

**ORAL ARGUMENT NOT YET SCHEDULED**

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

No. 20-1132

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FOOD & WATER WATCH and BERKSHIRE ENVIRONMENTAL ACTION  
TEAM,

Petitioners,

v.

FEDERAL ENERGY REGULATORY COMMISSION,

Respondent,

BAY STATE GAS COMPANY, D/B/A COLUMBIA GAS OF  
MASSACHUSETTS and TENNESSEE GAS PIPELINE COMPANY, LLC,  
Intervenors for Respondent.

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On Petition for Review of Orders of the Federal Energy Regulatory Commission

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**BRIEF OF THE INSTITUTE FOR POLICY INTEGRITY  
AT NEW YORK UNIVERSITY SCHOOL OF LAW  
AS *AMICUS CURIAE* IN SUPPORT OF PETITIONERS**

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## **CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES**

As required by Circuit Rule 28(a)(1), counsel for Institute for Policy Integrity at New York University School of Law (“Policy Integrity”) certify as follows:

**Parties:** Except for Policy Integrity, all parties and intervenors appearing in this case are listed in the Opening Brief for Petitioners.

**Rulings Under Review:** The following final agency actions by Respondent are under review:

- 1) *Tennessee Gas Pipeline Co., LLC*, 169 FERC ¶ 61,230 (Dec. 19, 2019)
- 2) *Tennessee Gas Pipeline Co., LLC*, 170 FERC ¶ 61,142 (Feb. 21, 2020)

**Related Cases:** Beyond the cases listed in Petitioners’ Certificate as to Parties, Rulings, and Related Cases, Policy Integrity is not aware of any other related cases to this matter.

## **RULE 26.1 DISCLOSURE STATEMENT**

The Institute for Policy Integrity (“Policy Integrity”) is a nonpartisan, not-for-profit organization at New York University School of Law. Policy Integrity is dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity has no parent companies. No publicly-held entity owns an interest of more than ten percent in Policy Integrity. Policy Integrity does not have any members who have issued shares or debt securities to the public.

**STATEMENT REGARDING SEPARATE BRIEFING,  
AUTHORSHIP, AND MONETARY CONTRIBUTIONS**

Policy Integrity is not aware of any other organizations that plan to file *amicus* briefs in support of Petitioners. Under Federal Rule of Appellate Procedure 29(a)(4)(E), Policy Integrity states that no party's counsel authored this brief in whole or in part, and no party or party's counsel contributed money intended to fund the preparation or submission of this brief. No person—other than the *amicus curiae*, its members, or its counsel—contributed money intended to fund the preparation or submission of this brief.

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## GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Pursuant to Circuit Rule 28(a)(3), the following is a glossary of acronyms and abbreviations used commonly in this brief:

Certificate Order	<i>Tennessee Gas Pipeline Co., LLC</i> , 169 FERC ¶ 61,230 (Dec. 19, 2019)
EA	261 Upgrade Project, Environmental Assessment (2019)
FERC (or the Commission)	Federal Energy Regulatory Commission
NGA	Natural Gas Act
Policy Integrity	The Institute for Policy Integrity at New York University School of Law
Project	Tennessee pipeline extension, two compressor stations, and related facilities in Hampden County, Mass.
Rehearing Order	<i>Tennessee Gas Pipeline Co., LLC</i> , 170 FERC ¶ 61,142 (Feb. 21, 2020)
Tennessee	Tennessee Gas Pipeline Company, LLC
Working Group	Interagency Working Group on the Social Cost of Carbon

## INTEREST OF AMICUS CURIAE AND AUTHORITY TO FILE

The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”)<sup>1</sup> submits this brief as *amicus curiae* in support of the petition for review of the Federal Energy Regulatory Commission (“FERC” or the “Commission”) order approving a certificate of public convenience and necessity for the construction and operation of a pipeline extension and two compressor stations in Hampden County, Mass. (“Project”), *Tennessee Gas Pipeline Co., LLC*, 169 FERC ¶ 61,230 (Dec. 19, 2019) (“Certificate Order”), and of the denial of rehearing of that order, *Tennessee Gas Pipeline Co., LLC*, 170 FERC ¶ 61,142 (Feb. 21, 2020) (“Rehearing Order”). This filing is unopposed.

Policy Integrity is a nonpartisan think tank dedicated to improving government decisionmaking in administrative law, economics, and environmental policy. We have produced extensive scholarship on the balanced use of economic analysis in regulatory decisions and resource management, with a particular focus on the rational assessment of climate harms, including through application of the Social Cost of Carbon. Our director, Professor Richard L. Revesz, has published more than eighty articles and books,<sup>2</sup> including articles with prominent economists

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<sup>1</sup> This brief does not purport to represent the views, if any, of New York University School of Law.

