

ORAL ARGUMENT NOT YET SCHEDULED

No. 18-1224 (and consolidated cases)

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

ATLANTIC COAST PIPELINE, LLC, *et al.*,
Petitioners,

LORA BAUM, *et al.*,
Petitioner-Intervenors,

v.

FEDERAL ENERGY REGULATORY COMMISSION,
Respondent,

ATLANTIC COAST PIPELINE, LLC, *et al.*,
Respondent-Intervenors.

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

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

Richard L. Revesz
Jason A. Schwartz
Avi Zevin
INSTITUTE FOR POLICY INTEGRITY
139 MacDougal Street
New York, NY 10012
(212) 992-8932
richard.revesz@nyu.edu
*Counsel for Amicus Curiae
Institute for Policy Integrity*

April 12, 2019

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Parties and Amici. All parties, intervenors, and *amici* appearing in this case are listed in the brief for Petitioners Appalachian Voices, Chesapeake Bay Foundation, Inc., Chesapeake Climate Action Network, Cowpasture River Preservation Association, Friends of Buckingham, Friends of Nelson, Highlanders for Responsible Development, Piedmont Environmental Council, Shenandoah Valley Battlefields Foundation, Shenandoah Valley Network, Sierra Club, Inc., Sound Rivers, Inc., Virginia Wilderness Committee, Wild Virginia, Inc., and Winyah Rivers Foundation (collectively, “Conservation Petitioners”); and Bold Alliance, Bold Educational Fund, Nancy Kassam-Adams, Shahir Kassam-Adams, Peter A. Agelasto III (individually and as chairman of Rockfish Valley Foundation), Judith Allen, Eleanor M. Amidon, Jill Averitt, Richard Averitt, Richard G. Averitt III, Dr. Sandra Smith Averitt, James R. Bolton, Constance Brennan, Joyce D. Burton, Carolyn L. Fischer, Bridget K. Hamre, Charles R. Hickox, Demian K. Jackson, Janice Jackson, Lisa Y. Lefferts, William Limpert, David Drake Makel, Carolyn Jane Mai, Nelson County Creekside, LLC, Rockfish Valley Foundation, Rockfish Valley Investments, Victoria C. Sabin, Alice Rowe Scruby, Timothy Mark Scruby, Marilyn M. Shifflett, Sharon Summers, Chapin Wilson, Jr., Wintergreen Country Store Land Trust, and Kenneth M. Wyner (collectively, “Landowner Petitioners”) except for the present movant *amicus curiae* in support of Conservation

Petitioners, as well as Natural Resources Defense Council; Center for Earth Ethics; Kairos Center for Religions, Rights, and Social Justice; North Carolina Poor People’s Campaign; Repairers of the Breach; Satchidananda Ashram – Yogaville; Union Grove Baptist Church; Virginia Interfaith Power & Light; Virginia State Conference, NAACP; and WE ACT for Environmental Justice, movant *amicus curiae* in support of Conservation Petitioners, and City of Staunton and Nelson County, movant *amicus curiae* in support of Conservation Petitioners and Landowner Petitioners.

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

- 1) *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042 (Oct. 13, 2017)
 (“Certificate Order”)
- 2) *Atlantic Coast Pipeline, LLC*, 164 FERC ¶ 61,100 (Aug. 10, 2018)
 (“Rehearing Order”)

Related Cases. All related cases are as stated in the Brief of Conservation Petitioners and Landowner Petitioners.

DATED: April 12, 2019

Respectfully submitted,

/s/ Richard L. Revesz
Richard L. Revesz
Counsel for Amicus Curiae
Institute for Policy Integrity

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

A single *amicus curiae* brief is not practicable in this case. The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”) is aware of two *amicus curiae* briefs to be filed in this case. Policy Integrity understands that an *amicus* brief filed by the Natural Resources Defense Council on behalf of itself and ten organizations is limited to whether the Federal Energy Regulatory Commission (“FERC”) properly took into account environmental justice concerns when approving the Atlantic Coast Pipeline Project (“the Project”). Policy Integrity understands that an *amicus* brief filed by the City of Staunton and County of Nelson is limited to FERC’s failure to address concerns about construction of the Project in karst and on steep slopes and about particular interests of localities. Policy Integrity does not have a position on these subjects. Policy Integrity files this *amicus* brief in order to provide this Court with additional information on FERC’s failure to fully consider the climate change consequences of the Project, including its refusal to use the Social Cost of Carbon, a crucial economic methodology for calculating climate damages. Policy Integrity understands that movant *amici* do not have a position on the use of the Social Cost of Carbon in agency decisionmaking.¹

¹ While the Natural Resources Defense Council has generally supported the Social Cost of Carbon, the groups it is representing in this proceeding—Center for Earth Ethics; Kairos Center for Religions, Rights, and Social Justice; North Carolina Poor

As a result, filing a single brief is not “practicable.” However, Policy Integrity coordinated with those movant *amici* and worked to streamline briefing by ensuring that there would be no substantive overlap of issues included in this brief and other *amicus* briefs. As such, per D.C. Cir. R. 29(d), Policy Integrity now files its own separate *amicus* brief.

Under Fed. R. App. P. 29(a), 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.

People’s Campaign; Repairers of the Breach; Satchidananda Ashram–Yogaville; Union Grove Baptist Church; Virginia Interfaith Power & Light; Virginia State Conference, NAACP; and WE ACT for Environmental Justice—do not have a position on the Social Cost of Carbon.

