ORAL ARGUMENT NOT YET SCHEDULED

No. 18-1188

In the United States Court of Appeals for the District of Columbia Circuit

OTSEGO 2000 AND JOHN VALENTINE; MARYANN VALENTINE,
Petitioners,
v.

FEDERAL ENERGY REGULATORY COMMISSION,
Respondent,

DOMINION ENERGY TRANSMISSION, INC.,
Intervenor.

ON PETITION FOR REVIEW
FROM THE FEDERAL ENERGY REGULATORY COMMISSION

PROOF BRIEF FOR SIERRA CLUB AS AMICUS CURIAE SUPPORTING PETITIONERS

Meagan Burton
Moneen Nasmith
Earthjustice
48 Wall Street, 15th Floor
New York, NY
(212) 823-4982
mburton@earthjustice.org
mnasmith@earthjustice.org

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Counsel for Amicus Curiae

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1, amicus curiae Sierra Club submits that it has no parent corporations and no publicly issued stock shares or securities. No publicly held corporation holds stock in the amicus curiae.

STATEMENT OF COUNSEL PURSUANT TO FEDERAL RULE OF APPELLATE PROCEDURE 29(C)(5)

Counsel for Amicus hereby states that no counsel for any party to this litigation authored this brief in whole or in part; no party or party's counsel contributed money that was intended to fund, or did fund, the preparation or submission of this brief; and no person, other than Sierra Club, contributed money that was intended to fund, or did fund, the preparation or submission of this brief.

STATEMENT OF COUNSEL PURSUANT TO FEDERAL RULE OF APPELLATE PROCEDURE 29(A) AND D.C. CIRCUIT LOCAL RULE 29(B)

All parties to this litigation have consented to the participation of Sierra Club in this matter and to the filing of this brief.

CERTIFICATE OF PARTIES, RULINGS UNDER REVIEW, AND RELATED CASES

The parties in this case, rulings under review, and related cases are set forth in the opening brief of Petitioners.

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EA	*Dominion Transmission, Inc.*, Environmental Assessment (Oct. 20, 2015)
FERC	Federal Energy Regulatory Commission
IPCC Report	Intergovernmental Panel on Climate Change, Global Warming of 1.5ºC, Summary for Policymakers (2018)
Nat'l Climate Assessment	U.S. Global Change Research Program, Fourth National Climate Assessment (Vol. II) Impacts, Risks, and Adaptation in the United States (2018)
NEPA	National Environmental Policy Act
Order	*Dominion Transmission, Inc.* 163 FERC ¶ 61,128 (2018).
Otsego Rehearing Request	*Dominion Transmission, Inc.*, Amended Request for Rehearing of Otsego 2000 et al., (June 2, 2018)
Project	Certain compression and related facilities in Chemung, Herkimer, Madison, Montgomery, Schenectady, and Tompkins Counties, New York providing 112,000 dekatherms per day of firm gas transportation

IDENTITY AND INTEREST OF AMICUS CURIAE

Sierra Club is a national nonprofit organization incorporated in the State of California as a Nonprofit Public Benefit Corporation, with over 700,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; practicing and promoting the responsible use of the earth's ecosystems and resources; educating and enlisting humanity to protect and restore the quality of the natural and human environment; and using all lawful means to carry out these objectives. Sierra Club has more than 50,000 members in New York, and more than 30,000 members in Pennsylvania. On behalf of its members in these states and across the country, Sierra Club has successfully challenged legally-deficient environmental reviews of fossil fuel projects.

Sierra Club supports Petitioners' petition for review, because the Federal Energy Regulatory Commission ("FERC" or the "Commission") approved certain compression and related facilities in six counties in New York to expand capacity of a pipeline and deliver 112,000 dekatherms of gas from Clinton County Pennsylvania to Montgomery County, New York (the "Project") without analyzing the full range of Project's climate change impacts, as required by the National Environmental Policy Act ("NEPA"). Sierra Club submits this brief to highlight the broader implications of FERC's decision here, and FERC's clear legal obligations to fully account for climate change impacts under both NEPA and the

D.C. Circuit's recent decision in *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) ("*Sabal Trail*"). The brief will discuss the paramount importance of calculating the amount of greenhouse gas emissions that result from projects the Commission reviews and analyzing how those emissions will contribute to climate change—tasks that are eminently feasible and required under NEPA.