<sup>2</sup> A full list of publications can be found on Prof. Revesz’s faculty profile, <https://its.law.nyu.edu/facultyprofiles/index.cfm?fuseaction=profile.publications&personid=20228>.

like Nobel Prize winner Kenneth Arrow on the Social Cost of Carbon. *See* Richard L. Revesz, Kenneth Arrow, et al., *The Social Cost of Carbon: A Global Imperative*, 11 Rev. Envtl. Econ. & Pol’y 172 (2017); *Global Warming: Improve Economic Models of Climate Change*, 508 Nature 173 (2014). Our legal director, Jason Schwartz, has published numerous academic articles supporting the Social Cost of Carbon’s use in agency decisionmaking. *See, e.g.*, Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 Colum. J. Envtl. L. 203 (2017) (“*Think Global*”). Policy Integrity has also published scholarship analyzing FERC’s obligations to rationally assess climate effects in natural-gas pipeline certificate proceedings. Jayni Hein et al., Inst. for Policy Integrity, *Pipeline Approvals and Greenhouse Gas Emissions* (2019) (“*Pipeline Approvals*”).<sup>3</sup>

Harnessing this expertise, Policy Integrity has participated in numerous cases before this Court challenging the sufficiency of FERC’s consideration of climate impacts. *See, e.g.*, Briefs for Institute for Policy Integrity as Amicus Curiae, *Vecinos Para el Bienestar de la Comunidad Costera v. FERC*, No. 20-1045 (D.C. Cir. filed June 17, 2020); *Del. Riverkeeper Network v. FERC*, No. 18-1128 (D.C. Cir. filed Dec. 28, 2018). Policy Integrity also regularly files legal briefs supporting rational

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<sup>3</sup> Available at [https://policyintegrity.org/files/publications/Pipeline\\_Approvals\\_and\\_GHG\\_Emissions.pdf](https://policyintegrity.org/files/publications/Pipeline_Approvals_and_GHG_Emissions.pdf).

assessment of climate impacts by other federal agencies. *See, e.g.*, Briefs for Institute for Policy Integrity as Amicus Curiae, *WildEarth Guardians v. BLM*, 870 F.3d 1222 (10th Cir. 2017) (critiquing finding that approved coal production would not contribute to climate change); *Zero Zone, Inc. v. DOE*, 832 F.3d 654 (7th Cir. 2016) (supporting Social Cost of Carbon’s use).

Here, Petitioners argue that FERC’s review of the Project’s environmental impacts pursuant to the National Environmental Policy Act (“NEPA”), and approval of a certificate of public convenience and necessity under the Natural Gas Act (“NGA”), failed to fully account for or assess the significance of the Project’s emissions. Pet’rs Br. 26–44. Policy Integrity’s expertise gives it a unique perspective from which to evaluate this claim.

### **SUMMARY OF ARGUMENT**

By declining to evaluate the scope or severity of the Project’s climate harms, yet still finding that the Project “will not result in any significant environmental impacts,” Rehearing Order at P 27, and is “required by the public convenience and necessity,” *id.* at P 4, FERC fails to engage in reasoned decisionmaking. The Commission effectively turns a blind eye to the Project’s substantial climate damages, in violation of both the NGA and NEPA.

The Commission’s failures are manifold. For one, by assessing only the Project’s direct greenhouse gas emissions while disregarding upstream and

downstream emissions—that is, emissions caused by the production and combustion of transported natural gas—the Commission ignores the vast majority of the Project’s emissions. FERC fails to “give[] a quantitative estimate of the [total] greenhouse emissions that will result ... or [reasonably] explain[] ... why it could not have done so.” *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (“*Sabal Trail*”). While the Commission claims it lacks ability to forecast the Project’s full emissions, many tools exist and are used by other federal agencies to assess oil-and-gas projects. Or, as this Court has held, the Commission could simply estimate the Project’s downstream emissions using basic arithmetic based on its service capacity.

Meaningful assessment of climate impacts requires the Commission not only to tally total greenhouse gas emissions, but also to assess the real-world harms that those emissions will cause—and here, too, the Commission falls well short. Contrary to the Commission’s claim that there is no “method for relating [greenhouse gas] emissions to specific resource impacts,” 261 Upgrade Project, Environmental Assessment 69 (2019) (“EA”), the federal government developed an easy-to-use tool a decade ago for such an assessment: the Social Cost of Carbon. Since then, the tool has been widely used across government to translate greenhouse gas emissions into damage amounts. Applying that methodology to the Project’s direct and downstream emissions reveals that the Project will cause over \$75 million in climate harm each

year—a substantial cost that bears heavily on assessing whether the Project is in fact in the public interest.

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 not result in any significant environmental impacts,” Rehearing Order at P 27. Its determination that the Project is in the public interest is therefore arbitrary and capricious.

## **ARGUMENT**

### **I. FERC Fails Its Statutory Duties by Considering Only a Small Fraction of the Project’s Climate Impacts**

Rather than honoring its statutory obligation to fully assess the Project’s climate impacts, FERC excludes the bulk of the Project’s emissions by claiming that “there is no evidence that the [P]roject will spur additional production or downstream consumption,” Rehearing Order at P 17. But the NGA and NEPA require FERC to use the best available science to analyze the Project’s effects, and doing so here would clearly show that the Project will produce substantial upstream and downstream greenhouse gas emissions. The Commission is well-equipped to evaluate the full impacts of the Project, and its refusal to do so flouts statutory mandates and is arbitrary and capricious.

### **A. The Project Produces Upstream and Downstream Emissions that FERC Must Meaningfully Consider Under the NGA and NEPA**

Despite FERC’s equivocations, 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, *see* Certificate Order at P 66—that FERC estimates here, EA at 54 tbl.18. Pipelines also produce two other types of 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. *See* Certificate Order at P 57; EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018* at 3-85 (2020) (describing emissions associated with production).<sup>4</sup> Because transport projects make it cheaper 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. *See* N. Gregory Mankiw, *Principles of Economics* 74–78, 80–81 (5th ed. 2008); *Pipeline Approvals* at 1.<sup>5</sup> Thus, a natural-

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<sup>4</sup> Available at <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf>.