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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 in this brief:

Atlantic Coast Pipeline Project or the Project	the Atlantic Coast Pipeline Project; and related Supply Header Project consisting of modifications to existing Dominion Transmission, Inc. facilities; and capacity leases on the Piedmont Natural Gas Company, Inc. system
Certificate Order	<i>Atlantic Coast Pipeline, LLC</i> , 161 FERC ¶ 61,042 (Oct. 13, 2017)
Conservation Petitioners	Appalachian Voices, Chesapeake Bay Foundation, Chesapeake Climate Action Network, Cowpasture River Preservation Association, Friends of Buckingham, Friends of Nelson, Highlanders for Responsible Development, Piedmont Environmental Council, Shenandoah Valley Battlefields Foundation, Shenandoah Valley Network, Sierra Club, Inc., Sound Rivers, Inc., Virginia Wilderness Committee, Wild Virginia, Inc., and Winyah Rivers Foundation
EIS	Environmental Impact Statement
FEIS	Atlantic Coast Pipeline and Supply Header Project Final Environmental Impact Statement, Docket Nos. CP15-554-000, CP15-554-001, CP15-555-000, CP15-556-000 (2017)
FERC	Federal Energy Regulatory Commission
LaFleur Rehearing Dissent	<i>Atlantic Coast Pipeline, LLC</i> , 164 FERC ¶ 61,100 (Aug. 10, 2018) (LaFleur, Comm’r, <i>dissenting</i>)

GLOSSARY OF ACRONYMS AND ABBREVIATIONS (cont.)

NAS 2017 Report	Nat'l Acads. Sci., Eng'g & Med., <i>Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide</i> (2017)
NEPA	National Environmental Policy Act
Policy Integrity	The Institute for Policy Integrity at New York University School of Law
Rehearing Order	<i>Atlantic Coast Pipeline, LLC</i> , 164 FERC ¶ 61,100 (Aug. 10, 2018)
SMP Project Remand	<i>Fla. Se. Connection, LLC</i> , 162 FERC ¶ 61,233 (Mar. 14, 2018)
Working Group	The 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”)¹ submits this brief as *amicus curiae* in support of Conservation Petitioners’ petitions for review of the Federal Energy Regulatory Commission (“FERC”) order approving a certificate of public convenience and necessity for the Atlantic Coast Pipeline Project and related Supply Header Project consisting of modifications to existing Dominion Transmission, Inc. facilities; and capacity leases on the Piedmont Natural Gas Company, Inc. system (“Atlantic Coast Pipeline Project” or “the Project”), *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042 (Oct. 13, 2017) (“Certificate Order”); and of the denial of rehearing of that order, *Atlantic Coast Pipeline, LLC*, 164 FERC ¶ 61,100 (Aug. 10, 2018) (“Rehearing Order”).

Policy Integrity is a nonpartisan think tank dedicated to improving government decision-making through advocacy and scholarship in administrative law, economics, and environmental policy. Policy Integrity has produced extensive scholarship on the balanced use of economic analysis in regulatory decisions and resource management, with a particular focus on the proper scope and estimation of costs and benefits, including the social cost of carbon. Our director, Professor

¹ This brief does not purport to represent the views of New York University School of Law.

Richard L. Revesz, has published more than eighty articles and books,² including articles with Nobel Prize winner Kenneth Arrow and other prominent economists on the social cost of carbon. Richard L. Revesz & Kenneth Arrow, et al., *The Social Cost of Carbon: A Global Imperative*, 11 Rev. Envtl. Econ. & Pol’y 172 (2017); Richard L. Revesz & Kenneth Arrow, et al., *Global Warming: Improve Economic Models of Climate Change*, 508 Nature 173 (2014). Our legal director, Jason Schwartz, has published numerous articles on using the social cost of carbon in agency decisionmaking. 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). Policy Integrity recently released a report analyzing FERC’s legal obligations to incorporate greenhouse gas emissions into natural gas pipeline certificate proceedings. Jayni Hein, Jason Schwartz & Avi Zevin, *Pipeline Approvals and Greenhouse Gas Emissions* (2019).³

Harnessing this academic background and to further its long-standing interest in ensuring that government agencies value significant climate damages, Policy Integrity has participated in numerous proceedings that consider agencies’ climate

² See *Publications of Richard L. Revesz*, NYU School of Law, <https://its.law.nyu.edu/facultyprofiles/index.cfm?fuseaction=profile.publications&personid=20228> (last visited April 12, 2019).

³ Available at https://policyintegrity.org/files/publications/Pipeline_Approvals_and_GHG_Emissions.pdf.

analyses. *E.g.*, Br. of Institute for Policy Integrity as *Amicus Curiae*, *Delaware Riverkeeper Network v. FERC*, No. 18-1128 (D.C. Cir. Dec. 28, 2018) (addressing FERC’s failure to use the Social Cost of Carbon in an environmental review); Br. of Institute for Policy Integrity as *Amicus Curiae*, *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654 (7th Cir. 2016) (addressing use of the Social Cost of Carbon to support setting energy efficiency standards); Institute for Policy Integrity et al., *Joint Comments on Using the Social Cost of Greenhouse Gases to Weigh the Climate Impacts of New Natural Gas Transportation Facilities in Environmental Analyses and in Reviews of Public Convenience and Necessity*, Docket No. PL18-1-000 (July 25, 2018) (urging FERC to use the Social Cost of Carbon in reviews under the National Environmental Policy Act (“NEPA”)).⁴

In this case, Conservation Petitioners assert that FERC’s review of the Project’s environmental impacts pursuant to NEPA, and subsequent approval of a certificate of public convenience and necessity for the Project, arbitrarily failed to consider the value of climate damages caused by the Project, despite the availability of a tool to do so—namely, the Social Cost of Carbon. Joint Opening Br. of Conservation Pet’rs and Landowner Pet’rs 36-41, Docket No. 1781445. Policy Integrity’s expertise on the development and use of the Social Cost of Carbon by

⁴ Available at https://policyintegrity.org/documents/Joint_Comments_FERC_Pipeline_NOI_Comments_072518.pdf.

agencies across the federal government, and its appropriate role in NEPA reviews, gives *amicus* a special perspective from which to evaluate those claims.

