UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 21 2018

OFFICE OF
THE ADMINISTRATOR

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street North East
Washington, D.C. 20426

Dear Ms. Bose:

The U.S. Environmental Protection Agency (EPA) has reviewed the Federal Energy Regulatory Commission's (FERC) April 25, 2018 Notice of Inquiry (NOI) seeking input regarding the policy statement on the certification of new natural gas transportation facilities (Policy Statement, Docket No. PL18-1-000).

Through the NOI, FERC identified specific questions within the following four general areas: (1) the reliance on precedent agreements to demonstrate the need for a proposed project; (2) the potential exercise of eminent domain and landowner interests; (3) the Commission's evaluation of alternatives and environmental impacts under NEPA and the Natural Gas Act (NGA); and (4) the efficiency and effectiveness of the Commission's certificate processes. Overall, EPA recommends that FERC continue to integrate the pre-filing process conducted under the NGA with scoping for the subsequent NEPA analysis to incorporate stakeholder input and identify environmental issues and information needs early in the process. This would reduce project-specific conflicts and delays, and aligns with the approach to streamline major infrastructure projects, such as natural gas pipelines, outlined under EO 13807 *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure*.

EPA is providing comments focused on addressing specific questions FERC identified within the NOI related to the evaluation of environmental impacts, including development of alternatives, assessment of cumulative impacts, and tools for quantifying and monetizing greenhouse gas (GHG) emissions changes. More detailed recommendations on these issues are provided in the enclosed detailed comments.

We have a very strong collaborative relationship with your Office of Energy Projects and remain committed to early engagement and technical assistance as needed to help FERC successfully complete their environmental reviews through this opportunity to comment on the NOI. Should you have questions regarding our comments, the staff contact is Jessica Trice. She may be reached at (202) 564-6646 or via email at trice.jessica@epa.gov.

Sincerely,

Robert Tomiak
Director
Office of Federal Activities

Enclosure – Detailed Comments

EPA Detailed Comments on FERC NOI for Policy Statement on New Natural Gas Transportation Facilities

EPA's detailed comments provided below are focused on the agency's areas of jurisdiction and special expertise and address the specific questions FERC identified regarding the evaluation of alternatives and the environmental impacts of a proposed project.

Alternatives

EPA recommends FERC's Policy Statement address the importance of the NEPA analysis including both an appropriate need statement and detailed consideration and analysis of a reasonable range of alternatives that meet the established purpose and need under NEPA. This includes a robust set of system, design and route alternatives, compressor station siting alternatives, and alternatives focused on maximizing co-location of pipelines and associated ancillary facilities with highways and other existing rights-of-way. Consideration of alternatives that include these components can lead to the identification of greater opportunities to avoid and minimize impacts to important resources and may reduce the cost of environmental mitigation and compliance. In addition, EPA recommends the Policy Statement address how alternatives will be evaluated to determine which alternatives remain for further detailed study, including an explanation of how advantages and disadvantages of each alternative are considered in decision-making.

Interstate pipeline projects often require permits or approvals from other Federal agencies which may require an environmental review. To the extent practical and consistent with EO 13807, we recommend FERC's Policy Statement encourage that the purpose and need and alternatives analysis developed under NEPA meet the requirements of all Federal agencies issuing permits and/or approvals.

Cumulative Impacts

EPA recommends FERC's Policy Statement ensure that a comprehensive cumulative impact analysis for a pipeline facility be included as part of the NEPA analysis. EPA recommends FERC describe the inter-related network of existing and proposed pipelines and the associated cumulative impacts. When possible, we also recommend that any cumulative impact assessment include consideration of impacts from all past, present and reasonably foreseeable future projects.

In areas where rapid natural gas development has the potential to contribute to cumulative impacts, EPA recommends consideration of additional avoidance and minimization efforts, as well as looking for additional opportunities to collocate. Presenting collocation rate by county or watershed may be a useful way to begin considering avoidance and minimization efforts in areas with cumulative impact potential. For example, a regional impacts analysis may include consideration of impacts at the individual watershed scale, including impacts to streams from pipeline crossings, surface and groundwater withdrawal, water quality and high quality and/or sensitive aquatic resources for the construction, operation and decommissioning of a pipeline project.

Greenhouse Gas (GHG) Emissions

In situations where FERC decides to conduct analyses of GHG emissions impacts of proposed projects, EPA recommends a number of available tools that can be used. The impact of a proposed project on GHG emissions will depend on a number of factors including the potential market impacts of the project. Economic modeling tools to conduct analysis of energy markets are available and have been used by a wide variety of stakeholders for numerous purposes (e.g., natural gas sector models linked to electric power sector models). If FERC uses these tools to model the reasonably foreseeable energy market impacts of a proposed project, methods are available to quantify the GHG emissions associated with the energy system outcomes expected under the project and the no action alternative. For example, to calculate the upstream and downstream GHG emissions associated with a proposed natural gas pipeline, EPA recommends FERC may consider the following existing tools and information:

Quantifying Upstream Emissions[1]*:*

EPA has emission factors and methods available to estimate emissions from those activities through the U.S. Greenhouse Gas Inventory and the Greenhouse Gas Reporting Program.