<sup>5</sup> This Court may consider information outside the administrative record “to determine whether the agency considered all the relevant factors.” *City of Dania Beach v. FAA*, 628 F.3d 581, 590 (D.C. Cir. 2010) (internal quotation marks omitted).

gas pipeline predictably causes upstream emissions and, as detailed below, numerous tools are available to calculate these emissions.

“Downstream emissions” are those unleashed by the combustion of natural gas when converted into energy. *See* Certificate Order at PP 57, 63. Such combustion is a natural-gas transport project’s “entire purpose,” *Sabal Trail*, 867 F.3d at 1372, as the “vast majority, 97 percent, of all natural gas consumed [domestically] is combusted,” Rehearing Order at P 8 (Glick, Comm’r, dissenting in part) (“Rehearing Order Dissent”). Total combustion-related emissions can be calculated from a pipeline’s transport, *see* EPA, *Greenhouse Gas Equivalencies Calculator—Calculations and References*,<sup>6</sup> and typically far surpass the transport project’s direct emissions, James Bradbury et al., Dep’t of Energy, *Greenhouse Gas Emissions and Fuel Use Within the Natural Gas Supply Chain* 4 (2015)<sup>7</sup> (attributing roughly 80 percent of all greenhouse emissions generated by natural-gas supply chain to combustion).

As this Court explained in *Sabal Trail*, the NGA and NEPA require FERC to consider a pipeline’s total emissions—not just direct emissions—before approving

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<sup>6</sup> <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references> (last updated May 27, 2020).

<sup>7</sup> Available at [https://www.energy.gov/sites/prod/files/2015/07/f24/QER%20Analysis%20-%20Fuel%20Use%20and%20GHG%20Emissions%20from%20the%20Natural%20Gas%20System%2C%20Sankey%20Diagram%20Methodology\\_0.pdf](https://www.energy.gov/sites/prod/files/2015/07/f24/QER%20Analysis%20-%20Fuel%20Use%20and%20GHG%20Emissions%20from%20the%20Natural%20Gas%20System%2C%20Sankey%20Diagram%20Methodology_0.pdf).

a project. The NGA requires FERC to consider such emissions, this Court found, because FERC must ensure a project is “required by the present or future public convenience and necessity.” 867 F.3d at 1379 (quoting 15 U.S.C. § 717f(e)). 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. *Id.* at 1373 (internal quotation marks omitted). NEPA also requires FERC to meaningfully consider total emissions, the Court held, *id.* at 1373–74, as part of the “hard look” agencies must take at environmental consequences when considering major projects, *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). *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).

In sum, upstream and downstream greenhouse emissions are foreseeable environmental effects of natural-gas transport projects and therefore demand meaningful consideration under the NGA and NEPA.

**B. FERC’s Failure to Consider Upstream and Downstream Emissions Is Arbitrary and Capricious**

Confronted with its statutory obligation to consider the Project’s upstream and downstream emissions, FERC claims that such emissions, assuming they exist at all,

are not reasonably foreseeable. Rehearing Order at PP 14–20. Science, economics, and case law expose FERC’s excuses as inaccurate and inadequate.

**Upstream Emissions.** FERC offers several excuses for disregarding upstream emissions, but none are persuasive. First, the Commission claims that emissions generated by induced production of natural gas are not “foreseeable” because it cannot “predict the ... location of any additional wells that would be drilled as a result of any production demand associated with the [P]roject.” Certificate Order at P 62. But the precise origins of additional gas are not necessary to estimate upstream emissions, and both the Commission and other agencies have used tools for this purpose. For instance, FERC has used estimates developed by the Department of Energy for upstream emissions from natural-gas production. *See Dominion Transmission, Inc.*, 163 FERC ¶ 61,128 at 2–3 & nn.5–6 (May 18, 2018) (LaFleur, Comm’r, dissenting in part) (identifying previous Commission orders that use available tools). Alternatively, FERC could apply the Environmental Protection Agency’s (“EPA”) methods to calculate the quantity of greenhouse gases emitted by oil and gas wells, gathering lines, and processing facilities. EPA, Detailed Comments on FERC NOI for Policy Statement on New Natural Gas Transportation Facilities 2, Docket No. PL18-1-000 (June 21, 2018).

FERC’s next excuse—that “absent approval of the [P]roject, this gas [might] be brought to market by other means”—also fails. Certificate Order at P 62. FERC

assumes that other sources could perfectly substitute for this pipeline and supply the same quantity of gas at the same price with no impacts on market supply or demand. But as previously discussed, new pipelines are built precisely to lower the cost of bringing gas to market and to make natural gas more competitive, thereby increasing the use of natural gas. Mankiw at 74–78, 80–81; *Pipeline Approvals* at 3. Because pipeline approvals therefore drive up natural-gas production, several appellate courts have held that assuming perfect substitution, as FERC does here, is “irrational” and “contrary to basic supply and demand principles,” *WildEarth Guardians v. BLM*, 870 F.3d 1222, 1236 (10th Cir. 2017). “[T]he proposition that the demand for [energy] will be unaffected by an increase in availability and a decrease in price, which is the stated goal of the [P]roject, is illogical at best.” *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003).

