

Lime Manufacturing



Final Rule: Mandatory Reporting of Greenhouse Gases

Under the Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that manufacture lime (as defined below) must report emissions from lime manufacturing processes and all other source categories located at the facility for which methods are defined in the rule. Owners or operators are required to collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

The lime manufacturing source category consists of each kiln that produces a lime product from limestone or dolomite by means of calcination.

What GHGs Must Be Reported?

Lime manufacturing facilities must report the following emissions:

- Carbon dioxide (CO₂) process emissions from all lime kilns combined.
- CO₂ combustion emissions from lime kilns.
- Nitrous oxide (N₂O) and methane (CH₄) emissions from fuel combustion at each kiln. Report these emissions under 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources) using the methodologies in subpart C.
- CO₂, N₂O, and CH₄ emissions from any other stationary combustion units. Report these emissions under 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources). The information sheet on General Stationary Fuel Combustion Sources summarizes the rule requirements for calculating and reporting emissions from these units.

In addition, each facility must report GHG emissions for any other source categories for which calculation methods are provided in other subparts of the rule.

How Must GHG Emissions Be Calculated?

Calculate CO₂ emissions from kilns by using one of the following methods, as appropriate:

- Kilns with certain types of continuous emission monitoring systems (CEMS) in place must report using the CEMS and follow the Tier 4 calculation methodology of 40 CFR part 98, subpart C to report combined CO₂ emissions from calcination and fuel combustion.
- For other kilns, the reporter can elect to either:
 - Install and operate a CEMS to measure combined process and combustion CO₂ emissions according to the requirements of 40 CFR part 98, subpart C.
 - Calculate CO₂ process emissions from lime production using the following measurements:
 - A facility-wide emission factor calculated monthly for each lime type from monthly measurements of the calcium oxide and magnesium oxide content of the lime and stoichiometric ratios of CO₂ to each oxide in the lime.
 - An emission factor calculated monthly for each lime byproduct/waste sold (such as lime kiln dust).
 - Annual emissions from unsold lime byproducts/wastes (such as lime kiln dust and scrubber sludge).
 - Mass of each lime type produced on a monthly basis.

- Mass of byproduct/waste sold on a monthly basis.

A checklist for data that must be monitored is available at:
www.epa.gov/ghgreporting/documents/pdf/checklists/limemanufacturing.pdf.

When Must Reports be Submitted?

The submission date for the annual GHG report can vary in the first 3 years of the program.

- Reporting Year 2010. The report was required to be submitted by September 30, 2011.
- Reporting Year 2011. The due date depends on which source categories are included in the report. If the report includes one or more of the source categories listed below, then the report must be submitted by September 28, 2012. This reporting deadline applies to all subparts being reported by the facility. In addition, if the facility contains one or more of these source categories and the facility submitted a GHG annual report for reporting year 2010 under another subpart (e.g., subpart C for general stationary fuel combustion), then by April 2, 2012 you must notify EPA through e-GGRT that you are not required to submit the second annual report until September 28, 2012 (the notification deadline according to 4 CFR 98.3(b) is March 31, 2012, however, because this date falls on a Saturday in 2012, the notification is due on the next business day).
 - Electronics Manufacturing (subpart I)
 - Fluorinated Gas Production (subpart L)
 - Magnesium Production (subpart T)
 - Petroleum and Natural Gas Systems (subpart W)
 - Use of Electric Transmission and Distribution Equipment (subpart DD)
 - Underground Coal Mines (subpart FF)
 - Industrial Wastewater Treatment (subpart II)
 - Geologic Sequestration of Carbon Dioxide (subpart RR)
 - Manufacture of Electric Transmission and Distribution (subpart SS)
 - Industrial Waste Landfills (subpart TT)
 - Injection of Carbon Dioxide (subpart UU)
 - Imports and Exports of Equipment Pre-charged with Fluorinated GHGs or Containing Fluorinated GHGs in Closed-cell Foams (subpart QQ)

If the report contains none of the source categories listed above, then the report must be submitted by April 2, 2012 (the deadline is March 31, 2012, however, because this date falls on a Saturday, the annual report is due on the next business day).

- Reporting Year 2012. Starting in 2013 and each year thereafter, the report must be submitted by March 31 of each year, unless the 31st is a Saturday, Sunday, or federal holiday, in which case the reports are due on the next business day.

What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), each lime manufacturing facility must report the following information:

If a CEMS is used to measure CO₂ emissions, then under this subpart the relevant information required under 40 CFR subpart C (General Stationary Fuel Combustion Sources) for the Tier 4 calculation methodology and the following information must be reported:

- Method used to determine the quantity of lime sold.
- Method used to determine the quantity of lime byproduct/waste sold.
- Beginning and end-of-year inventories for each lime product.
- Beginning and end-of-year inventories for lime byproducts/wastes.
- Annual amount of lime byproduct/waste sold, by type (tons).
- Annual amount of lime product sold, by type (tons).
- Annual amount of lime byproduct/waste not sold, by type (tons).
- Annual amount of lime product not sold, by type (tons).

If a CEMS is not used to measure emissions, then the following information must be reported:

- Annual CO₂ process emissions from all kilns combined (metric tons).
- Monthly emission factors for each lime type.
- Monthly emission factors for each sold byproduct/waste by lime type.
- Standard method used (American Society for Testing and Materials or National Lime Association testing method) to determine chemical compositions of each lime type and lime byproduct/waste type.
- Monthly results of chemical composition analysis of each lime product and byproduct/waste sold.
- Annual results of chemical composition analysis of each type of lime byproduct/waste not sold.
- Method used to determine the quantity of lime sold.
- Monthly amount of lime product sold, by type (tons).
- Method used to determine the quantity of lime byproduct/waste sold.
- Monthly amount of lime byproduct/waste sold, by type (tons).
- Annual amount of lime byproduct/waste not sold (tons).
- Monthly mass of each lime type produced (tons).
- Beginning and end-of-year inventories for each lime product.
- Beginning and end-of-year inventories for lime byproducts/wastes.
- Annual lime production capacity (tons) per facility.

EPA has temporarily deferred the requirement to report data elements in the above list that are used as inputs to emission equations (76 FR 53057, August 25, 2011). For the current status of reporting requirements, including the list of data elements that are considered to be inputs to emissions equations, consult the following link: <http://www.epa.gov/ghgreporting/reporters/cbi/index.html>

For More Information

This document is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. The series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the final rule.

Visit EPA's Web site (www.epa.gov/ghgreporting/reporters/index.html) for more information, including the final preamble and rule, additional information sheets on specific industries, the schedule for training sessions, and other documents and tools. For questions that cannot be answered through the Web site, please contact us at: GHGreporting@epa.gov.