Policy Integrity has conveyed to the parties its interest in this case and all parties have consented to the filing of this brief.

SUMMARY OF ARGUMENT

If constructed, the Atlantic Coast Pipeline Project will be responsible for greenhouse gas emissions that will result in substantial climate damages. Yet, FERC's final Environmental Impact Statement ("EIS") presents only the volume of greenhouse gases that will be emitted due to the Project, and not, as NEPA requires, the actual environmental effects or their significance. FERC never mentions the Project's contributions to many serious, real-world climate impacts such as property damage, increased energy demand, and lost productivity. Nor does FERC assess the intensity, context, or significance of any climate consequences.

FERC's excuse for failing to provide any meaningful climate analysis is that there is no suitable method to do so. But FERC is wrong. The Social Cost of Carbon is a widely-accepted and easy-to-use tool for attributing climate damages to an amount of greenhouse gas emissions and weighing the significance of those damages. Applying the most widely endorsed methodology, which estimates that each ton of carbon dioxide emitted will cause \$42 in climate costs, the Project's

operational and downstream greenhouse emissions will cause over \$1.3 billion per year of climate damages.

FERC's reasons for rejecting the Social Cost of Carbon are inconsistent with its own description of the tool's purpose and use, with the consensus of experts, with the practice of other federal agencies, and with FERC's choices to monetize other effects. Given the availability of this widely-accepted tool, FERC's failure to contextualize and assess the significance of this Project's climate impacts is arbitrary.

ARGUMENT

I. THE SOCIAL COST OF CARBON IS A WIDELY-ACCEPTED AND EASY-TO-USE TOOL

The Social Cost of Carbon is a general methodological approach for “estimat[ing] the monetized climate change damage associated with an incremental increase in [carbon dioxide] emissions in a given year.” Rehearing Order at P 277. 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 12 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) (“SMP Project Remand”). Under the Working Group's particular 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 resulting economic damages. *See Working Group, Technical Support Document at 5 (2010).*⁵

In its 2016 update, the Working Group estimated that, by the year 2020, each additional ton of carbon dioxide released from any source will affect global atmospheric carbon concentrations in ways that will cause an additional \$42 in climate damages, including property damage, lost agricultural productivity, changes in energy demand, human health impacts, and other effects. *See Working Group, Technical Support Document 3-4 (2016) (providing the “central” estimate in 2007 dollars).*⁶

⁵ Available at <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>.

⁶ Available at https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf. A ton emitted in year 2020 will cause \$42 in cumulative climate damages. Once emitted, carbon dioxide stays in the atmosphere and contributes to climate damages for centuries. *Id.* at 4. The \$42 figure captures that future stream of effects, discounting future damages to present value. *Id.* at 16. Based on the economic literature, the Working Group used a 3% discount rate to calculate its central estimate and tested the sensitivity of its central estimate to the discount rate assumption by also calculating the value at rates of 5% and 2.5%. *Id.* at 19. The range for those sensitivity analyses is \$12 to \$62 per ton for year 2020 emissions. *Id.* at 4. A “high impact” estimate that reflects the potential for more catastrophic outcomes and uncertainties is \$123 for year 2020 emissions. *Id.* at 16.

The Working Group’s methodology has been widely endorsed. In 2016 and 2017, the National Academies of Sciences issued two reports that, while recommending future methodological improvements, supported the continued use of the existing Working Group estimate. Nat’l Acads. Sci., Eng’g & Med., *Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide 3* (2017) (“NAS 2017 Report”);⁷ 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).⁸ 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 Michael Greenstone, Michael Hanemann, Peter Howard, and Thomas Sterner).⁹ The U.S. Court of Appeals for the Seventh Circuit has held

Because each ton’s marginal impact rises as background atmospheric concentrations increase, the monetized harm of future emissions rises each year. Even if the Project’s annual emissions remained constant, therefore, the Project’s annual climate damages would increase each year after 2020.

⁷ Available at <https://www.nap.edu/catalog/24651/valuing-climate-damages-updating-estimation-of-the-social-cost-of>.

⁸ Available at <https://www.nap.edu/catalog/21898/assessment-of-approaches-to-updating-the-social-cost-of-carbon>.

⁹ While some academics believe the Working Group significantly undervalued the Social Cost of Carbon, such critiques are not a reason to refuse to monetize climate damages at all. *See, e.g.* Robert S. Pindyck, Comment on Proposed Rule and Regulatory Impact Analysis 2-4 (Nov. 6, 2017), available at

that agency reliance on these estimates to inform decisionmaking was reasonable. *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678 (7th Cir. 2016).

As FERC has recognized, many federal and state agencies use the Social Cost of Carbon when crafting regulations, conducting environmental reviews, and certifying energy infrastructure. *See* SMP Project Remand at P 37 (citing uses by Bureau of Ocean Energy Management and state public utility commissions).

Applying the Social Cost of Carbon to monetize the Project's climate consequences would have been straightforward. To calculate the climate consequence of the Project's emissions in year 2020, for example, FERC needed only to multiply the Project's total quantified direct and indirect greenhouse emissions in 2020 by the Working Group's Social Cost of Carbon estimate for 2020. To calculate the net present value of all damages over the Project's lifespan, FERC would do the same multiplication for each future year, discount future values to the present, and sum across all years. FERC estimates that full combustion of the Project's gas capacity would emit 29.96 million metric tons of carbon dioxide-equivalent emissions per year. Atlantic Coast Pipeline and Supply Header Project

<https://www.regulations.gov/contentStreamer?documentId=BLM-2017-0002-16107&attachmentNumber=1&contentType=pdf> (claiming agency misrepresented academic scholarship by using criticisms of Integrated Assessment Models to justify failing to monetize Social Cost of Greenhouse Gases).