The Commission provides no basis to support the proposition that upstream emissions will somehow remain constant despite the Project, but instead bemoans the lack of “evidence in the record” to “help predict the number ... of any additional wells that would be drilled as a result of any production demand associated with the [P]roject.” Certificate Order at P 62. But it is FERC’s duty to assemble that record and, at the very least, “attempt to obtain the information necessary to fulfill its statutory responsibilities.” *Birckhead v. FERC*, 925 F.3d 510, 520 (D.C. Cir. 2019). Here, FERC gives no indication that it tried to obtain the information it ostensibly

needs to estimate upstream emissions. And even if complete information were unavailable, some uncertainty would not rid the Commission of its obligation to quantify emissions: FERC must provide “reasonable forecasting” even when there may be “several uncertain variables.” *Sabal Trail*, 867 F.3d at 1374.

Such forecasting tools are readily available here: Other agencies use models to predict how a project will affect the national energy mix and associated emissions. For instance, the Bureau of Ocean 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. BOEM, *Consumer Surplus and Energy Substitutes for OCS Oil and Gas Production: The 2015 Revised Market Simulation Model (MarketSim)* (2015)<sup>8</sup>; Peter Howard, Inst. for Policy Integrity, *The Bureau of Land Management’s Modeling Choice for the Federal Coal Programmatic Review* 6 (2016) (“*Modeling Choice*”).<sup>9</sup> The Energy Information Administration, Surface Transportation Board, and other government offices have all used NEMS, “a general equilibrium electricity

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<sup>8</sup> Available at <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Leasing/Five-Year-Program/2017-2022/Market-Sim-Model.pdf>.

<sup>9</sup> Available at [https://policyintegrity.org/files/publications/BLM\\_Model\\_Choice.pdf](https://policyintegrity.org/files/publications/BLM_Model_Choice.pdf).

model” to capture effects on the global electricity market. EIA, *Coal Market Module of the National Energy Modeling System: Model Documentation 2020* (2020)<sup>10</sup>; 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). And the Environmental Protection Agency makes use of a similar model known as the Integrated Planning Model. EPA, *Integrated Planning Model (IPM) Results Viewer*<sup>11</sup>; *Modeling Choice* at 10–11.

By refusing to evaluate upstream emissions despite these readily available tools, FERC fails to “make educated assumptions” to assess the Project’s climate effects. *Sabal Trail*, 867 F.3d at 1374. The Commission therefore fails its statutory duties under the NGA and NEPA.

**Downstream Emissions.** FERC’s excuse for ignoring downstream emissions is equally unavailing, for similar reasons. Specifically, the Commission states that it “asked where the gas would be delivered,” but applicant “Tennessee repeated what is in its application ... without providing more detailed information on exactly how the gas would be used.” Rehearing Order at P 20. On this basis, the Commission concluded that combustion-related emissions were not “reasonably foreseeable.” *Id.*

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<sup>10</sup> 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).

<sup>11</sup> <https://www.epa.gov/airmarkets/integrated-planning-model-ipm-results-viewer> (last updated Mar. 6, 2020).

But this analysis is insufficient, for multiple reasons. For one, the Commission’s information-gathering efforts do not satisfy the standards this Court laid out in *Birckhead*. There, FERC declined to quantify a pipeline’s upstream and downstream emissions, claiming, as here, that it lacked information about the final destination and end use of natural gas. 925 F.3d at 517–18. But this Court was “troubled ... by the Commission’s attempt to justify its decision to discount downstream impacts based on its lack of information” and suspected that the applicant, also Tennessee, could obtain and provide that information. *Id.* at 519–20. To engage in “reasonable forecasting,” the Court said FERC must “at least *attempt* to obtain the information necessary” to quantify emissions. *Id.* at 520. Although a lack of jurisdiction prevented this Court from striking down FERC’s “less-than-dogged efforts,” the Court made clear that it found the Commission’s efforts wanting. *Id.* at 520–21.

Here, as in *Birckhead*, FERC blames its failure to consider downstream emissions on a lack of information about the “known specific end use” for the natural gas transported by the Project. Certificate Order at P 63. But FERC’s ostensible attempt to gather this information demonstrates the same “less-than-dogged efforts” the Court criticized in *Birckhead*, 925 F.3d at 520. Although FERC requested further information from applicant Tennessee, that request proved meaningless, because the Commission accepted a vague response that merely repeated the information in

Tennessee’s application. Rehearing Order at P 20. Rather than requesting more information, FERC approved the Project anyway. Such exchanges do not enable “reasonable forecasting”—the whole purpose of such requests, *Birckhead*, 925 F.3d at 520—and they ignore that Tennessee, by its own prior admission, can seek and provide relevant information, *id.* In fact, if nonresponsive replies from applicants were sufficient, applicants would have incentive to withhold key information.

