

Ammonia Production

Subpart G, Greenhouse Gas Reporting Program

OVERVIEW

Subpart G of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR 98.70 – 98.78) applies to any facility that contains an ammonia (NH_3) manufacturing process and meets the Subpart G source category definition. Some subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this subpart, please refer to 40 CFR 98.71 and the GHGRP [Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart G understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.



How is This Source Category Defined?

The ammonia (NH_3) manufacturing source category consists of process units in which NH_3 is manufactured either from a fossil-based feedstock produced via steam reforming of a hydrocarbon (HC) or through the gasification of solid and liquid raw material.



What GHGs Must Be Reported?

NH_3 manufacturing facilities must report the following emissions:

- Carbon dioxide (CO_2) process emissions for each NH_3 manufacturing unit following the requirements of this subpart (CO_2 process emissions reported under this subpart may include CO_2 that is later consumed on-site for urea ($\text{CO}(\text{NH}_2)_2$) production, and therefore is not released to the ambient air from the NH_3 manufacturing unit).
- CO_2 , methane (CH_4), and nitrous oxide (N_2O) emissions from each stationary combustion unit. Report these emissions under Subpart C (General Stationary Fuel Combustion Sources) found at 40 CFR 98.30 – 98.38, except that for NH_3 manufacturing processes Subpart C does not apply to any CO_2 resulting from combustion of the waste recycle stream (commonly referred to as the purge gas stream).
- CO_2 emissions collected and transferred off-site, following the requirements of Subpart PP (Suppliers of CO_2) found at 40 CFR 98.420 – 98.428.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report greenhouse gas (GHG) emissions under a different subpart. Please refer to the relevant Information Sheet for a summary of the rule requirements for any other source categories located at the facility.



How Must GHG Emissions Be Calculated?

Reporters must calculate and report CO_2 process emissions from each NH_3 manufacturing unit by using one of two methods:

- Installing and operating a continuous emission monitoring system (CEMS) to measure combined process and combustion CO₂ emissions according to the requirements specified in 40 CFR Part 98, Subpart C.
- Calculating CO₂ process emissions using the equations provided in the rule for solid, liquid, and gaseous feedstocks, as applicable, along with the following measurements:
 - Continuous measurement of gaseous or liquid feedstock consumed (using a flow meter).
 - Monthly aggregate of solid feedstock consumed (using company records).
 - Carbon (C) content and average molecular weight of each feedstock consumed (using reports from your supplier).

However, if CO₂ process emissions from an NH₃ manufacturing unit are vented through the same stack as any combustion unit or process equipment that reports CO₂ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in Subpart C, then the owner or operator must report under Subpart G, the combined stack emissions from that stack, instead of using the calculation procedures described above.

A checklist for data that must be monitored is available here: [Subpart G Monitoring Checklist](#).



What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR 98.3(c), the following must be reported under the circumstances indicated:

- If a CEMS is used to measure CO₂ emissions, under Subpart G report the relevant information required by 40 CFR 98.33(a)(4), Subpart C for the Tier 4 Calculation Methodology and the following information:
 - Annual quantity of each type of feedstock consumed for NH₃ manufacturing (standard cubic feet (scf) of gaseous feedstock or gallons (gal) of liquid feedstock or kilograms (kg) of solid feedstock).
 - Method used for determining quantity of feedstock used.
 - Annual NH₃ production (metric tons, sum of all process units reported within Subpart G).
- If a CEMS is not used to measure emissions, report the following information for each unit:
 - Annual CO₂ process emissions (metric tons) for each NH₃ manufacturing unit.
 - Annual quantity of each type of feedstock consumed for NH₃ manufacturing (scf of gaseous feedstock or gal of liquid feedstock or kg of solid feedstock).
 - Method used for determining quantity of monthly feedstock used.
 - Whether monthly C content for each feedstock is based on reports from the supplier or analysis of C content.
 - If monthly C content of feedstock is based on analysis, the test method used.
 - Sampling analysis results of C content of feedstock as determined for quality assurance/quality control (QA/QC) of supplier data under 40 CFR 98.74(e).
 - Annual average C content of each type of feedstock consumed.
 - Annual CO(NH₂)₂ production (metric tons) and method used to determine CO(NH₂)₂ production.
 - Annual CO₂ emissions (metric tons) collected from NH₃ production and consumed on-site for CO(NH₂)₂ production and the method used to determine the CO₂ consumed in CO(NH₂)₂ production.

- Annual NH₃ production (metric tons, sum of all process units reported within Subpart G).
- Annual quantity of methanol (CH₃OH) intentionally produced as a desired product, for each process unit (metric tons).
- Annual quantity of excess hydrogen (H₂) produced that is not consumed through the production of NH₃ (metric tons).



What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP as described at 40 CFR 98.3(g). Please see the [Subpart A Information Sheet](#) and 40 CFR 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart E are listed at 40 CFR 98.77.



When and How Must Reports Be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31st, unless the 31st falls on a Saturday, Sunday, or federal holiday, in which case reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system.

Additional information on setting up user accounts, registering a facility, and submitting annual reports is available on the [GHGRP Help webpage](#).



When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 CFR 98.2(i)) and the [Subpart A Information Sheet](#).



For More Information

For additional information on Subpart G, please visit the [Subpart G webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: GHGreporting@epa.gov.

This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.