STATEMENT OF THE CASE

Sierra Club refers the Court to Petitioners' Statement of the Case.

SUMMARY OF THE ARGUMENT

The world's leading climate scientists have warned that there is limited time left to curb greenhouse gas emissions, prevent global warming, and limit the serious harms caused by climate change.[1] The federal government's top climate experts agree that the amount of greenhouse in the atmosphere already has caused warming linked to devastating hurricanes, record droughts, and forest fires.[2] Every fraction of additional warming that occurs will worsen the frequency and severity of these kinds of natural disasters and expose additional populations to new threats such as food and water shortages. Substantial cuts to the volume of global greenhouse gas emissions are needed to avoid the worst of the impacts—ideally cutting 2010 emission levels by 45 percent by 2030 and reaching net zero emissions by 2050.[3] Achieving these deep and necessary cuts will require rapid and far-reaching transitions, including providing at least 77 percent of global electricity via renewables by 2050.[4]

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[1] Intergovernmental Panel on Climate Change, Global Warming of 1.5ºC, Summary for Policymakers, 14 (2018) (hereinafter IPCC Report).
[2] U.S. Global Change Research Program, Fourth National Climate Assessment (Vol. II) Impacts, Risks, and Adaptation in the United States (2018) (hereinafter Nat'l Climate Assessment).
[3] IPCC Report at 14.
[4] *Id.* at 16.

As the federal agency responsible for evaluating major gas infrastructure projects under the Natural Gas Act and NEPA, FERC bears the responsibility for evaluating the environment impacts of the projects it approves, including the greenhouse gas emissions that will result from each project. Gas production, transportation, and usage all cause significant greenhouse gases emissions, including methane and carbon dioxide. Every time the Commission approves a gas project, it locks decades of fossil fuel use and greenhouse gas emissions in place, generally the opposite of making the cuts desperately needed to avert climate disaster.

Despite the obvious threat posed by permitting projects that will cause additional greenhouse emissions, FERC announced in its decision in *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128 (2018) (hereinafter Order) that it now will arbitrarily limit its consideration of greenhouse gas emissions to only those directly emitted by the projects it considers. The Commission will ignore the emissions that will be produced as a result of the project—either upstream during production and transmission from the wells or downstream when the gas is burned. FERC's refusal to consider the full set of climate impacts caused by its projects flies in the face of its responsibilities under NEPA and this Court's decision in *Sabal Trail*. There are tools and methodologies that would permit the Commission to calculate the full extent of a project's greenhouse gas emissions and analyze how those

emissions contribute to climate change. FERC's refusal to engage in the required efforts and treat a project's upstream and downstream emissions as if they did not exist contrary to NEPA and a dangerous abdication of responsibility by a federal agency in charge of fossil fuel projects that will produce millions of tons of greenhouse gases.

ARGUMENT

FERC's Order sets a dangerous precedent for future projects by announcing that, going forward, the Commission intends to truncate its review of projects' greenhouse gases and ignore all greenhouse gas emissions from a project except those emitted directly by the project itself. FERC's decision flies in the face of this Court's finding that NEPA prohibits the Commission from viewing the climate change impacts of its projects in isolation, because the gas they serve to transport ultimately will be combusted somewhere and result in greenhouse gas emissions. *Sabal Trail*, 867 F.3d at 1371. It is equally true that the gas flowing through FERC's projects must be produced and transported from somewhere, also resulting in the emission of greenhouse gases. FERC's decision to limit its review to what often is the smallest portion of the greenhouse gases a project will emit—here roughly only 3 percent of the Project's total yearly emissions—is irrational and should be vacated

The Commission's excuses for refusing to consider substantial amounts of a project's greenhouse gas emissions are factually incorrect and contrary to NEPA and this Court's clear commands. The greenhouse gas emissions from producing, transmitting, and combusting the gas that will travel through a project approved by FERC must and can be quantified. Only by quantifying the full range of emissions caused by a project and analyzing how those emissions will contribute to climate change by using a tool such as the social cost of carbon and assessing whether and how the emissions will affect attainment of state, regional, and national climate goals can the Commission engage in the reasoned decision-making required under NEPA.

