



Institute for
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

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To: Office of Energy Projects, Federal Energy Regulatory Commission, Department of Energy

Subject: Failure to Project Indirect Greenhouse Gas Emissions or Monetize Emissions in Environmental Assessment for the North Bakken Expansion Project (Docket Nos. CP20-52-000, CP20-52-001)

The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”)¹ respectfully submits the following comments on the Federal Energy Regulatory Commission’s (“FERC” or “the Commission”) Environmental Assessment for the North Bakken Expansion Project (“Environmental Assessment”).² Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity regularly submits comments to federal agencies on the social cost of greenhouse gases and assessments under the National Environmental Policy Act (“NEPA”) and the Natural Gas Act (“NGA”).

FERC states in the Environmental Assessment that the North Bakken Expansion Project (the “Project”) will “provide incremental firm transportation design capacity of 250,000 million cubic feet per day . . . of natural gas”³ (i.e. 250 billion), but that is an unusually high total and likely a typographical error.⁴ Most likely, it appears that FERC meant to say that the Project would provide for the transport of 250,000 thousand cubic feet per day (i.e. 250 million), or 250,000 dekatherms.⁵ Assuming that to be the case, basic calculations demonstrate that the combustion of this volume of natural gas could result in the emission of nearly 5 million metric

¹ This document does not purport to represent the views, if any, of New York University School of Law.

² FED. ENERGY REG. COMM’N, NORTH BAKKEN EXPANSION PROJECT ENVTL. ASSESSMENT (Docket Nos. CP20-52-000, CP20-52-000) (Dec. 2020) [hereinafter “EA”].

³ *Id.* at 1.

⁴ For instance, FERC projected that a recent pipeline expansion project would transport an additional 495,000 dekatherms per day of natural gas, which is the equivalent of 495 million cubic feet. FED. ENERGY REG. COMM’N, NORTH BAJA XPRESS PROJECT DRAFT ENVTL. ASSESSMENT 70 (Docket No. CP20-27-000) (Sept. 2020).

⁵ If the Commission truly meant 250,000 million cubic feet per day, as the EA reports, then all of the downstream-emission and social-cost projections that we make in this document should be multiplied by 1,000.

tons of downstream emissions in carbon-dioxide equivalence per year—a figure that FERC fails to disclose.⁶ This is a massive amount of emissions that vastly exceeds the annual operational emissions from the Project that FERC does disclose, which total approximately 85,000 metric tons per year.⁷ FERC’s failure to estimate and disclose the Project’s downstream and other indirect emissions violates NEPA and the NGA.

Moreover, both the quantified and unquantified emissions from the Project will produce substantial climate-related damages such as sea-level rise, greater incidence of coastal storms and extreme weather events, and human health impacts and mortality from heat-related illnesses. While NEPA and the NGA require FERC to disclose and assess the significance of the contributions of its actions to such environmental impacts—and an available metric, the social cost of greenhouse gases, allows the agency to do just that—FERC fails to estimate such actual, real-world climate impacts. Yet, as the social cost metrics reveal, approval of the proposed action would likely result in over \$275 million in annual climate costs from downstream emissions.⁸ This substantial cost bears heavily on assessing whether the Project is in fact in the public interest, and FERC’s failure to consider the severity and magnitude of the Project’s climate impacts is insufficient under NEPA and the NGA.

By measuring only a small fraction of the Project’s greenhouse gas emissions and failing to assess the significance of the emissions it does quantify, the Commission lacks a reasonable basis to conclude that the Project will have “no significant impact” on the environment.⁹ Should the Commission approve the Project based on such a cursory review, its determination that the Project is in the public interest would therefore be arbitrary and capricious.

Upstream and Downstream Emissions

Natural-gas transport projects regularly and foreseeably produce emissions beyond so-called “direct emissions”—i.e., those directly emitted from the construction and operation of transport infrastructure. Pipelines also produce two types of indirect emissions, widely referred to as “upstream” and “downstream” emissions.

“Upstream” emissions are greenhouse gases that result from the production of natural gas, including emissions spewed by production equipment and fugitive methane that escapes into the atmosphere through leaks or intentional release.¹⁰ Because transport projects make it cheaper

⁶ The 250,000 dekatherms per day that the Project would transport (i.e., 2.5 million therms) is equivalent to 13,228 metric tons of carbon dioxide equivalent per day. *See* EPA Greenhouse Gases Equivalencies Calculator, *available at*: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>. Multiplying that total by 365 equals 4.828 million metric tons per year. Note that these calculations do not endorse FERC’s estimates of natural gas transportation.

