

Iron and Steel Production



Proposed Rule: Mandatory Reporting of Greenhouse Gases

Under the proposed Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that contain iron and steel production processes (as defined below) and that emit 25,000 metric tons of GHGs per year or more (expressed as carbon dioxide equivalents) from stationary combustion, miscellaneous use of carbonates, and other source categories (see information sheet on General Provisions) would report emissions from all source categories located at the facility for which emission calculation methods are defined in the rule. Owners or operators would 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?

Under the proposal, the iron and steel production source category consists of facilities with any of the following processes:

- Taconite iron ore processing.
- Integrated iron and steel manufacturing.
- Coke making not co-located with an integrated iron and steel manufacturing process.
- Electric arc furnace (EAF) steelmaking not co-located with an integrated iron and steel manufacturing process.

Integrated iron and steel manufacturing means the production of steel from iron ore or iron ore pellets. At a minimum, an integrated iron and steel manufacturing process has a basic oxygen furnace for refining molten iron into steel. Each coke-making process and EAF process located at a facility with an integrated iron and steel manufacturing process is part of the integrated iron and steel manufacturing facility.

What GHGs Would Be Reported?

The proposal calls for facilities to report the following emissions annually:

- Carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from fuel combustion at each stationary combustion unit according to the requirements in 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources). Stationary combustion units include taconite furnaces, direct reduction furnaces, sintering processes, byproduct recovery coke oven battery combustion stacks, blast furnace stoves, boilers, process heaters, reheat furnaces, annealing furnaces, flares, flame suppression, ladle reheaters, and any other miscellaneous combustion sources. The information sheet on general stationary fuel combustion sources summarizes the proposal for calculating and reporting emissions from these units.
- CO₂ process emissions from each taconite indurating furnace, basic oxygen furnace, nonrecovery coke oven battery combustion stack, sinter process, EAF, argon-oxygen decarburization vessel, and direct reduction furnace.
- CO₂ emissions from each coke pushing process.

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

How Would GHG Emissions Be Calculated?

Facilities would calculate GHG emissions as follows:

- For CO₂ process emissions at each taconite indurating furnace, basic oxygen furnace, nonrecovery coke oven battery, sinter processes, EAF, argon-oxygen decarburization vessel, and direct reduction furnace; owners and operators would calculate emissions using one of the three methods, as appropriate:
 - Kilns with certain types of continuous emissions monitors (CEMS) in place would report using the CEMS and follow the methodology of 40 CFR part 98, subpart C to report total CO₂ emissions from calcination and fuel combustion. At other kilns, the use of CEMS would be optional.
 - Kilns without CEMS could choose either one of the two calculation methods below:
 - Use a carbon balance method described in the rule to calculate the mass emissions rate of CO₂ in each calendar month for each process, based on the monthly mass of inputs and outputs and the respective weight fraction of carbon in each process input or output that contains carbon. Use separate procedures and equations for taconite indurating furnaces, basic oxygen process furnaces, nonrecovery coke oven batteries, sinter processes, EAFs, argon-oxygen decarburization vessels, and direct reduction furnaces.
 - Use a site-specific emission factor determined from a performance test that measures CO₂ emissions from all exhaust stacks for the process and also measures either the feed rate of materials into the process or the production rate during the test in metric tons per hour.
- For coke oven pushing, use a CO₂ emission factor provided in the rule.

What Information Would Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), the proposal calls for each annual report to contain the following information for process emissions from each taconite indurating furnace, basic oxygen furnace, nonrecovery coke oven battery, sinter process, EAF, argon-oxygen decarburization vessel, and direct reduction furnace, as applicable:

- Annual CO₂ emissions by calendar quarter.
- Annual total for all process inputs and outputs when the carbon balance is used for specific processes by calendar quarter (short tons).
- Annual production quantity (in metric tons) for taconite pellets, coke, sinter, iron, and raw steel by calendar quarter.
- Production capacity (in tons per year) and number of operating hours for the production of taconite pellets, coke, sinter, iron, and raw steel.
- Annual operating hours for taconite furnaces, coke oven batteries, sinter production, blast furnaces, direct reduced iron furnaces, and electric arc furnaces.
- Site-specific emission factors for all process units for which the site-specific emission factor approach is used.

Facilities that use CEMS would also report the data specified in 40 CFR 98.34(d) of subpart C (General Stationary Fuel Combustion Sources).

For More Information

This series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the proposed rule. However, these information sheets are not intended to be a substitution for the rule. Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the proposed preamble and rule and additional information sheets on specific industries, or go to www.regulations.gov to access the rulemaking docket (EPA-HQ OAR-2008-0508). For questions that cannot be answered through the Web site or docket, call 1-877-GHG-1188.