I. NEPA REQUIRES THAT FERC QUANTIFY ALL OF A PROJECT'S REASONABLY FORESEEABLE GREENHOUSE GAS EMISSIONS.

NEPA prohibits FERC from ignoring environmental impacts that are reasonably foreseeable effects of authorizing a project, including greenhouse gas emissions that will occur from combusting, producing, and transmitting gas that will travel in a pipeline. *See id.* at 1371–74. The Commission's protestations that it lacks information and that there is too much uncertainty do not excuse its refusal to calculate the full extent of a project's greenhouse gas emissions, because the burden is on FERC to use best efforts to obtain missing information, deal with uncertainty, and engage in reasonable forecasting to calculate emissions. And contrary to FERC's assertions, it is eminently feasible for the Commission to

quantify the greenhouse emissions that reasonably will occur upstream and downstream as a result of the projects it approves. Well-known tools exist that would allow the Commission to undertake this analysis, including ones that FERC itself has used in the past.[5]

A. There Is a Reasonably Close Causal Relationship Between FERC's Projects and Upstream and Downstream Greenhouse Gas Emissions.

Recent case law from this Court makes clear that if the Commission has the power to deny a project from going forward on the grounds that it would be too harmful to the environment, it is the "legally relevant cause" of the reasonably foreseeable environmental effects of that project. *Sabal Trail*, 867 F.3d at 1373–74; *see also Sierra Club v. FERC*, 827 F.3d 36, 47 (D.C. Cir. 2016). This Court found that the downstream emissions from combustion were reasonably foreseeable effects of a pipeline designed to supply gas, *see Sabal Trail*, 867 F.3d at 1373, as are the upstream emissions from producing and transmitting the gas needed to fill FERC's projects. Where it is not merely likely, but almost certain that the procurement and combustion of gas that will flow through FERC's projects will produce greenhouse gases, the Commission undoubtedly must account for those emissions when evaluating the project. *See id.* at 1371.

[5] *See, e.g., Constitution Pipeline Co., LLC*, Final Environmental Impact Statement (Oct. 24, 2014).

For purposes of establishing that causal relationship, it does not matter whether the greenhouse gas emissions that will result from production and consumption of a project's increased gas capacity "will likely occur regardless of the Commission's approval of the [Project]." *See* Order at P 41. The relevant inquiry under *Sabal Trail* is whether the Commission has the authority to reject the project based on its environmental harms, not whether those harms might nevertheless occur in the absence of the project through some other means. *See* 867 F.3d at 1364–65.

Allowing FERC's interpretation here to stand would eviscerate this Court's holding in *Sabal Trail*. As Commissioner Glick stated, under FERC's view, "even if the Commission knows that new pipeline facilities would have an environmental impact—in this case, causing greenhouse gas emissions by facilitating additional production and consumption of natural gas—the Commission is not obligated to consider those impacts unless the Commission knows definitively that the production and consumption would not occur absent the pipeline." Order (Glick, Comm'r, dissenting). FERC almost always could claim that combustion and production of gas would occur in the absence of the precise project it was reviewing. And *Sabal Trail* does not suggest that it would have been relevant to show that gas supplied by the pipelines at issue hypothetically could have been procured elsewhere.

Not only is FERC's approach precluded by *Sabal Trail*, it also is factually incorrect. FERC's unsubstantiated assumption that without the Project, consumers would demand and combust the exact same amount of gas, and substitute suppliers would perfectly fill in for the Project, is utterly irrational. Project applicants seek certificates for particular transportation projects because those projects will generate the greatest profits for them. Similarly, shippers sign agreements for gas transmission service when that service is economically preferable to alternative transportation options. As Commissioner Glick stated "if a proposed pipeline neither increases the supply of natural gas available to consumers nor decreases the price that those consumers would pay, it is hard to imagine" how the Commission could conclude that the pipeline was "needed," Order (Glick, Comm'r, dissenting), which it must do in order to approve the project under the Natural Gas Act. *See* 15 U.S.C. § 717f(e).[6]

In addition, basic principles of supply and demand hold that a project that increases the supply of gas will lower the market price of gas and increase consumer demand, consumption of gas, and therefore foster additional gas

[6] *See also Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *clarified*, 90 FERC ¶ 61,128 (1999), *further clarified*, 92 FERC ¶ 61,094 (2000).

production.[7] *See, e.g.*, *WildEarth Guardians v. Bureau of Land Mgmt.*, 870 F.3d 1222, 1236 (10th Cir. 2017) (holding that the agency's "perfect substitution assumption . . . is irrational (i.e., contrary to basic supply and demand principles)."); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549–50 (8th Cir. 2003) (invalidating a NEPA review for "illogical[ly]" concluding that approving new transportation routes for coal would not affect demand for and consumption of coal)[8]. It therefore is irrational to conclude that supply and demand are unaffected by FERC projects.