Final Environmental Impact Statement, Docket Nos. CP15-554-000, CP15-554-001, CP15-555-000, and CP15-556-000 at 4-621 (2017) (“FEIS”).¹⁰ Applying the Social Cost of Carbon of \$42 per ton for year 2020 emissions, the Project’s downstream emissions just from year 2020 would cause over \$1.26 billion in climate damages. Each year of the Project’s direct operational emissions—1.35 million metric tons of carbon dioxide-equivalent, FEIS at 4-559—would cause an additional \$56.6 million in damages. In total, the Project would cause over \$1.3 billion in climate damages *each year*.

II. MONETIZING CLIMATE DAMAGES FULFILLS NEPA’S REQUIREMENT TO ASSESS “EFFECTS AND THEIR SIGNIFICANCE,” WHILE VOLUMETRIC ESTIMATES OF EMISSIONS ALONE DO NOT

“[T]he key requirement of NEPA,” the U.S. Supreme Court has ruled, is to “consider and disclose the *actual environmental effects* in a manner that . . . brings those effects to bear on decisions to take particular actions that significantly affect the environment.” *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 96 (1983) (emphasis added). NEPA requires that agencies assess “effects and their significance.” 40 C.F.R. § 1502.16. Effects are the “ecological . . . , economic, social, or health”

¹⁰ Emissions of other greenhouse gases, like methane, can be converted into carbon dioxide-equivalent units, based on their relative climate impacts.

impacts caused by actions. 40 C.F.R. § 1508.8. Determining significance “requires consideration of both context and intensity.” 40 C.F.R. § 1508.27.

As this Court has found, merely listing the quantity of emissions is insufficient under NEPA 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 Reg. Comm’n*, 685 F.2d 459, 486 (D.C. Cir. 1982), *rev’d sub nom. on other grounds Balt. Gas & Elec. Co.*, 462 U.S. at 106-07. “[I]t is not releases of [radiation] that Congress wanted disclosed; it is the *effects, or environmental significance*, of those releases.” *Id.* at 487 (emphasis added).

Here, FERC identifies the volume of greenhouse gases released, FEIS at 4-559, 4-621, vaguely concedes that these emissions would “contribute incrementally to climate change,” *id.* at 4-620, and then lists some broad categories of climate impacts like sea level rise, disruption of fish species and habitats, heat waves, and crop damage, *id.* at 4-618 to 4-619. However, that approach falls far short of NEPA’s requirements. *See* Rehearing Order at 4-5 (LaFleur, Comm’r, *dissenting*) (“LaFleur Rehearing Dissent”) (environmental analysis fails to meet NEPA requirements “because it only quantified the GHG emissions but did not consider them”). As the U.S. Court of Appeals for the Ninth Circuit explained in an analogous case, 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. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004). Four years later, in *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172 (9th Cir. 2008), the court applied this principle to the assessment of climate impacts, holding that the Department of Transportation’s quantification of greenhouse gas emissions and general description of climate consequences, *see id.* at 1223, failed to satisfy its NEPA obligations. *Id.* at 1216 (holding mere quantification “does not evaluate the incremental impact that these emissions will have on climate change” and that agency failure to “discuss the *actual* environmental effects resulting from those emissions” was inadequate under NEPA); *see also Mont. Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096-99 (D. Mont. 2017) (rejecting argument that agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released”); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014) (“Beyond quantifying the amount of emissions . . . and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”).

The final EIS mentions only a few of the “actual” effects of climate change while omitting other key effects. For example, it does not mention at all critical

impacts such as property damages from sea-level rise and extreme weather, increased energy demand for heating and cooling in the face of temperature extremes, cardiovascular and respiratory mortality from heat-related illnesses, and scores of other serious consequences. *Compare* FEIS at 4-619 to 4-620 (citing *Third National Climate Assessment*'s sections on Northeast and Southeast regions, but not mentioning impacts to property, energy demand, mortality, et cetera); *with* U.S. Glob. Change Research Program, *Climate Change Impacts in the United States: Third National Climate Assessment* 373-381 (2014) (projecting that the Northeast's key climate impacts include hurricanes, heat-related deaths, and vulnerability of energy infrastructure).¹¹ And even for those impacts the final EIS mentions, it in no way "evaluate[s] the incremental impact" of the Project's emissions. *Ctr. for Biological Diversity*, 538 F.3d at 1216.

Instead, FERC alleges impossibility, claiming "we cannot determine the projects' incremental physical impacts on the environment caused by climate change." FEIS at 4-620; *accord* Rehearing Order at P 278. Yet FERC knows that statement is false. Five months before issuing the Rehearing Order, in response to this Court's decision in *Sierra Club v. FERC* ("*Sabal Trail*"), 867 F.3d 1357, 1375 (D.C. Cir. 2017), FERC determined that "the Social Cost of Carbon methodology

¹¹ Available at http://nca2014.globalchange.gov/system/files_force/downloads/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf.

does constitute a tool that can be used to estimate incremental physical climate change impacts.” SMP Project Remand at P 48. FERC’s reliance on a fundamental mischaracterization—one the agency corrected just months before—renders the agency’s explanation arbitrary. *City of Kansas City v. Dep’t of Hous. & Urban Dev.*, 923 F.2d 188, 194 (D.C. Cir. 1991) (“Agency action based on a factual premise that is flatly contradicted by the agency’s own record does not constitute reasoned administrative decisionmaking . . .”).

Further, FERC claims both that it “cannot [be] determine[d] whether the project’s contribution to cumulative impacts on climate change would be significant,” FEIS at 4-620; Certificate Order at P 306, and that the Project “would not significantly contribute to . . . climate change.” FEIS at 4-622. These contradictory statements encapsulate a key reason why agencies must do more than quantify emissions and describe generalized consequences of climate change: Non-monetized effects are often irrationally treated as worthless. Richard L. Revesz, *Quantifying Regulatory Benefits*, 102 Cal. L. Rev. 1423, 1434-35, 1442 (2014).