⁷ EA at 131.

⁸ The 2016 Interagency Working Group’s central estimate of the social cost of carbon for year 2025 emissions is \$46 in 2007\$; adjusted for inflation, that equals approximately \$57 in 2019\$. 4.828 million tons of CO₂e* \$57 = \$275.2 million. In a proper cost-benefit analysis, that calculation of costs from year 2025 emissions would be discounted back to present value.

⁹ EA at 182.

¹⁰ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018* at 3-85 (2020) (describing emissions associated with production), *available at* <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf>.

to supply natural gas, they make natural gas more competitive in the market and therefore drive an increase in natural-gas production and associated emissions. As the U.S. Court of Appeals for the Ninth Circuit recently explained, a reduction in oil prices predictably means that “consumers will buy and consume more oil.”¹¹ A natural-gas pipeline thus predictably causes upstream emissions, and numerous tools are available to calculate these emissions.

“Downstream” emissions are those unleashed by the combustion of natural gas when converted into energy. Such combustion is a natural-gas transport project’s “entire purpose,”¹² as the “vast majority, 97 percent, of all natural gas consumed [domestically] is combusted.”¹³ Total combustion-related emissions can be calculated from a pipeline’s transport,¹⁴ and typically far surpass the transport project’s direct emissions.¹⁵

The NGA and NEPA require FERC to consider a pipeline’s total emissions—not just direct emissions—before approving a project. The NGA requires FERC to consider such emissions because FERC must ensure a project is “required by the present or future public convenience and necessity.”¹⁶ This determination requires FERC to “balance the public benefits against the adverse effects of the project . . . including adverse environmental effects”—requiring it to fully assess the “environmental effects of pipelines it approves,” including indirect effects like downstream emissions.¹⁷ NEPA also requires FERC to meaningfully consider total emissions, as part of the hard look agencies must take at environmental consequences when considering major projects.¹⁸

Yet confronted with its statutory obligations to consider both upstream and downstream greenhouse gas emissions, the Commission quantifies only the Project’s direct emissions from construction and operation, and hardly even mentions the possibility of upstream or downstream emissions. Such bare-bones consideration is clearly insufficient. And insofar as the Commission believes that it cannot quantify the upstream and downstream emissions for the Project—as it has alleged for previous natural-gas transportation projects—it is mistaken.

With regard to upstream emissions, other agencies use models to predict how a project will affect the national energy mix and associated emissions. For instance, the Bureau of Ocean

¹¹ *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 736 (9th Cir. 2020).

¹² *Sierra Club v. FERC*, 867 F.3d 1357, 1372 (D.C. Cir. 2017) (“*Sabal Trail*”).

¹³ *Tennessee Gas Pipeline Co., LLC*, 170 FERC ¶ 61,142, P 8 (Feb. 21, 2020) (*Glick, Comm’r, dissenting in part*).

¹⁴ See EPA, *Greenhouse Gas Equivalencies Calculator—Calculations and References*, <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references> (last updated May 27, 2020).

¹⁵ James Bradbury et al., Dep’t of Energy, *Greenhouse Gas Emissions and Fuel Use Within the Natural Gas Supply Chain* 4 (2015) (attributing roughly 80 percent of all greenhouse emissions generated by natural-gas supply chain to combustion).

¹⁶ *Sabal Trail*, 867 F.3d at 1379 (quoting 15 U.S.C. § 717f(e)).

¹⁷ *Id.* at 1373 (internal quotation marks omitted).

¹⁸ *Id.* at 1373–74; see also *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1082 (9th Cir. 2011) (requiring agency to consider upstream emissions from coal production due to construction of coal railroad). See generally *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983) (mandating “hard look” assessment under NEPA).

Energy Management uses MarketSim, “a relatively simple partial-equilibrium model of U.S. energy markets” that “models the supply and demand of multiple energy resources (coal, natural gas, oil) and energy use by four domestic sectors (residential, commercial, industrial, and transportation) at the national scale” to assess the impacts of proposed changes to the energy mix.¹⁹ The Energy Information Administration, Surface Transportation Board, and other government offices have all used NEMS, “a general equilibrium electricity model” to capture effects on the global electricity market.²⁰ And the Environmental Protection Agency makes use of a similar model known as the Integrated Planning Model.²¹

With regard to downstream emissions, the U.S. Court of Appeals for the D.C. Circuit has explained that FERC must “at least *attempt* to obtain the information necessary” to enable “reasonable forecasting” of emissions.²² While information about the end use of the transported gas would enable such forecasting, numerous agencies simply apply the “full burn” assumption—*i.e.*, that a project’s full capacity will be used, with all fossil fuel combusted.²³ And the D.C. Circuit has required FERC to apply this approach unless more specific information is available.²⁴ Here, as noted above, that approach (which was performed by the undersigned, not the Commission) finds that the Project will emit nearly 5 million metric tons of carbon dioxide annually in downstream emissions.²⁵ Thus, the Project’s downstream emissions easily eclipse its direct emissions, and demonstrate the inadequacy of FERC’s decision to consider only direct emissions.