B. The Commission Cannot Use Uncertainty or a Lack of Information as a Justification for Ignoring a Project's Greenhouse Gas Emissions.

FERC cannot ignore a project's upstream and downstream greenhouse gas emissions because allegedly it has insufficient information or there is too much

[7] *See generally* N. Gregory Mankiw, *Principles of Economics*, 74–78, 80–81 (5th ed. 2008); *id.* at 463 (explaining that the perfect substitution the Commission assumes will exist here can happen only in an "extreme case" and under conditions not present in this case).

[8] FERC has previously mischaracterized *Mid States*, claiming that it was distinguishable because "the project proponent did not dispute" that "the proposed project would increase the [end] use" of the resource. *Dominion Transmission, Inc.*, Order Issuing Certificate, 155 FERC ¶ 61,106, P 79 (2016). Although the applicant in *Mid States* admitted its project would change demand for coal, 345 F.3d at 549, the Surface Transportation Board—the entity conducting the NEPA review—argued that "the demand for coal will be unaffected by an increase in availability and a decrease in price, which is the stated goal of the project," *id.* The Board's assumption of perfect substitution—the same assumption FERC makes now—is what the Eighth Circuit found to be "illogical," *id.*, and a violation of NEPA, *id.* at 550.

uncertainty, particularly when the Commission has made no effort to collect additional information and refuses to engage in any kind of reasonable estimation or forecasting. NEPA plainly requires more and, indeed, flatly precludes the Commission's approach.

In conducting a NEPA review, the Commission is obligated "[to] use its best efforts to find out all that it reasonably can." *Barnes v. Dep't of Transp.*, 655 F.3d 1124, 1136 (9th Cir. 2011). FERC has not come close to complying with this requirement, as it has not even undertaken the simple task of asking the applicant for information on where a project's gas will be burned or produced. *See* Order (Glick, Comm'r, dissenting). NEPA mandates that agencies at least *try* to obtain missing information, unless "the overall costs of obtaining it" are "exorbitant," or "the means to obtain it are not known." *See* 40 C.F.R. § 1502.22(a)–(b); *Fund for Animals v. Norton*, 294 F. Supp. 2d 92, 111 (D.D.C. 2003) ("this failure to even consider taking the steps necessary to gather relevant information result[ed] in an incomplete [NEPA] analysis."). The Commission has not shown that the cost of obtaining further information on downstream or upstream emissions would be exorbitant. And while the Commission has claimed that the unavailable information is impossible to obtain, it has not supported those claims, because information is deemed "unobtainable" only when there is no available methodology to procure it. *See Sierra Club v. Marita*, 46 F.3d 606, 623 (7th Cir.

1995). In addition, if information genuinely cannot be obtained, the Commission nevertheless must evaluate the importance of the missing information, or risk the court "call[ing] into question the validity of the [agency's] conclusions about the impacts of the proposed action." *See Cabinet Res. Grp. v. U.S. Fish & Wildlife Serv.*, 465 F. Supp. 2d 1067, 1099–1100 (D. Mon. 2006); *see also* 40 C.F.R. § 1502.22(b)(1)(2). FERC has done none of the above.

The Commission also may not use the existence of some uncertainty on where the gas originates or will be consumed as a justification for burying its head in the sand and effectively treating upstream and downstream emissions as if they do not exist. *See Ctr. for Biological Diversity v. Bureau of Land Mgmt*., 937 F. Supp. 2d 1140, 1159 (N.D. Cal. 2013) (NEPA requires further collection of data where doing so would resolve uncertainty or prevent speculation on potential effects). NEPA compels agencies to consider uncertainty when deciding whether to evaluate the environmental impacts of a proposed action, and to eliminate that uncertainty as much as possible where it exists. *See* 40 C.F.R. § 1508.27(b)(5). Indeed, grappling with uncertainty is the purpose of NEPA, so that agencies can anticipate and minimize adverse environmental impacts to the greatest extent possible. *Del. Riverkeeper v. FERC*, 753 F.3d 1304, 1310 (D.C. Cir. 2014). Even in the face of uncertainty, "[t]he basic thrust of an agency's responsibilities under the NEPA is to predict the environmental effects of proposed action before the

action is taken and those effects fully known." *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973); *see also Sierra Club v. Dep't of Energy*, 867 F.3d 189, 198 (D.C. Cir. 2017).

