



www.onefuture.us

*Our Nation's Energy Future Coalition (ONE Future)
1200 Smith Street, Suite 900,
Houston, TX 77002
832-397-8501*

September 5, 2017

Climate Change Division
Office of Atmospheric Programs (MC-6202A)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20460
GHGInventory@epa.gov

Re: ONE Future Comments on Revisions Under Consideration for CO₂ Emissions from Natural Gas and Petroleum Systems in the 1990-2016 GHG Inventory

Dear EPA:

Our Nation's Energy Future Coalition, Inc. (ONE Future) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed revisions to CO₂ emission estimates from Natural Gas and Petroleum Systems in the national GHG Inventory. This letter focusses on the methodology memo "Updates for emissions estimates for CO₂ from Natural Gas and Petroleum Systems" provided by EPA following the June 22 stakeholder's workshop.

ONE Future is a unique coalition of leading companies¹ with operations across every part of the natural gas supply chain. Formed in 2014, ONE Future develops innovative policy and technology solutions to environmental and operational challenges across the natural gas industry. We believe natural gas has a foundational role in the energy transition to a lower carbon economy and with prudent development and distribution, we can provide safe, secure and stable energy source to the U.S. and the rest of the world. ONE Future member companies aspire to continuously improve the energy delivery efficiency of the natural gas supply chain by reducing total methane emissions to less than one percent of gross production, a scientifically developed performance-based target. Many of the activities aimed at reducing methane emissions have co-benefits of reducing CO₂ emissions as well. By promoting smarter policy approaches and working to identify solutions across every segment of the natural gas supply chain, our members can

¹ As of September 1, 2017, ONE Future members include: Apache, BHP Billiton, Hess, Statoil, Southwestern Energy, Kinder Morgan, TransCanada, Southern Company Gas, Summit Utilities and National Grid. More information can be found at <http://www.onefuture.us/>

deliver better results to their customers, increase value to their shareholders, and improve our environment.

EPA plans to revise CO₂ emission factors for certain production, natural gas processing, and transmission and storage segment emission sources using Subpart W data in the same manner as CH₄ emission factors are calculated. The new methodologies have significant impacts on CO₂ emissions estimates for the Natural Gas and Petroleum Systems emissions, with a proposed increase in CO₂ emissions of over 27 million metric tons, or nearly 11%, for Natural Gas and Petroleum Systems combined.

In summary, our comments focus on the use of the GHGRP data for developing CO₂ emission estimates for the national GHG inventory. ONE Future encourages EPA to consider scaling data for emission activities that are conducted regionally on a regional or basin-level basis. ONE Future requests that EPA present flaring emissions from transmission and storage operations with recognition of compression stations that serve both transmission and storage. It is also imperative that EPA review the GHGRP data for data quality issues and remove inconsistent or obvious incorrect data from any analyses.

We hope that the EPA considers these comments as they prepare the 2018 version of the GHG. Below you will find our detailed comments. We appreciate the opportunity to provide comments on behalf of the ONE Future Coalition. If you have any questions, please do not hesitate to contact me at 832-397-8501.

Sincerely,

A handwritten signature in cursive script that reads "Richard Hyde".

Richard Hyde

Executive Director
ONE Future Coalition Inc.

TABLE OF CONTENTS

Recommendation 1: National Emission Estimates Should Consider Regional Emission Activities.....	4
Recommendation 2: Flaring Emissions for Transmission Compressor Stations Need to be Presented/Discussed in Context with UnderGround Natural Gas Storage Facilities	4
Recommendation 3: EPA Must Conduct Data Quality Reviews of the GHGRP Data and Exclude Data Sources with Errors or Inconsistencies	5

RECOMMENDATION 1: NATIONAL EMISSION ESTIMATES SHOULD CONSIDER REGIONAL EMISSION ACTIVITIES

EPA’s emission estimation methodologies for associated gas venting and flaring, liquids unloading and miscellaneous flaring fail to recognize that these activities are concentrated in a few oil and gas production basins. For example, the need to vent or flare associated gas is driven by a lack of appropriate infrastructure to capture the produced gas. This is a dynamic situation that varies over time and across different locations based on characteristics of the production basins. Using the GHGRP emissions data reported for associated gas venting and flaring to develop an emission factor that is applied universally across the U.S. will over estimate CO₂ and CH₄ emissions. ONE Future recommends that EPA evaluate emissions from these sources on a regional or basin-level basis, and scale emissions to the national basis using regional emission factors and activity data.