In any event, even without definitive information about the end use of the transported gas, FERC already has a proxy endorsed by this Court to estimate downstream emissions: the fact that the Project will “provide 72,400 dekatherms ... per day of firm transportation service,” Rehearing Order at P 2. Assuming that this gas will be combusted<sup>12</sup>—as 97 percent of consumed natural gas is, Rehearing Order Dissent at P 8—then emissions can be estimated using simple arithmetic, and this Court has required FERC to do just that unless more specific information is available, *Sabal Trail*, 867 F.3d at 1374. That approach finds that the Project will emit about 1.4 million metric tons of carbon dioxide annually in downstream

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<sup>12</sup> Numerous federal agencies use this “full burn” assumption—that a project’s full capacity will be used, with all fossil fuel combusted—when assessing energy projects. *Pipeline Approvals* at 24. And even if FERC rejects this assumption for some reason, there is no reason to ignore the volume of gas that Tennessee has already contracted to transport, Rehearing Order at P 3, which can serve as a lower bound for estimating the Project’s capacity.

emissions.<sup>13</sup> Thus, the Project’s downstream emissions eclipse its direct emissions, *see* EA at 54 tbl.18 (projecting 113,000 metric tons in annual 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,” 15 U.S.C. § 717f(e), nor can it fulfill NEPA’s twin aims to consider and disclose all significant environmental impacts, *Balt. Gas & Elec. Co.*, 462 U.S. at 97. FERC’s decision to disregard these effects, rather than using available tools to evaluate them, is arbitrary and capricious.

## **II. FERC’s Failure to Translate Emissions into Climate Harms—Which Can Be Done Using the Social Cost of Carbon—Is Also Unlawful**

While FERC’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. *See* Pet’rs Br. 37–44. The Social Cost of Carbon provides an analytical tool that makes such

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<sup>13</sup> Combusting one therm of natural gas produces 0.0053 metric tons of CO<sub>2</sub>. *EPA, Greenhouse Gas Equivalencies Calculator—Calculations and References*. There are 10 therms in one dekatherm. Thus, 72,400 dekatherms/day \* 10 therms/dekatherm \* 0.0053 metric tons/1 therm \* 365 days/year = 1.4 million metric tons of CO<sub>2</sub> per year.

consideration feasible, and by neglecting this tool without compelling justification, the Commission further violates its statutory mandates to consider climate impacts.

**A. The Social Cost of Carbon Is a Widely Accepted and Easy-To-Use Tool for Assessing Climate Impacts**

Contrary to FERC’s claim that it lacks a suitable “method for relating [greenhouse gas] emissions to specific resource impacts,” EA at 69, the Social Cost of Carbon is a straightforward and easy-to-apply tool for estimating a project’s climate damages.

The most widely used estimate of the Social Cost of Carbon was developed by the federal Interagency Working Group on the Social Cost of Carbon (“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.” *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at P 45 (Mar. 14, 2018). Under the Working Group’s methodology, the Social Cost of Carbon is calculated by averaging three “integrated assessment models” that translate a one-ton increase in carbon-dioxide emissions into changes in atmospheric greenhouse concentrations, consequent changes in temperature and environmental impacts, and resulting

damages. See Working Group, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis* 5 (2010).<sup>14</sup>

The Working Group provides a range of cost estimates for incremental climate damages, including a “central value” projection. *Id.* at 3. Under this central estimate, each ton of carbon dioxide released in 2020 causes \$42 in climate damages in 2007\$—including property damage, lost agricultural productivity, changes in energy demand, human health impacts, and other effects.<sup>15</sup> See Working Group, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 3–4 (2016) (“2016 Technical Support Document”).<sup>16</sup> Adjusted for inflation, this equals roughly \$52 per ton in present value.<sup>17</sup>

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<sup>14</sup> Available at <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>.

<sup>15</sup> Various economists have offered their own estimates of the Social Cost of Carbon, which tend to converge around the Working Group’s central value. Berkshire Environmental Action Team provided one such estimate in its petition for rehearing. See Rehearing Order at P 21.

<sup>16</sup> Available at [https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc\\_tsd\\_final\\_clean\\_8\\_26\\_16.pdf](https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf).

<sup>17</sup> Carbon dioxide stays in the atmosphere and contributes to climate harm for centuries. The Working Group’s estimates capture that full stream of effects, discounting future damages to present value. See 2016 Technical Support Document at 16. Based on the economic literature, the Working Group used a 3 percent discount rate for its central estimate, and also calculated the value at rates of 5 and 2.5 percent. See *id.* at 19. The range for those analyses is \$15–76 per metric ton for year 2020 emissions (adjusted to present value). *Id.* at 4 tbl.ES-1. A “high impact”

Many authorities endorse the Working Group’s estimate. The National Academies of Sciences issued two reports in 2016 and 2017 that, while recommending future methodological improvements, supported the continued use of the Social Cost of Carbon. See Nat’l Acads. of Scis., Eng’g & Med., *Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide 3* (2017);<sup>18</sup> *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update 1* (2016).<sup>19</sup> The U.S. Government Accountability Office supports those recommendations and endorsed the use of the Social Cost of Carbon in agency decisionmaking. U.S. Gov’t Accountability Office, *Social Cost of Carbon* (2020).<sup>20</sup> Distinguished economists have explained that the Working Group’s estimates remain the best numbers available to federal agencies. See Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 *Science* 655 (2017) (co-authored with economists Michael Greenstone, Michael Hanemann, Peter Howard, and Thomas Sterner). And the U.S. Court of Appeals for the Seventh

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estimate of 2020 emissions reflecting the potential for more catastrophic outcomes is \$152 (also adjusted). *Id.*

We converted the Working Group’s estimates (presented in 2007\$) to present value using the Bureau of Labor Statistics’ consumer price index, by multiplying by approximately 1.233. See *CPI for All Urban Consumers (CPI-U)*, U.S. Bureau Lab. Stat., <https://data.bls.gov/timeseries/CUUR0000SA0> (last visited July 31, 2020).