In disregarding the Project’s upstream and downstream emissions, FERC fails to capture the Project’s full environmental effects. As a result, the Commission cannot reasonably determine that the Project is “required by the present or future public convenience and necessity,”²⁶ nor can it fulfill NEPA’s twin aims to consider and disclose all significant environmental impacts.²⁷ Should it continue to disregard these effects, rather than using available tools to evaluate them, FERC’s approval of the Project would be arbitrary and capricious.

¹⁹ BOEM, *Consumer Surplus and Energy Substitutes for OCS Oil and Gas Production: The 2015 Revised Market Simulation Model (MarketSim)* (2015), available at <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Leasing/Five-Year-Program/2017-2022/Market-Sim-Model.pdf>. See also Peter Howard, Inst. for Pol’y Integrity, *The Bureau of Land Management’s Modeling Choice for the Federal Coal Programmatic Review* 6 (2016) (“Modeling Choice”), available at https://policyintegrity.org/files/publications/BLM_Model_Choice.pdf.

²⁰ EIA, *Coal Market Module of the National Energy Modeling System: Model Documentation 2020* (2020), available at [https://www.eia.gov/outlooks/aeo/nems/documentation/coal/pdf/m060\(2020\).pdf](https://www.eia.gov/outlooks/aeo/nems/documentation/coal/pdf/m060(2020).pdf); see also *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 555 (8th Cir. 2006) (discussing Board’s use of NEMS); *Modeling Choice* at 8 (highlighting other uses).

²¹ EPA, *Integrated Planning Model (IPM) Results Viewer*, <https://www.epa.gov/airmarkets/integrated-planning-model-ipm-results-viewer> (last updated Mar. 6, 2020); *Modeling Choice* at 10–11.

²² *Birckhead v. FERC*, 925 F.3d 510, 520 (D.C. Cir. 2019).

²³ Jayni Hein et al., Inst. for Pol’y Integrity, *Pipeline Approvals and Greenhouse Gas Emissions* 24 (2019), available at https://policyintegrity.org/files/publications/Pipeline_Approvals_and_GHG_Emissions.pdf.

²⁴ *Sabal Trail*, 867 F.3d at 1374.

²⁵ See *supra* note 6 and accompanying text.

²⁶ 15 U.S.C. § 717f(e).

²⁷ *Balt. Gas & Elec. Co.*, 462 U.S. at 97.

Environmental Impacts from Greenhouse Gas Emissions

While FEREC’s failure to evaluate the vast majority of the Project’s emissions is unlawful by itself, the Commission compounds its error by failing to meaningfully evaluate the climate-related harms from the emissions it does consider.

Without assessing the impact of the Project’s emissions on climate changes and resulting health and welfare harms such as mortality or property damages, the Environmental Assessment nonetheless concludes that such emissions would have no significant impact on the environment. This cursory and conclusory assessment does not satisfy the Commission’s obligations under the NGA and NEPA to meaningfully assess the significance of environmental harms including effects on climate change. And it disregards an available tool—the social cost of greenhouse gases—that allows for such an assessment.

Beginning with NEPA, mere quantification of greenhouse gas emissions is insufficient without an assessment of the harm that those emissions will cause. NEPA requires a “hard look” at both beneficial and adverse effects of each alternative option for major federal government actions. The U.S. Supreme Court has called the disclosure of impacts the “key requirement of NEPA,” and held that agencies must “consider and disclose the *actual environmental effects*” of a proposed project in a way that “brings those effects to bear on [the agency’s] decisions.”²⁸ The “impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires,” and it is arbitrary and capricious not to “provide the necessary contextual information about the[se] cumulative and incremental environmental impacts.”²⁹

The tons of greenhouse gases emitted by the Project (both directly and indirectly through upstream and downstream emissions) are not the “actual environmental effects” that must be assessed under NEPA. Rather, the actual effects are the incremental climate impacts caused by those emissions, including property lost or damaged by sea-level rise, coastal storms, flooding, and other extreme weather events, and human health impacts including mortality from heat-related illnesses and changing disease vectors like malaria and dengue fever.³⁰ Simply quantifying emissions is not enough: By calculating only the tons of greenhouse gases emitted, an agency fails to meaningfully assess the actual incremental impacts to property, human health,

²⁸ *Balt. Gas & Elec. Co.*, 462 U.S. at 96.