RECOMMENDATION 2: FLARING EMISSIONS FOR TRANSMISSION COMPRESSOR STATIONS NEED TO BE PRESENTED/DISCUSSED IN CONTEXT WITH UNDERGROUND NATURAL GAS STORAGE FACILITIES

As shown in Table 1, EPA is proposing to add over 100,000 tonnes CO₂ emissions for flares at transmission compressor stations, and approximately 23,500 tonnes CO₂ emissions for flares at storage stations. ONE Future believes these emissions are misleading, indicating that flaring is much more prevalent at transmission compressor stations than underground natural gas storage facilities. This is not an accurate representation of the industry.

Table 1. Summary of GHG Inventory CH₄ and CO₂ Emissions for 2015

Onshore Natural Gas Transmission Compression							
GHGRP Total Compressor Stations	# Stations with Flares	Tonnes CH₄	Tonnes CO₂ in 2015 GHGI	CH₄ EF, kg/station	CO₂ EF, kg/station	GHGI Total # Compressor Stations	Projected GHGI CO₂ Emissions, tonnes CO₂
521	16	124.223	28,510.50	238.43	54,722.65	1834	100,361
Underground Natural Gas Storage							
GHGRP Total Storage Stations	# Stations with Flares	Tonnes CH₄	Tonnes CO₂ in 2015 GHGI	CH₄ EF, kg/station	CO₂ EF, kg/station	GHGI Total # Storage Stations	Projected GHGI CO₂ Emissions, tonnes CO₂
53	8	34.439	3,576.37	649.79	67,478.68	349	23,550

There is overlap between underground natural gas storage facilities and transmission compressor stations. In order for an underground storage facility to be able to inject and withdraw gas from the respective underground storage field, there has to be sufficient compression that is normally provided by a nearby transmission compressor station located along the route of a transmission pipeline. Many of these compressor stations that service the underground storage fields also require hydrocarbon liquids separation equipment, dehydration equipment, and flares because the majority of these fields are depleted oil & gas reservoirs and they are required to have flares for air emission control or odor control purposes.

When these facilities are reported in the GHGRP, the compressor stations that service underground storage fields might be classified as transmission compression as its primary function, but they also

function as compression for underground storage and most of these facilities require flares due to the reasons described above. It is uncertain whether the EPA can easily distinguish from the available GHGRP data whether a compressor station services an underground storage field or it is solely a transmission compressor station, where a facility functions as both transmission and storage. In general, however, the large majority (estimated at greater than 99 percent) of transmission compressor stations that have flares are likely servicing an underground storage field so the projected flaring emissions represented in the above table are more likely the reverse of what is presented and possibly an even greater amount associated with underground storage. ONE Future recommends that EPA include additional explanation about the use of flares and transmission compression at underground storage facilities compared to a typical transmission compressor station used solely for mainline compression without the need for liquids separation, dehydration, and flaring. This detail is needed to put the emissions in context so that emissions from flaring reported with transmission compressor stations are not misconstrued.

RECOMMENDATION 3: EPA MUST CONDUCT DATA QUALITY REVIEWS OF THE GHGRP DATA AND EXCLUDE DATA SOURCES WITH ERRORS OR INCONSISTENCIES

Despite steps conducted by EPA to screen GHGRP data and identify errors, significant data errors still exist in the Subpart W data. These errors and inconsistencies include:

- 21 data sets in the 2015 data for Associated Gas that report either wells that vented or flared, but report no corresponding volume of associated gas.
- 373 data sets in the 2015 data for reciprocating compressors in gas processing that indicate no measurement was conducted, but yet report a measured gas volume. 14 data sets for centrifugal compressors do the same.
- 192 data sets in the 2015 data for reciprocating compressors in gas processing that indicate that a measurement was conducted, but no flow rate is reported. 39 data sets for centrifugal compressors do the same.
- 7 data points for the years 2013 through 2015 report dehydrators gas throughputs that are larger than the total annual of natural gas processing in the U.S.
- 265 data points for gas processing compressors that report total hours operating in the various modes greater than 8760/8784 hours per year.