In fact, both of FERC’s conclusions are wrong. They overlook the readily available Social Cost of Carbon tool, which can translate the Project’s annual emissions into a contribution of over \$1.3 billion in additional climate damages per year, *see supra* at 9. As an economic regulator, FERC is in a better position to judge the significance of \$1.3 billion in damages than to judge tons of emissions or generic

descriptions of climate change consequences. *See* LaFleur Rehearing Dissent at 8 & n.38 (describing areas where FERC develops methodologies and exercises judgment to arrive at economic thresholds used in policymaking, such as “just and reasonable returns on equity”). Indeed, FERC routinely evaluates the relative importance of monetized benefits, weighing them against qualitative impacts. *See id.* (“Many of the core areas of the Commission’s work have required the development of analytical frameworks, often a combination of quantitative measurements and qualitative assessments. . . .”); FEIS at 4-507 to 4-508 (monetizing the Project’s energy cost savings, local economic spending, and tax revenue); *id.* at 5-29 (assessing these socioeconomic impacts from operation to be “beneficial” but that “these benefits would not be as significant as during construction”). Translating over 30 million metric tons per year of operational and downstream emissions into over \$1.3 billion per year in climate damages would have contextualized the impact, making it more accessible to the public and decisionmakers, and aiding FERC’s significance determination.

By contrast, FERC’s attempt to “provide[] context for the [greenhouse gas] emissions” by comparing them to national and regional inventories, Rehearing Order at P 280, does not satisfy FERC’s NEPA obligations. First, these comparisons completely fail to provide the meaningful context required by NEPA. FERC effectively minimizes the Project’s contribution to climate change by framing the

emissions as, for example, 0.56% of the national inventory. Certificate Order at P 305. In doing so, FERC misleads the public into thinking the emissions are close to zero or are relatively unimportant. Yet once the Project's emissions are translated into over \$1.3 billion in climate damages per year, the significance becomes apparent. Second, the comparisons do not assist FERC in analyzing the significance of the Project's emissions. FERC itself has recognized that using regional comparisons "as a benchmark for significance . . . is problematic" because the same quantity of emissions may misleadingly appear "widely different" simply by changing the denominator from a state to a regional inventory. *See* SMP Project Remand at P 28;¹² *see also* *Mont. Env'tl. Info. Ctr.*, 274 F. Supp. 3d. at 1094 (rejecting the agency's contention that it had sufficiently assessed the action's emissions by "comparing that amount to the whole of U.S. greenhouse gas emissions"); *High*

¹² Indeed, while FERC claims that the Project will contribute only 5.2% of emissions across Pennsylvania, West Virginia, Virginia, and North Carolina, Certificate Order at P 305, that percentage depends entirely on the chosen denominator. For example, the Project's gas is expected to be burned only in Virginia and North Carolina. *Id.* at P 50. Compared against just those two states' inventories, the Project would contribute 13% of emissions. *See* FEIS at 4-620. The tighter the region is drawn, the closer to 100% the Project's contributions will appear. Yet such mathematical tricks do not change the Project's actual climate contributions. Each ton of greenhouse gases causes the same incremental climate damages regardless of the location of its source. Whether the Project's contribution is labeled as 13% of regional emissions or 0.56% of national emissions is an arbitrary distinction—what matters under NEPA to judge the significance of the environmental impact is that the Project will cause \$1.3 billion in annual climate damages.

Country, 52 F. Supp. 3d at 1190 (finding that by merely “quantifying the amount of emissions relative to state and national emissions,” the agencies had insufficiently “discuss[ed] the impacts caused by these emissions”). FERC’s attempt to point to these comparisons as evidence that it “did not ignore the significance question,” Rehearing Order at P 280, is particularly misleading given the disclaimer in the EIS that the comparisons are “not an indicator of significance,” FEIS at 4-620.

Because the final EIS does not identify the Project’s actual incremental effects on climate change, does not assess those effects’ intensity and significance, and does not provide meaningful context, the final EIS violates NEPA.

III. FERC’S FAILURE TO USE AN AVAILABLE TOOL TO MONETIZE CLIMATE COSTS WHILE MONETIZING PROJECT BENEFITS IS ARBITRARY

Courts have repeatedly warned agencies against inconsistent treatment of costs versus benefits. *E.g.*, *Ctr. for Biological Diversity*, 538 F.3d at 1203 (explaining that because agency’s regulatory analysis had monetized effects like traffic and noise, its “decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious”); *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148-49 (D.C. Cir. 2011) (chastising agency for “inconsistently and opportunistically fram[ing] the costs and benefits of the rule [and] fail[ing] adequately to quantify the certain costs or to explain why those costs could not be quantified”).

Agencies cannot selectively monetize benefits in environmental impact statements to support their decisions while refusing to monetize the costs of their actions. *High Country*, 52 F. Supp. 3d at 1191. In *High Country*, the court found that it was “arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible.” *Id.* To support a decision on coal mining, the agencies had “weighed several specific economic benefits—coal recovered, payroll, associated purchases of supplies and services, and royalties,” but arbitrarily failed to monetize climate costs using the readily available Social Cost of Carbon tool. *Id.* at 1190-91. Similarly, in *Montana Environmental Information Center*, the court likewise held an environmental assessment was arbitrary and capricious because it monetized an action’s benefits (employment payroll, tax revenue, and royalties) while failing to use the Social Cost of Carbon to monetize costs. 274 F. Supp. 3d at 1094-99.¹³ Monetizing the benefits of an action while failing to monetize the costs

¹³ The courts reached these conclusions notwithstanding the agencies’ justifications for rejecting the Social Cost of Carbon. *High Country*, 52 F. Supp. 3d at 1192 & n.4 (faulting agency for “fail[ing] to explain why, if the protocol was deemed inaccurate, the agency could possibly have been justified in omitting it entirely, thereby effectively setting the cost of those emissions at \$0”); *id.* at 1192 (imprecision of estimate would be insufficient justification to “effectively zero[] out the cost in its quantitative analysis”); *Mont. Env’tl. Info. Ctr.*, 274 F. Supp. 3d at 1094-96 (considering and dismissing arguments that Social Cost of Carbon can be applied only in rulemakings and that NEPA does not require cost-benefit analysis).

misleadingly “put[s] a thumb on the scale” of the agency’s decision. *Ctr. for Biological Diversity*, 538 F.3d at 1198.