²⁹ *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008); *see also id.* (“[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency’s] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming.”); *Border Power Plant Working Grp. v. U.S. Dep’t of Energy*, 260 F. Supp. 2d 997, 1028–29 (S.D. Cal. 2003) (failure to disclose project’s indirect carbon dioxide emissions violates NEPA).

³⁰ For a more complete discussion of actual climate effects, including air quality mortality, extreme temperature mortality, lost labor productivity, harmful algal blooms, spread of West Nile virus, damage to roads and other infrastructure, effects on urban drainage, damage to coastal property, electricity demand and supply effects, water supply and quality effects, inland flooding, lost winter recreation, effects on agriculture and fish, lost ecosystem services from coral reefs, and wildfires, *see* EPA, *Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment* (2017); U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment* (2017); EPA, *Climate Change in the United States: Benefits of Global Action* (2015); Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for U.S. Coastal Real Estate* (2018).

productivity, and so forth.³¹ To provide an analogous example, just quantifying the acres of timber to be harvested or the miles of road to be constructed does not constitute a “description of *actual* environmental effects,” even when paired with a qualitative “list of environmental concerns such as air quality, water quality, and endangered species,” when the agency fails to assess “the degree that each factor will be impacted.”³²

Turning to the NGA, likewise, Section 7 of that Act permits FERC to approve the construction of natural gas facilities only if the project is “required by the present or future public convenience and necessity.”³³ Such a determination requires FERC to adequately consider a project’s environmental impacts, including climate consequences.³⁴ And such an assessment requires more than a “passing reference to relevant factors,”³⁵ but rather requires FERC to meaningfully and rationally consider all “relevant factors . . . within the scope of the authority delegated to the agency by the statute.”³⁶ FERC cannot reasonably make this determination if it simply lists the volume of emissions without any meaningful consideration of the impacts that those emissions will have on the climate. Indeed, it would be the hallmark of arbitrary-and-capricious decisionmaking for FERC to declare the Project to be in the public interest without carefully assessing its impacts on human health, extreme weather events, property damage, and other devastating impacts posed by climate change.³⁷

The Commission’s failure to meaningfully consider the impact of the Project’s greenhouse gas emissions on climate damages is particularly arbitrary and irrational because an available and widely-used tool—the social cost of greenhouse gases—allows for precisely such an assessment. The social cost of greenhouse gases methodology calculates how the emission of

³¹ See, e.g., *Ctr. for Biological Diversity*, 538 F.3d at 1216–17 (rejecting analysis under NEPA when agency “quantifie[d] the expected amount of [carbon dioxide] emitted” but failed to “evaluate the incremental impact that these emissions will have on climate change or on the environment more generally,” noting that this approach impermissibly failed to “discuss the *actual* environmental effects resulting from those emissions” or “provide the necessary contextual information about the cumulative and incremental environmental impacts” that NEPA requires); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014) (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); *Mont. Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”).

³² *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (“A calculation of the total number of acres to be harvested in the watershed is . . . not a sufficient description of the actual environmental effects that can be expected from logging those acres.”).

³³ 15 U.S.C. § 717f(e).

³⁴ See, e.g., *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (explaining that “FERC could deny a pipeline certificate [under Section 7 if] the pipeline would be too harmful to the environment,” and proceeding to assess the adequacy of the Commission’s analysis of greenhouse gas emissions).

³⁵ *Mo. PSC v. FERC*, 234 F.3d 36, 41 (D.C. Cir. 2000).

³⁶ *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

³⁷ *Rio Grande LNG, LLC*, 169 FERC ¶ 61,131 (Nov. 22, 2019) (*Glick, Comm’r, dissenting*), at P 2 (“Claiming that a project generally has no significant environmental impacts while at the same time refusing to assess the significance of the project’s impact on the most important environmental issue of our time is not reasoned decisionmaking.”).

an additional unit of greenhouse gases affects atmospheric greenhouse concentrations, how that change in atmospheric concentrations changes temperature, and how that change in temperature incrementally contributes to the above list of economic damages.³⁸ The social cost of greenhouse gases tool therefore captures the factors that actually affect public welfare and assesses the degree of impact to each factor, in ways that just estimating the volume of emissions cannot. In fact, various agencies have used the social cost of greenhouse gases to assess a project's climate impacts under NEPA.³⁹