U.S. Greenhouse Gas Inventory

- EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks (GHG Inventory) tracks national-level greenhouse gas emissions and sinks by source, economic sector, and greenhouse gas going back to 1990.
- National total emissions, emission factors, and activity data for upstream sources at an activity level are available here Annex 3.6: Methodology for Estimating CH4 and CO2 Emissions from Natural Gas Systems (XLSX).
- Additional details on methodologies are available in the U.S. Greenhouse Gas Inventory https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks and on EPA's web page on updates to estimates for natural gas and petroleum systems in the GHG Inventory https://www.epa.gov/ghgemissions/natural-gas-and-petroleum-systems.
- Many emission factors and activity data information in the GHG Inventory are developed from data reported to the Greenhouse Gas Reporting Program

Greenhouse Gas Reporting Program

- EPA's Greenhouse Gas Reporting Program tracks facility-level emissions from the largest sources of greenhouse gas emissions in the U.S.
- Methods and emission factors to calculate emissions can be found in Subpart W—Petroleum and Natural Gas Systems, of the Mandatory Greenhouse Gas Reporting regulation, available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=2e1fb6c9915b39409426da07ee9dc943&n=sp40.21.98.w&r=SUBPART&ty=HTML.
- Reported data can be found at https://www.epa.gov/ghgreporting/ghg-reporting-program-data-sets.

[1] Sources might include activities in the exploration and production through transmission and storage segments.

Quantifying Downstream Emissions[2]*:*

The basic approach or methodology for calculating emissions is: Eg = AD × EFg

where,
E = Emissions
g = Gas
AD = Activity data
EF = Emission factor

The US National GHG Inventory has emission factors for natural gas combustion emissions

- The Carbon emission factor varies over time but for the latest inventory is: 14.46 (MMT C/QBtu). Documented in Annex 2 of our Inventory report: https://www.epa.gov/sites/production/files/2018-01/documents/2018_annex_2.pdf
- CH4 and N2O factors vary by combustion type and can be found in our Inventory report Annex 3: https://www.epa.gov/sites/production/files/2018-01/documents/2018_annex_3_-_part_a.pdf
- The Activity Data used in the calculation of natural gas is generally the quantity of gas used in energy units.

The National Inventory Fast Facts document highlights national level GHG emissions associated with natural gas use and includes emission factor data as well as national totals for natural gas emissions which could be used to determine relative impact of emissions for a given project. It is available here: https://www.epa.gov/sites/production/files/2018-04/documents/9509_fastfacts_20180410v2_508.pdf

There are also online calculation tools available to help calculate GHG emissions associated with a known amount of energy use (natural gas throughput, etc.):

- Personal Greenhouse Gas Equivalencies Calculator: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
- Corporate Simplified GHG Emissions Calculator: https://www.epa.gov/climateleadership/center-corporate-climate-leadership-simplified-ghg-emissions-calculator

Monetizing Impacts from GHG Emissions:

Estimates of the social cost of carbon and other greenhouse gases (SC-GHG) allow analysts to incorporate the societal value of changes in carbon dioxide and other GHG emissions into benefit-cost analyses (BCA) of actions that have small, or marginal, impacts on cumulative global emissions. Estimates of SC-GHG are used in Federal regulatory analysis with the acknowledgement of the many uncertainties involved and with a clear understanding that they should be updated over time to reflect increasing knowledge of the science and economics of climate impacts. In cases where FERC determines that a monetary comparison of the benefits received by society to the costs imposed on society is appropriate in evaluating a proposed

[2] Include combustion GHG emissions from natural gas use, primarily CO_2 but also CH_4 and N_2O.

project and potential alternatives, we recommend taking into account established practices for BCA (for example, see OMB's *Circular A-4* and references therein[3]).

By extension, when a BCA is conducted it is appropriate to use estimates of the SC-GHG that reflect the best available science and methodologies to incorporate the value to society of *net changes in direct and indirect GHG emissions* resulting from a proposed project (i.e., relative to a no action alternative). If it is not possible to develop a reasonable estimate of the net change in emissions due to the proposed project (e.g., that reflects how carbon-based energy production and demand from competing markets might change), then SC-GHG estimates will not be useful for assessing the value to society of GHG changes in the BCA. A discussion of the SC-GHG estimates used in recent federal regulatory BCA can be found in EPA's supporting documents for the proposed rule, "Oil and Natural Gas: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements."[4] When FERC decides to monetize benefits and costs, just as with tools to quantify emissions, we recommend disclosing the assumptions (e.g., discount rates) and levels of uncertainty associated with such analysis. Finally, even absent a full BCA, SC-GHG estimates may be used for project analysis when FERC determines that a monetary assessment of the impacts associated with the estimated net change in GHG emissions provides useful information in its environmental review or public interest determination.

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[3] https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf. As noted in *Circular A-4*:

> Sound quantitative estimates of benefits and costs, where feasible, are preferable to qualitative descriptions of benefits and costs because they help decision makers understand the magnitudes of the effects of alternative actions....
>
> ...You should monetize quantitative estimates whenever possible. Use sound and defensible values or procedures to monetize benefits and costs, and ensure that key analytical assumptions are defensible. If monetization is impossible, explain why and present all available quantitative information. (OMB 2003, p. 26-27)

[4] https://www.epa.gov/sites/production/files/2017-11/documents/oilgas_memo_proposed-stay_2017-10.pdf