



Interstate Natural Gas Association of America

March 15, 2021

Via www.regulations.gov and email

U.S. Environmental Protection Agency
Attention Docket ID Number EPA-HQ-OAR-2021-0008
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Docket ID No. EPA-HQ-OAR-2021-0008 – “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019,” 86 Fed. Reg. 28 (Feb. 12, 2021)

Dear Docket Clerk:

The Interstate Natural Gas Association of America (“INGAA”), a trade association representing the interstate natural gas pipeline industry, respectfully submits these comments in response to the Environmental Protection Agency’s (“EPA”) notice of document availability and request for comments on the draft, “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019” (“Draft Inventory Report”). EPA has requested recommendations for improving the overall quality of the inventory report which will be finalized in April 2021, as well as subsequent inventory reports.

INGAA’s member companies transport more than 95 percent of the nation’s natural gas, through approximately 200,000 miles of interstate natural gas pipelines. INGAA’s members have reported data under EPA’s Greenhouse Gas Reporting Rule (“GHGRP”) since 2011. INGAA’s comments focus on the inventory for the transmission and storage (“T&S”) segment, particularly EPA’s request for feedback on potential changes for estimating leak emissions from natural gas storage wells.

In November 2020, EPA released a document¹ (the “November Memo”) describing potential updates to the annual inventory estimation method for methane emissions from underground storage well leaks. EPA solicited feedback on storage well emission factors, activity data, and the methodology used to scale activity data from year to year. INGAA has provided feedback below on each of these issues. In addition, this letter provides recommendations regarding methodologies for scaling transmission compressor station counts to avoid inappropriately implying an increase in compressor station emissions, as well as modifying the emission factor (“EF”) used for pipeline blowdowns.

¹ “Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2019: Updates Under Consideration to Natural Gas Underground Storage Well Emissions,” U.S. EPA (Nov. 2020).

1. Storage wells – Emission factors: INGAA recommends updating the estimate for underground storage well leak emissions by updating the population-based emissions factors from recent GSI tests.

Since the inception of the annual inventory report, EPA has relied on emission factors developed in the 1990s from the EPA/Gas Research Institute (GRI) study² (“EPA/GRI Study”) of methane emissions from natural gas operations. The November Memo provides updated EFs for storage well leak emissions based on a Department of Energy (“DOE”) sponsored study conducted by GSI Environmental (“GSI Study”), and EPA requests feedback on the most appropriate EFs to apply to storage wells.

INGAA supports updating the emissions estimate for storage wells using updated EFs from the GSI study. Well-level EFs can be used, because higher quality storage well-counts are now available, as discussed below.

2. Storage wells – Activity data: Rather than estimating storage well counts, “activity data” for storage wells should be based on data published by PHMSA.

For natural gas operations, EPA frequently bases activity data (e.g., facility or equipment counts or other statistics such as miles of pipe) on data available from the DOE Energy Information Administration (“EIA”) or Department of Transportation (“DOT”) Pipeline and Hazardous Materials Safety Administration (“PHMSA”). For storage wells emission estimates, EPA has relied on activity data from the EPA/GRI Study that is adjusted from year-to-year. The November Memo requests feedback on updating the methodology for estimating storage well counts, but EPA did not mention a superior information source: PHMSA data. In recent years, PHMSA Form 7100.4 has required reporting of underground storage, including well counts. Data are available for 2017 through 2019.³

Activity data based on EIA or PHMSA reports are a better option than using a historical value that is updated annually using a proxy like changes in natural gas usage. Since the PHMSA report is relatively new, EPA may not have considered or been aware of this data source. INGAA recommends relying on this new PHMSA data source for “storage well count” activity data.

3. Storage wells – Activity data time series estimate (i.e., year-to-year scaling): EPA should use actual storage well counts available from PHMSA since 2017.

For the annual inventory time series, EPA can rely on the original well counts from the EPA/GRI Study, and interpolate linearly from 1990 to 2017. When available, INGAA strongly recommends using reported activity data rather than conducting annual adjustments using a proxy parameter (e.g., EPA has adjusted the historical well count based on annual residential gas use). Therefore, for future estimates, PHMSA reported data should be used to update storage well counts.

Similarly, EPA can scale the storage well EFs by using the historical EF in 1990, applying the new EF for the updated estimate, and scaling linearly for the interim years. Notably, since

² EPA-600/R-96-080(a-o). “*Methane Emissions from the Natural Gas Industry*,” Volumes 1-15, EPA/GRI. (1996).

³ See “Underground Natural Gas Storage (UNGS) Facility (ZIP)” link at: <https://www.phmsa.dot.gov/data-and-statistics/pipeline/gas-distribution-gas-gathering-gas-transmission-hazardous-liquids>.

storage well count data are now available annually through PHMSA, the emission estimate can be conducted using storage well counts (i.e., storage well-level data) and not “rolled up” alternatives being considered by EPA such as a station-level EF with storage station count (and assumptions regarding storage well counts per station) as the activity data.

4. Activity data time series estimates (e.g., year-to-year scaling) for compressor stations: EPA should revise its methodology for annually adjusting compressor station counts based on Subpart W reporting facility counts to avoid erroneously reporting that compressor station emissions have increased.