In addition, scatter plots of emissions data reveal data outliers that should be investigated. For example, Figure 1 plots CO₂ emissions reported for 2015 from flaring at gas plants. The highest emission gas plant represents almost 11% of the total national CO₂ emissions from flaring at gas processing facilities.

Figure 1. 2015 GHGRP Reported CO₂ Emissions from Flaring at Gas Processing Plants

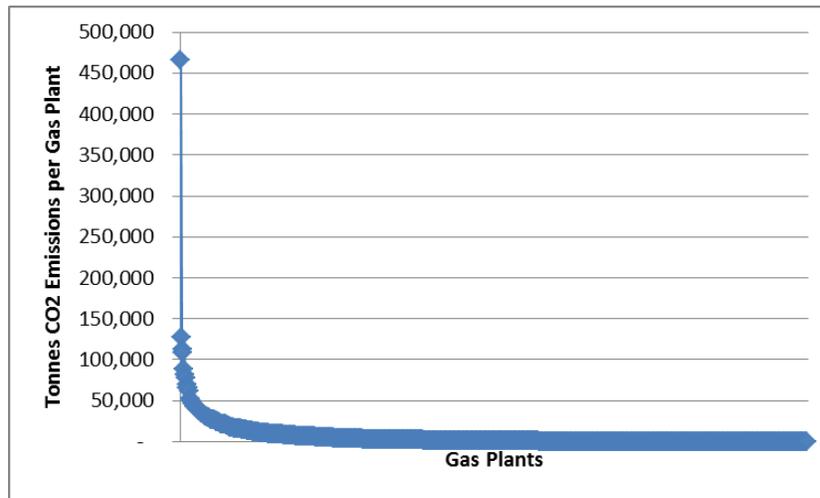
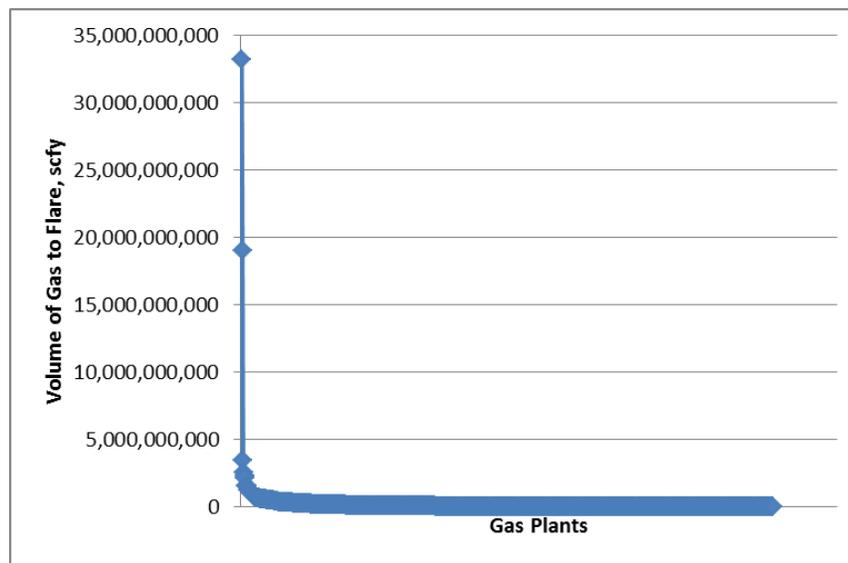


Figure 2 plots the reporting volumes of gas sent to flares at gas processing facilities, as reported through the GHGRP for 2015. The top two data points in this figure report volumes of gas to flare that are an order of magnitude higher than the next highest data point. These flare volumes are larger than the total volumes of gas processed for most states.

Figure 2. 2015 GHGRP Reported Volume of Gas to Flare at Gas Processing Plants



EPA's practice in developing emission estimates based on the GHGRP data is to use all of the available information. EPA has commented on several occasions that they do not exclude any data sources.

ONE Future recommends that EPA develop a transparent procedure for screening GHGRP data for errors and inconsistencies, that EPA identify which data points have quality issues and that EPA exclude data points with obvious errors or inconsistencies until reporters can provide corrected information. These steps are necessary to ensure that erroneous information is not used in developing national GHG emission estimates.