<sup>18</sup> Available at <https://www.nap.edu/catalog/24651/valuing-climate-damages-updating-estimation-of-the-social-cost-of->

<sup>19</sup> Available at <https://www.nap.edu/catalog/21898/assessment-of-approaches-to-updating-the-social-cost-of-carbon>.

<sup>20</sup> Available at <https://www.gao.gov/assets/710/707776.pdf>.

Circuit upheld agency reliance on these estimates, *Zero Zone, Inc. v. DOE*, 832 F.3d 654, 678–79 (7th Cir. 2016), while a federal district court vacated an agency rule for disregarding the Working Group’s estimates, *California v. Bernhardt*, No. 18-5712, 2020 WL 4001480, at \*24–28 (N.D. Cal. July 15, 2020).

Moreover, as FERC itself has recognized, many agencies throughout the federal government use the Working Group’s estimates when crafting regulations and examining regulatory alternatives. *See, e.g., Mountain Valley Pipeline, LLC*, 163 FERC ¶ 61,197, at P 281 (June 15, 2018). Indeed, since at least 2010, numerous federal agencies have based their regulatory decisions and NEPA reviews on the Working Group’s central estimate. *See Think Global*, 42 Colum. J. Envtl. L. at 270–84 (listing all uses by federal agencies through mid-2016). Earlier this year, for example, the Department of Energy applied the Working Group’s estimates, noting that they had “been developed over many years, using the best science available.” 85 Fed. Reg. 1447, 1479 (Jan. 10, 2020).

Applying the Social Cost of Carbon to monetize the Project’s annual climate harms is straightforward. Specifically, FERC needed only to multiply the Project’s greenhouse gas emissions in a year—a figure it projected for direct emissions, EA at 54 tbl.18, and as noted above, can reasonably estimate for upstream and downstream emissions, *supra* at 11–15—by the Working Group’s estimate. This methodology reveals that the Project’s direct and downstream emissions alone (not

including upstream emissions) will cause over \$75 million in annual climate damages.<sup>21</sup> Thus, the Social Cost of Carbon reveals that the Project will wreak at least hundreds of millions of dollars in climate harm over the Project's operation.

**B. Monetizing Climate Damages Fulfills FERC's Duties Under the NGA and NEPA, While Volumetric Estimates of Emissions Alone Do Not**

Notwithstanding the feasibility of using the Social Cost of Carbon, FERC refuses to use any available tools to analyze the scope or severity of the Project's greenhouse gas emissions, and instead "disclose[s]" the Project's direct greenhouse gas emissions without consideration of their impacts. Rehearing Order at P 21. While FERC appears to believe that simply quantifying some emissions is sufficient under the NGA and NEPA, it minimizes its duties under both statutes.

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<sup>21</sup> The Project will result in the direct release of over 113,000 metric tons of greenhouse gases annually, EA at 54 tbl.18, plus another 1.4 million in downstream emissions, *supra* note 13. This totals over 1.5 million metric tons per year. Multiplying that number by the Working Group's central estimate—\$52 (for 2020 emissions), *supra* at 17—totals \$78 million in annual climate damages.

Even this is likely an underestimate. First, it does not include the Project's upstream emissions, which require modeling to estimate. Second, because each ton's marginal impact rises as background atmospheric concentrations increase, the monetized harm of emissions increases each year—meaning future emissions are valued at more than \$52 per ton. *See* 2016 Technical Support Document at 4 tbl. ES-1. Finally, some experts believe the Working Group undervalued the Social Cost of Carbon. *See, e.g.*, Robert S. Pindyck, Comments on Proposed Rule and Regulatory Impact Analysis 2–4 (Nov. 6, 2017), *available at* <https://www.regulations.gov/contentStreamer?documentId=BLM-2017-0002-16107&attachmentNumber=1&contentType=pdf>.

For one, as noted above, without proper consideration of climate impacts, FERC cannot make a rational determination under the NGA that a natural-gas facility is “required by the present or future public convenience and necessity,” 15 U.S.C. § 717f(e). FERC’s lack of analysis also violates NEPA, whose “key requirement” is for agencies to “consider and disclose the *actual environmental effects* in a manner that ... brings those effects to bear on decisions.” *Balt. Gas & Elec. Co.*, 462 U.S. at 96 (emphasis added); *see also* 42 U.S.C. § 4332(2)(C)(ii) (requiring agencies to assess “adverse environmental effects” of proposed actions).<sup>22</sup> As this Court has held, merely listing the quantity of emissions is insufficient if the agency “does not reveal the meaning of those impacts in terms of human health or other environmental values.” *NRDC v. U.S. Nuclear Regulatory Comm’n*, 685 F.2d 459, 486 (D.C. Cir. 1982), *rev’d on other grounds*, *Balt. Gas & Elec. Co.*, 462 U.S. 87. “[I]t is not releases of [pollution] that Congress wanted disclosed; it is the effects, or environmental significance, of those releases.” *Id.* at 487. As detailed above, the Social Cost of Carbon provides an effective tool for measuring the “effects” and “significance” of greenhouse gas emissions.