Here, FERC fails this test. While FERC refuses to use the Social Cost of Carbon to monetize the Project’s climate costs, it clearly monetized the Project’s “economic benefits” and relied on those monetized benefits in choosing among project alternatives. The final EIS catalogues many socioeconomic effects based on two economic studies submitted by the Project applicant, including \$377 million in annual energy cost savings from bringing additional natural gas to market, as well as almost \$70 million in annual direct, indirect, and induced economic output and tax revenue. FEIS at 4-507 to 4-508. FERC explicitly considers these “economic benefits” before concluding the Project is “preferable” to the no-action alternative. FEIS at 3-3; *see also* Certificate Order at P 54 (stating FERC would consider all evidence of project need submitted by applicants, including “cost savings to consumers”).

Just as the Office of Surface Mining’s refusal to monetize climate costs while monetizing additional payroll and government revenue was arbitrary, so too was FERC’s refusal to monetize climate costs. *See Mont. Env’tl. Info. Ctr.*, 274 F. Supp. 3d at 1096 (discussing monetization of payroll and taxes); *id.* at n.9 (explaining that the agency’s attempt to distinguish these monetized socioeconomic effects as “impacts” rather than “benefits” was “a distinction without a difference”).

There is no rational reason for FERC to monetize the Project's economic benefits but not its climate costs. Employment effects, for example, could easily be presented quantitatively as changes in job-years or could be discussed qualitatively as general effects on sectoral labor markets. FERC instead chose to use monetized labor income to help the public and decisionmakers understand the nature and degree of the Project's employment effects. The Social Cost of Carbon would have provided similarly meaningful context on the significance of this Project's climate effects.

IV. FERC'S OBJECTIONS TO THE SOCIAL COST OF CARBON ARE INCONSISTENT AND ARBITRARY

FERC offers a handful of reasons why it did not use the Social Cost of Carbon, and points to its reasoning in a previous order. Rehearing Order at PP 276-81 & n.753 (citing SMP Project Remand at PP 30-51). None withstand scrutiny.

FERC suggests that the Social Cost of Carbon "may not be appropriate for[] analysis of project-level decision making." Rehearing Order at P 277. But elsewhere, FERC has noted that the Social Cost of Carbon has been "appropriately used" in project-level NEPA reviews, such as by the Bureau of Land Management, the Office of Surface Mining, and the Bureau of Ocean Energy Management. SMP Project Remand at P 37 & n.76; *see also id.* at P 37 & n.77 (noting that other agencies, like the Forest Service, "have been faulted" by the courts for "fail[ing] to quantify [climate] costs given that [the] Social Cost of Carbon tool was available"). In a July 2017 EIS cited by FERC, the Bureau of Ocean Energy Management explained that

the Social Cost of Carbon was “a useful measure to assess the benefits of [carbon dioxide] reductions and inform agency decisions.” Bureau of Ocean Energy Mgmt., *Liberty Development Project: Draft EIS* at 3-129 (2017) (discussed at SMP Project Remand at P 37 n.76).¹⁴

There is no rational explanation for why the Social Cost of Carbon would be “appropriate” for the Bureau of Ocean Energy Management’s NEPA reviews but inappropriate for FERC’s. FERC has previously attempted to suggest that unlike other agencies, FERC is not directly responsible for fossil fuel production or consumption. SMP Project Remand at P 37. Yet nothing in law, science, or economics meaningfully distinguishes transportation project emissions from production or consumption project emissions. First, greenhouse gases cause the same climate impacts regardless of whether they are emitted by leaking gas pipelines or oil rigs or power plants.¹⁵ Second, pipeline projects are a legally relevant cause of downstream consumption emissions, *see Sabal Trail*, 867 F.3d at 1373, just as energy production projects are a legally relevant cause of those emissions, *see Mont. Env’tl. Info. Ctr.*, 274 F. Supp. 3d at 1093-94. Third, setting aside downstream effects,

¹⁴Available at <https://www.boem.gov/2016-010-Volume-1-Liberty-EIS>.

¹⁵ Greenhouse gases also cause the same climate impacts if emitted by different pipelines in different states. FERC appears to claim this is a reason to reject the Social Cost of Carbon. Rehearing Order at P 279. However, that one pipeline may have the same climate consequences as another does not somehow mean that those consequences should be ignored.

FERC's project approvals are undeniably directly responsible for *operational* emissions—in this case, 1.35 million metric tons of carbon dioxide-equivalent emissions per year, which will cause \$56.6 million in annual climate damages. Finally, FERC admits it was appropriate for the Department of Energy to use the Social Cost of Carbon to set refrigerator efficiency standards, SMP Project Remand at P 37 & n.76 (citing *Zero Zone*, 832 F.3d at 679). But, notwithstanding FERC's position that the Social Cost of Carbon is only appropriate for agency actions that directly control fossil fuel production or consumption, efficiency standards do neither. Rather, they alter how much electricity is required to operate equipment, thus changing consumers' energy costs and demand for electricity generated by fossil fuel combustion. FERC's pipeline certifications similarly affect greenhouse gas emissions by changing supply, price, and demand. FERC has not identified any *legally relevant* difference that makes the Social Cost of Carbon an appropriate tool to assess Department of Energy efficiency standards and Office of Surface Mining plans but not pipeline certificates.