For natural gas transmission compressor stations, a number of emission estimates are directly or indirectly related to compressor station counts from Subpart W facilities. A “station-based” EF is used for emissions from station leaks and station blowdowns, and the station count also affects pneumatic device activity data (device counts by type). In the past, annual activity data adjustments were often tied to changes in pipeline miles reported to PHMSA. In 2016, EPA introduced a change to station counts based on a ratio of compressor stations that do or do not report under Subpart W of the GHGRP. That one-time review concluded that in 2012, 28.4% of transmission stations reported under the GHGRP. The other 72% of stations had emissions below the reporting threshold. Since then, EPA has used that same factor (i.e., $1/0.284 = 3.52$) to estimate annual compressor station counts in the time series. Assuming that the “2012 ratio” remains constant over time is a faulty assumption that should not be carried forward because, as further discussed below, it implies infrastructure and equipment changes that are *not* realistic.

The estimated station count affects the activity data applied to several important emission sources for the transmission segment: station leaks, reciprocating and centrifugal compressor leaks, station blowdowns, and pneumatic device counts. However, assuming that 3.52 factor is constant is inaccurate because year-to-year increases in the number of stations that report under the GHGRP is not due to new equipment, but rather due to facility-specific increases in “utilization” to address pipeline demands (i.e., increased operation of compressor drivers) that increase emissions of CO₂ from combustion such that certain facilities’ emissions now exceed the GHGRP reporting threshold. The current EPA approach has erroneously resulted in a false increase in compressor station counts (and related activity data for compressors and pneumatic devices) of nearly 40% since 2012. Using a higher compressor station count results in anomalies in activity data, such as annual increases in the estimated count of centrifugal compressors with wet seals, and annual increases in the estimated count of high-bleed pneumatic devices. Wet seal compressors have not been sold in the U.S. for many years, and high-bleed pneumatics have been phased out of the natural gas transmission segment, so these are obvious examples of errors. Similarly, U.S. station counts and reciprocating compressor counts are not increasing at the rate implied.

Since emission factors have remained constant for these years, the result is that transmission segment emissions estimates are *increasing*, and the Draft Inventory Report indicates a 6.3% increase in transmission segment methane emissions from 2018 to 2019, and a 27% increase since 2012. Since GHG emissions continue to be more closely scrutinized by agencies and third parties, this erroneous “paper increase” is very problematic and should be remedied.

Assuming that the 2012 count is established as the baseline, EPA should adopt an alternative approach for estimating station counts (and other related activity data). A more detailed analysis could be conducted by reviewing activities such as FERC actions (i.e., certificates required for

adding interstate natural gas transmission infrastructure). At this time, INGAA strongly recommends that the station count activity data since 2012 be revised. New pipeline infrastructure is a better indicator of facility changes than using GHGRP station counts as a proxy for infrastructure changes. Until a better alternative is identified, INGAA recommends that annual pipeline miles (currently included in EPA's dataset based on PHMSA data) be used to adjust compressor station counts since 2012.

5. For pipeline blowdowns, three years of quality data are now available from GHGRP Subpart W reporting. EPA should use a "rolling average" EF to smooth year-to-year variability and eliminate the EF from the initial reporting year.

Starting with the 2016 reporting year, pipeline blowdown emissions reporting was added to the GHGRP. In 2019, EPA updated the pipeline blowdown emissions EF used for 2016 and 2017 GHG inventories, and the Draft Inventory Report uses the annual EF value from the GHGRP for each year from 2016 through 2019. As an alternative, INGAA recommends using an average EF (e.g., 3- to 5-year rolling average) to minimize year-to-year variability. In addition, as discussed in INGAA's 2019 comments,⁴ INGAA recommends deleting the EF from the first GHGRP reporting year because the GHGRP allowed "best available monitoring methods" (BAMM) for the initial reporting year, and the dataset, individual pipeline data, and resulting EF appear anomalous when compared to other data.

For 2017 through 2019 reporting years, the annual pipeline blowdown methane emissions EF has been fairly consistent (613.6 – 659.6 kg/mile) and also agrees well with the historical EF (609.6 kg/mile) from the EPA/GRI study. The initial reporting year (2016) EF was much higher and should be eliminated from the dataset due to data quality concerns. In addition, as datasets grow, EPA often relies on the larger dataset. For example, Subpart W uses a three-year rolling average for reciprocating and centrifugal compressor EFs based on company measurements. Subpart W uses a 5-year average for leak EFs from distribution metering and gathering station surveys. To leverage a larger dataset and smooth year-to-year perturbations, INGAA recommends using a 3-year rolling average of the GHGRP Subpart W pipeline blowdown data as the annual inventory report EF for this source.

INGAA appreciates your consideration of these comments. Please contact me at 202-216-5955 or ssnyder@ingaa.org if you have any questions. Thank you.

Sincerely,



Sandra Y. Snyder
Vice President, Environment
Interstate Natural Gas Association of America

cc: Mausami Desai, U.S. EPA (via email)
Melissa Weitz, U.S. EPA (via email)

⁴ Docket ID No. EPA-HQ-OAR-2018-0853, INGAA Comments on EPA Annual Inventory Report for 1990 – 2017 (Mar. 14, 2019).