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<sup>22</sup> Current NEPA regulations reflect this mandate by requiring agencies to assess “effects and their significance,” 40 C.F.R. § 1502.16, which “requires consideration of both context and intensity,” *id.* § 1508.27, of the “ecological ..., economic, social, or health” impacts caused by the agency’s actions, *id.* § 1508.8. Although these regulations are set to be replaced in September, *see* 85 Fed. Reg. 43,304 (July 16, 2020), they govern this determination and, in any event, their replacement cannot affect NEPA’s statutory requirements discussed above.

Instead of performing the statutorily-required analysis, FERC identifies only the volume of greenhouse gases directly released, EA at 54 tbl.18, lists some broad categories of climate impacts like heat waves, stronger storms, and sea-level rise, *id.* at 67–68,<sup>23</sup> and vaguely concedes that the Project would “contribute incrementally to future climate change impacts,” *id.* at 68. But this is insufficient, as without considering the discrete impacts of the Project on these outcomes, the Project’s “emissions ... do[] not play a meaningful role in the Commission’s public interest determination.” Certificate Order at P 6 (Glick, Comm’r, dissenting in part) (“Certificate Order Dissent”). Indeed, the U.S. Court of Appeals for the Ninth Circuit explained in an analogous case that quantifying the acres of timber to be harvested 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,” if the agency fails to assess “the degree that each factor will be impacted.” *Klamath-Siskiyou Wildlands Ctr. v. BLM.*, 387 F.3d 989, 995 (9th Cir. 2004).

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<sup>23</sup> FERC notes only a few effects of climate change while omitting many others. For instance, FERC does not mention critical impacts such as property damage from extreme weather, increased demand for water and energy in the face of temperature extremes, and mortality from heat-related illnesses. Compare EA at 67–68, with U.S. Glob. Change Research Program, *Fourth National Climate Assessment: Vol. II* 670–716 (2018), available at <https://nca2018.globalchange.gov/downloads/> (projecting key climate impacts to Northeast).

Several courts have applied this principle to hold that an agency’s mere quantification of greenhouse gas emissions—without assessment and monetization of resulting impacts—is insufficient. In *Center for Biological Diversity v. NHTSA*, the Ninth Circuit held that an agency’s quantification of greenhouse gas emissions and general description of climate consequences failed to satisfy NEPA’s obligations because the agency did “not evaluate the incremental impact that these emissions will have on climate change” or disclose “the *actual* environmental effects resulting from those emissions.” 538 F.3d 1172, 1216 (9th Cir. 2008) (internal quotation marks omitted). Several other courts followed suit, finding that quantification of greenhouse gas emissions without monetization is insufficient. *Mont. Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014); *cf. Bernhardt*, 2020 WL 4001480, at \*36–37.

Having failed to apply any methodology “to determine the significance of the Project’s contribution to climate change,” EA at 69, the Commission has no basis for concluding that the Project “will not result in any significant environmental impacts,” Rehearing Order at P 27. These contradictory statements encapsulate a key reason why agencies must do more than quantify emissions: nonmonetized effects are often irrationally treated as worthless. Richard L. Revesz, *Quantifying Regulatory Benefits*, 102 Calif. L. Rev. 1423, 1434–35, 1442 (2014). By proclaiming

ignorance about the Project’s climate harms while nonetheless declaring the Project harmless, the Commission effectively and irrationally assigns climate impacts “zero value,” *Ctr. for Biological Diversity*, 538 F.3d at 1200. Yet “[c]laiming that a project 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.” Certificate Order Dissent at P 2.

In short, even when the Commission occasionally quantifies emissions, it does not assess the Project’s actual effects on climate change. FERC’s determination to approve the Project without meaningful analysis of climate impacts violates the NGA and NEPA.

### **C. FERC’s Objections to the Social Cost of Carbon Are Self-Contradictory and Inaccurate**

While FERC gives several reasons for why it refuses to apply the Social Cost of Carbon, none withstand scrutiny.

**Incremental Impact.** First, FERC suggests that the Social Cost of Carbon is useless because it is “not suited to determine the incremental impact of individual projects.” EA at 68. But as detailed above, this is exactly what the Social Cost of Carbon does. The protocol was specifically developed to assess the “incremental impact” of specific levels of emissions, as it uses models to assess the physical impacts of emissions and then converts those impacts into a dollar-figure estimate. Indeed, FERC has previously conceded that the Social Cost of Carbon “can be used

to estimate incremental physical climate change impacts,” Rio Grande LNG Project Final Environmental Impact Statement, Vol. III, pt. 3, at 23 (2019), and that the tool “estimate[s] the monetized climate change damage associated with an incremental increase in [carbon dioxide] emissions,” *Atlantic Coast Pipeline, LLC*, 164 FERC ¶ 61,100, at P 277 (Aug. 10, 2018) (“*Atlantic Coast Rehearing Order*”), so its contrary claim here rings hollow. FERC’s reliance on a “factual premise that is flatly contradicted by [its] own record does not constitute reasoned administrative decisionmaking.” *Kansas City v. HUD*, 923 F.2d 188, 194 (D.C. Cir. 1991).

**Significance.** FERC next claims that the Social Cost of Carbon is unhelpful because the Commission is “unaware of an established framework or threshold for assessing [climate] costs.” Rehearing Order at P 21. This is equally unpersuasive.

