidelines

Has used a combination of secondary datasets to perform a top-down national inventory from all sectors

EPA wanted to make use of newer data from GHG Reporting Program (GHGRP) providing data from 2010 forward

While not all MSW landfills report in GHGRP, EPA estimates the program captures 85%-95% of landfill GHG emissions

Landfill Sector Endorsed Use of GHGRP Data

Recommended that EPA aggregate reported site-specific emissions

GHGRP emissions calculations are more detailed, and up-to-date

- Reflects more representative emissions than 2006 IPCC methods
- GHGRP has evolved with new science (e.g., CH₄ oxidation, influence of cover)

GHGRP emissions subjected to third-party validation by EPA

GHGRP data are “certified” by designated reporter

Use of GHGRP reduces burden on EPA

GHGRP Data

Advantages

GHGRP represents Tier 3 level data under IPCC Framework

- Uses site-specific data
- Employs complex calculations & systematic methods
- Provides rigorous, more credible estimates -bottom-up vs. top-down
- Incorporates site-specific methane recovery data—88% of GHGRP landfills employ gas collection and control, and report certified, validated CH₄ flow and gas composition=low uncertainty
- Reflects site-specific CH₄ oxidation factors developed from CH₄ flux field data, more robust than IPCC default

Short-term Landfill Sector Recommendations

For Use of GHGRP Data

Use emissions reported directly by sites as certified and validated by EPA

Use the Annual Waste Disposal Data reported under GHGRP by sites

Since EPA determined GHGRP represents 85%-95% of landfill sector emissions, apply a 10% correction factor to account for non-reporting landfill emissions

- This is consistent with national data showing only 7% of annual waste is disposed in non-reporting landfills

Additional Inventory Enhancements

Landfill Sector Recommendations

EPA and industry data, and studies conducted by the Environmental Research and Education Foundation (EREF), show changes in the waste disposed in landfills -- a decline in organics and increase in non-MSW inert materials over last decade

EPA should re-evaluate its national, default DOC (degradable organic content) values for years 2004 and beyond.

EPA should review the disposal data in the GHGRP as a means to enhance its analysis rather than relying on 20-30+ year-old data from only 40 landfills