Applying the social cost of greenhouse gases is straightforward and provides information that would be very useful to the Commission's assessment here. The most widely used estimate of the social cost of carbon was developed by the federal Interagency Working Group on the Social Cost of Greenhouse Gases ("Working Group"), a coordinated effort among twelve federal agencies and White House offices. The Working Group released estimates in 2010 and updated them in 2016 to "provide a consistent approach for agencies to quantify [climate change] damage in dollars."⁴⁰ Many authorities endorse the Working Group's estimate of the social cost of greenhouse gases. In 2016 and 2017, the National Academies of Sciences issued two reports that, while recommending future methodological improvements, broadly supported the continued use of the Working Group's estimates.⁴¹ Distinguished economists have explained that the Working Group's estimates remain the best numbers available to federal agencies.⁴² And the U.S. Court of Appeals for the Seventh Circuit upheld agency reliance on these estimates.⁴³

Using the central value identified by the Working Group, the methodology reveals that the Project's downstream emissions—assuming full burn—would cause approximately \$275 million in annual climate damage.⁴⁴ Even the Project's direct operational emissions alone (not even including direct construction emissions) would cause nearly \$5 million in annual climate harm.⁴⁵ These substantial costs help disclose the intensity and significance of the Project's

³⁸ Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis 5* (2010).

³⁹ See e.g., BUREAU OF OCEAN ENERGY MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT OF COOK INLET PLANNING AREA OIL AND GAS LEASE SALE 244 (BOEM 2016-069) (Dec. 23, 2016); see also Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 COLUM. J. ENVTL. L. 203, 270–84 (2017) (listing all uses by federal agencies through mid-2016, including numerous NEPA assessments).

⁴⁰ *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at P 45 (Mar. 14, 2018).

⁴¹ Nat'l Acads. Sci., Eng'g & Med., *Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide 3* (2017); Nat'l Acads. Sci., Eng'g & Med., *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update 1* (2016).

⁴² See Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 Science 655 (2017) (co-authored with Michael Greenstone, Michael Hanemann, Peter Howard, and Thomas Sterner).

⁴³ *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678 (7th Cir. 2016).

⁴⁴ See *supra* note 8 and accompanying text.

⁴⁵ The 2016 Interagency Working Group's central estimate of the social cost of carbon for year 2025 emissions is \$46 in 2007\$. Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis 4* (2016). Adjusted for inflation, that equals approximately \$57 in 2019\$. 85,666 metric tons of CO₂e* \$57 = \$4.882 million. In a proper cost-benefit analysis, that calculation of costs from year 2025 emissions would be discounted back to present value.

climate harms pursuant to NEPA and would bear heavily on assessing whether the Project is in fact in the public interest under the NGA. Should this Commission approve the Project without using this methodology or offering any other rational assessment of the severity of resulting climate harms, its determination would be arbitrary and capricious.

Policy Integrity hereby attaches its October 2019 comments on FERC's Draft Environmental Impact Statement for the Alaska LNG Project, submitted jointly with six other groups, which provides further detail on the social cost of greenhouse gases and rebuts specific arguments that the Commission has offered against the methodology in prior determinations. Policy Integrity also attaches its 2019 report titled "Pipeline Approvals and Greenhouse Gas Emissions," which further explains FERC's legal obligations to assess climate-related impacts in pipeline approvals. Additionally, Policy Integrity attaches several other documents referenced in these comments. FERC should consider all relevant arguments expressed in the attached documents to be comments made on the Environmental Assessment as well. As these documents further explain, and as detailed above, it would be arbitrary and capricious for FERC to approve the Project without further analysis of its climate impacts.

Sincerely,

Iliana Paul, Senior Policy Analyst
Max Sarinsky, Attorney
Jason A. Schwartz, Legal Director

Attached:

- 1) Joint Comments on the Failure to Use the Social Cost of Greenhouse Gases in the Alaska LNG Project Draft Environmental Impact Statement (Docket No. CP17-178-000)
- 2) Jayni Hein et al., Inst. for Pol'y Integrity, *Pipeline Approvals and Greenhouse Gas Emissions* (2019)
- 3) Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* (2016)
- 4) Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 *Science* 655 (2017)
- 5) Peter Howard, Inst. for Pol'y Integrity, *The Bureau of Land Management's Modeling Choice for the Federal Coal Programmatic Review* (2016)
- 6) James Bradbury et al., Dep't of Energy, *Greenhouse Gas Emissions and Fuel Use Within the Natural Gas Supply Chain* (2015)