As an initial matter, the lack of bright-line criteria for establishing significance is not unique to climate impacts, as other environmental and economic impacts present similar line-drawing challenges and require judgments by the Commission. With respect to migratory birds, for instance, the Commission did not rely on any threshold, but rather used its judgment to “conclude that impacts on migratory birds ... would not be significant” after assessing the scope of habitat loss. EA at 37. “The Commission’s refusal to, at the very least, exercise similar qualitative judgment to assess the significance of [greenhouse gas] emissions here is arbitrary and capricious.” Certificate Order Dissent at P 11.

Moreover, the need to identify significant environmental effects is actually a strong reason for FERC to monetize emissions using the Social Cost of Carbon. A key advantage of the Social Cost of Carbon is that it groups together many climate impacts and thus allows the Commission to assess ultimate “impacts [on] human health or other environmental values” as NEPA requires, *NRDC*, 685 F.2d at 486. And an economic regulator such as FERC can readily determine the significance of monetized harms. *See Atlantic Coast Rehearing Order* at 8 n.38 (LaFleur, Comm’r, dissenting) (describing areas where FERC exercises judgment to arrive at significance thresholds, such as “just and reasonable returns on equity”). Because NEPA requires agencies to assess the significance of “actual environmental effects,” *Balt. Gas & Elec. Co.*, 462 U.S. at 96, the Social Cost of Carbon—by providing an easy-to-grasp measure of the magnitude of those effects—is ideal for assessing significance.

**Universal Acceptance.** The Commission further complains that the Social Cost of Carbon is not a “universally accepted methodology,” EA at 68, but this prescribes an unreasonably high burden and fails to appreciate the Social Cost of Carbon’s widespread acceptance.

For one, there is no requirement that a methodology be “universally accepted” for the Commission to use it, and such a burden would complicate FERC’s analysis of many impacts. Indeed, the Commission frequently “develop[s] ... analytical

frameworks” and “exercise[s] judgment, based on its expertise, precedent, and the record before it,” despite the lack of a universal methodology. *Atlantic Coast Rehearing Order* at 8 n.38 (LaFleur, Comm’r, dissenting). In this proceeding, for instance, FERC assesses impacts on migratory birds and other environmental values without subjecting its methodology to such scrutiny. Just because a methodology lacks universal acceptance is no reason to reject that methodology when it offers the best tool to assess “adverse environmental effects” in one area, 42 U.S.C. § 4332(2)(C)(ii). “The mere fact that the magnitude of [an effect] is *uncertain* is no justification for *disregarding* the effect entirely.” *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1219 (D.C. Cir. 2004).

In any event, the Commission overlooks the fact that the Social Cost of Carbon has gained widespread acceptance in the scientific and regulatory communities. As noted above, the tool was developed by experts at twelve federal agencies and White House offices, has been endorsed by prominent scientists and economists, and has been used by many federal agencies in both rulemakings and project-level reviews. *See supra* at 16–20. As one federal court recently recognized, there is broad “consensus that [the Working Group’s] estimates constitute the best

available science about monetizing the impacts of greenhouse gas emissions.”

*Bernhardt*, 2020 WL 4001480, at \*25.<sup>24</sup>

Accordingly, the Commission’s rationales for not applying the Social Cost of Carbon are meritless. And because the Commission fails to use this tool or otherwise meaningfully assess the Project’s climate harms, its determination to approve the Project is arbitrary and capricious.

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<sup>24</sup> Additionally, the concurring commissioner states that “courts have repeatedly upheld the Commission’s reasoning” to reject the Social Cost of Carbon. Certificate Order at P 79 & n.135 (McNamee, Comm’r, concurring). This is incorrect. While this Court did uphold the Commission’s 2014 rejection of the Social Cost of Carbon after FERC concluded that “the tool [was] inadequately accurate,” *EarthReports, Inc. v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016), the Court more recently declined to reaffirm that the Commission’s “arguments [from that proceeding] are applicable” and ordered FERC to reassess whether its reasoning “still holds,” *Sabal Trail*, 867 F.3d at 1375. The Commission did not do so here. And as noted above, numerous courts have explained that the Social Cost of Carbon uniquely allows an agency to evaluate the significance of climate impacts and have invalidated NEPA reviews as arbitrary and capricious for rejecting the methodology. *Ctr. for Biological Diversity*, 538 F.3d 1172; *Mont. Env’tl. Info. Ctr.*, 274 F. Supp. 3d 1074; *High Country*, 52 F. Supp. 3d 1174.

## CONCLUSION

For the foregoing reasons, this Court should vacate and remand the Certificate Order.

Dated: August 3, 2020

Respectfully submitted,

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## CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 29(a)(4)(G) and Fed. R. App. P. 32(g)(1), counsel hereby certifies that this brief complies with the type-volume limitations of Fed. R. App. P. 29(a)(5) because it contains 6,487 words (as counted by counsel's word processing system) excluding those portions exempted by Fed. R. App. P. 32(f) and D.C. Cir. R. 32(e)(1), which is not more than half the maximum length of Petitioners' principal brief under the rules.

Counsel further certifies that this brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type-style requirements of Fed. R. App. P. 32(a)(6) because it has been prepared in a proportionally spaced typeface in a 14-point Times New Roman font.

Dated: August 3, 2020

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