FERC also disclaims using the Social Cost of Carbon because it “was developed to assist in rulemakings.” Rehearing Order at P 277. FERC's argument misunderstands the Social Cost of Carbon and its development. The Social Cost of Carbon is a methodological approach for measuring the marginal cost of any additional ton of carbon dioxide emitted into the atmosphere and is therefore

appropriate for any decisionmaking context. Though it is true that the Working Group’s particular estimates and *Technical Support Documents* were originally published to guide regulatory analyses, the product of its work—marginal climate damages per ton of emissions—is the same whether the emissions resulted from regulations or projects. Consequently, FERC has identified yet another distinction without a legally relevant difference. *See Mont. Env’tl. Info. Ctr.*, 274 F. Supp. 3d at 1095-96 (rejecting argument that Social Cost of Carbon was inapplicable because it was designed for rulemaking); *High Country*, 52 F. Supp. 3d at 1192 (same).

In addition, FERC claims that the Social Cost of Carbon “no longer represents government policy,” Rehearing Order at P 277, an allusion to the March 2017 withdrawal of the Working Group’s *Technical Support Documents* by Executive Order. Exec. Order No. 13,783 § 5(b), 82 Fed. Reg. 16,093 (Mar. 28, 2017). But that same Executive Order instructs agencies to use the “best available science and economics” to “monetiz[e] the value of changes in greenhouse gas emissions.” Exec. Order No. 13,783 § 5(a), (c). The Working Group’s methodology and central estimate have been endorsed as the best estimates available, even following Executive Order 13,783. *See Revesz et al.*, 357 Science 655; *see also Liberty Development Project: Draft EIS, supra*, at 3-129, 4-246, 4-247 (continuing to use the Working Group’s estimates several months after Executive Order 13,783). Even without a federally uniform estimate, FERC is still obligated under NEPA to

monetize climate damages to the best of its abilities. *Ctr. for Biological Diversity*, 538 F.3d at 1203 (requiring agency to monetize greenhouse gas emissions, before development of Working Group’s estimates). Moreover, FERC has not explained how an Executive Order would affect its ability, as an independent agency, to continue using the Working Group’s estimates or underlying methodology.

FERC suggests that it could not monetize climate costs using the Social Cost of Carbon without conducting a full cost-benefit analysis, and that some effects are not currently monetizable. Rehearing Order at P 281; *see also* SMP Project Remand at PP 40-41. Of course, this argument did not prevent FERC from monetizing energy savings, induced economic activity, state and local tax revenue, and other so-called “economic benefits.” FEIS at 3-3, 4-507, 4-508. NEPA requires assessing the intensity, context, and significance of each important effect. 40 C.F.R. § 1508.27. When monetizing an effect reveals its intensity, context, and significance—as the Social Cost of Carbon does for climate effects—then monetization is appropriate and useful under NEPA even if other costs or benefits are only discussed qualitatively. While NEPA regulations state that, when there are “important qualitative considerations,” the analysis should not be *exclusively* a “monetary cost-benefit analysis,” NEPA regulations permit relevant monetized benefits to be presented alongside any unquantified analysis. 40 C.F.R. § 1502.23. In other words, the fact that FERC cannot monetize some effects does not mean that it can therefore

fail to monetize other effects for which methodologies are readily available. *See also High Country*, 52 F. Supp. 3d at 1191 (requiring monetization of climate impacts “[e]ven though NEPA does not require a cost-benefit analysis”). As Commissioner LaFleur observed in a recent Order, the Environmental Protection Agency concluded in comments to FERC that “even absent a full [cost-benefit analysis], [Social Cost of Carbon and other greenhouse gases] estimates may be used for project analysis when FERC determines that a monetary assessment of impacts . . . provides useful information in its environmental review.” *PennEast Pipeline Co. LLC*, 164 FERC ¶ 61,098 at 6 (Aug. 10, 2018) (LaFleur, Comm’r, *concurring in part and dissenting in part*). Given the nature of climate change and the availability of a tool that captures its varied and long-lasting effects, monetization is particularly appropriate for this subset of impacts. FERC is not being asked to conduct a full cost-benefit analysis, nor would monetizing climate consequences require FERC to do so.

FERC also expressed concern about a “significant variation in results” from using the Social Cost of Carbon because “there is no consensus on the appropriate discount rate to be used.” Rehearing Order at P 276; Certificate Order at 307. This Court has upheld FERC’s 2014 rejection of the Social Cost of Carbon, where FERC concluded that discount rate uncertainty at the time made the “tool inadequately

accurate.” *EarthReports, Inc. v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016).¹⁶ More recently, this Court ordered FERC to reassess whether that reasoning “still holds.” *Sabal Trail*, 867 F.3d at 1375. Yet FERC has simply reaffirmed its prior reasoning, SMP Project Remand at P 49, without grappling with any new developments. Namely, to the extent there ever was a lack of consensus about the appropriate discount rate, recent reports from the National Academies of Sciences, among other sources, make clear that a 3% discount rate or lower is appropriate. *See* NAS 2017 Report at 32-33 (explaining that a consumption rate of interest, approximately 3%, is the appropriate basis for a discount rate for climate effects).¹⁷ The Working Group

¹⁶ In *EarthReports*, this Court did not substantively evaluate the two additional reasons FERC gave for its rejection: that the tool does not measure incremental impacts of emissions, and that there are no established criteria for identifying whether a given monetized damage value is significant. 828 F.3d at 956. These reasons were repeated in the Certificate Order, Certificate Order at 307, and are addressed *supra* at 12-13, *infra* at 27. Similarly, this Court’s recent decision to reject a challenge to FERC’s failure to use the Social Cost of Carbon was not based on a substantive evaluation of FERC’s reasoning, but rather on limited briefing. *See Appalachian Voices v. FERC*, No. 17-1271 (and consolidated cases), 2019 WL 847199, at *2 (D.C. Cir. Feb. 19, 2019) (rejecting petitioners’ challenge because “their opening brief also fails to address several of the reasons FERC gave for rejecting the Social Cost of Carbon tool”).

¹⁷ FERC has pointed to Office of Management and Budget guidance on cost-benefit analysis, *Circular A-4*, to justify its claim that it should use discount rates of 3% and 7%, which “introduces substantial variation.” SMP Project Remand at PP 46, 49. However, as a key member of the Working Group, the Office of Management and Budget has made clear that *Circular A-4* supports a 3% discount rate: “[T]he use of 7 percent is not considered appropriate for intergenerational discounting. There is wide support for this view in the academic literature, and it is recognized in Circular

recommends a “central” estimate based on a 3% discount rate; estimates based on a 5% or 2.5% discount rates are provided for sensitivity analysis. *Technical Support Document*, *supra* note 6, at 6. Other agencies have had no problem using the manageable range of Working Group estimates based on these discount rates. *See, e.g. Liberty Development Project: Draft EIS*, *supra*, at 3-129, 4-246, 4-247 (finding application of a range of estimates “useful”). In its final EIS, FERC also found ranges of impacts to be useful rather than misleading. *See* FEIS at 5-5, 4-488, 4-507, 4-507 n.26 (reporting three different construction employment estimates but claiming the range nonetheless “show[s] general impacts” despite the differences); *id.* at 4-379 (reporting an \$8.5-\$12 million range for estimated tourism revenue that the Project could disrupted). Furthermore, the idea that agencies can avoid monetizing climate damages just because there is some variation in estimates has been specifically rejected by the courts. *Ctr. for Biological Diversity*, 538 F.3d at 1200 (holding that while “there is a range of values, the value of carbon emissions reduction is certainly not zero,” and rejecting any distinction between assigning “no value” and assigning “zero value”); *see also High Country*, 52 F. Supp. 3d at 1192.

A-4 itself.” Working Group, *Response to Comments: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12,866* at 36 (2015), <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-response-to-comments-final-july-2015.pdf>.

Finally, FERC “conclude[s] that using the Social Cost of Carbon would not assist us in determining whether . . . emissions are significant” because there is “no basis to designate a particular dollar figure . . . as ‘significant.’” Rehearing Order at 279; *accord* Certificate Order at 307. However, the requirement that FERC identify significant environmental consequences *supports* monetization. First, a key advantage of the Social Cost of Carbon is that it groups together the multitude of climate impacts and, consistent with NEPA regulations, 40 C.F.R. § 1508.27(b)(7), enables FERC to assess whether all those impacts are cumulatively significant. Second, as explained, *supra* at 13-14, the significance of monetized consequences can be more readily evaluated by an economic regulator such as FERC, compared to merely quantifying emissions and listing general consequences of climate change. Given NEPA’s definition of significance in terms of context and intensity, 40 C.F.R. § 1508.27, FERC cannot merely point to uncertainty about a dollar threshold as a basis for refusing to use a tool that provides an easy-to-grasp measure of the context and intensity of climate consequences.

In short, FERC offers no rational argument against using the Social Cost of Carbon. The Project’s climate costs should be monetized to fulfill NEPA’s requirements to assess actual, real-world effects along with their intensity, context, and significance, particularly when, as here, the agency has monetized a project’s

economic benefits. Consequently, FERC's failure to use the Social Cost of Carbon was arbitrary and violated NEPA.

CONCLUSION

This Court should vacate and remand FERC's Certificate Order for the Atlantic Coast Pipeline Project as arbitrary and capricious.

Respectfully submitted,

/s/ Richard L. Revesz
Richard L. Revesz
Jason A. Schwartz
Avi Zevin
INSTITUTE FOR POLICY INTEGRITY
139 MacDougal Street
New York, NY 10012
(212) 992-8932
richard.revesz@nyu.edu
Counsel for Amicus Curiae
Institute for Policy Integrity

DATED: April 12, 2019

CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 29(a)(4)(G) and Fed. R. App. P. 32(g)(1), I hereby certify that this brief complies with the type-volume limitations of Fed. R. App. P. 29(a)(5) because it contains 6500 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 length of a parties' principal brief under Fed. R. App. P. 32(a)(7)(B).

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.

Respectfully submitted,

/s/ Richard L. Revesz

Richard L. Revesz

Jason A. Schwartz

Avi Zevin

INSTITUTE FOR POLICY INTEGRITY

139 MacDougal Street

New York, NY 10012

(212) 992-8932

richard.revesz@nyu.edu

Counsel for Amicus Curiae

Institute for Policy Integrity

DATED: April 12, 2019

CERTIFICATE OF SERVICE

Pursuant to Fed. R. App. P. 25(d), I hereby certify that on April 12, 2019, I filed the foregoing *Amicus Curiae* Brief in Support of Conservation Petitioners and Rule 26.1 Disclosure Statement through the Court's CM/ECF system, which will send a notice of filing to all registered CM/ECF users, except for the following counsel, which I have served via U.S. Mail:

Michael J. Hirrel
1300 Army Navy Dr., #1024
Arlington, VA 22202-2020
(703) 522-8577
mhirrel@law.gwu.edu

DATED: April 12, 2019

Respectfully submitted,

/s/ Richard L. Revesz
Richard L. Revesz
Counsel for Amicus Curiae
Institute for Policy Integrity