Furthermore, it is well-recognized that NEPA analyses must use some amount of reasonable forecasting and educated assumptions about an uncertain future. *See Sabal Trail*, 867 F.3d at 1374 (*citing Del. Riverkeeper Network*, 753 F.3d at 1310); *City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975) ("[r]easonable forecasting and speculation is … implicit in NEPA"); *see also Alaska v. Andrus*, 580 F.2d 465 (D.C. Cir. 1978), *vacated in part sub nom. W. Oil & Gas Ass'n v. Alaska*, 439 U.S. 922 (1978) ("Predictions, however, by their very nature, can never be perfect…"). The presence of uncertainty therefore does not absolve FERC of calculating upstream and downstream emissions. This Court requires that "the effects of assumptions on estimates can be checked by disclosing those assumptions so readers can take the resulting estimates with the appropriate amount of salt." *Sabal Trail*, 867 F.3d at 1374.

C. FERC Has Sufficient Information to Quantify Projects' Reasonably Foreseeable Greenhouse Gas Emissions.

Exact knowledge of where the gas will be consumed or produced is not needed to estimate upstream and downstream emissions. As is discussed above, the Commission's appeal to uncertainty about where the gas would be burned and produced does not break the causal chain between additional gas transportation,

increased consumption and production of gas, and changes in emissions. Even without additional information, there are tools the Commission has used before to calculate greenhouse gas emissions from production, transmission, and combustion, which it has no rational reason for refusing to use going forward.

1. The Commission Is Able to Calculate Greenhouse Gas Emissions from Gas Production and Transmission.

As is discussed above, and contrary to FERC's claims, it is clear that the Commission's approval of gas infrastructure projects—including the expansion of pipeline capacity at issue here—will cause the production of additional gas and the release of additional greenhouse gas emissions over the decades-long life of a project. Most, if not all, FERC dockets are devoid of any evidence that existing supplies of gas would be sufficient to fill a proposed pipeline over its lifetime; in fact, the record in some dockets has demonstrated that the reverse is true, particularly where a pipeline is providing access to new supplies of gas.[9] Even in circumstances where an applicant could demonstrate that existing well production is sufficient to fill a proposed project when it first begins operation, numerous reports suggest that output from unconventional gas wells drops sharply after the

[9] *See*, *e.g.*, Constitution Pipeline Company, LLC, Application for Certificate of Public Convenience and Necessity (June 13, 2013); Iroquois Gas Transmission System, LP, Application for Certificate of Public Convenience and Necessity, 5 (June 13, 2013).

first few years of production,[10] in some cases by as much as a 60–80 percent decline after a single year.[11]

Studies of the greenhouse gas emissions from the production and transmission of gas in the United States also have revealed that methane emissions from the gas supply chain are approximately 60 percent higher than previously estimated by EPA.[12] These emissions are predominantly pure methane, which has more than 80 times the climate warming impact of carbon dioxide over a 20-year timespan.[13] Over that 20-year time period and considering the warming potential of methane compared to carbon dioxide, both shale gas and conventional gas can have more substantial greenhouse gas impacts than coal or oil.[14]

Knowledge of the exact location, timing, and scale of well development also is not necessary for the Commission to meaningfully estimate the number of wells that would be required to supply a project. The Commission knows the capacity of the pipeline and can obtain the average production rates and number of existing

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[10] *Constitution Pipeline Co.*, Request for Rehearing of Catskill Mountainkeeper et al., 11 (Dec. 30, 2014).
[11] *Id.* at 11 n.17.
[12] *See, e.g.*, Ramón Alvarez, *et al.*, *Assessment of Methane Emissions from U.S. Oil and Gas Supply Chain*, Science (June 21, 2018).
[13] Bobby Magill, *Scientists Seek a New Measure for Methane*, Scientific American (June 4, 2016), https://www.scientificamerican.com/article/scientists-seek-a-new-measure-for-methane/.
[14] *See, e.g.*, Robert Howarth, *A Bridge to Nowhere: Methane Emissions and the Greenhouse Gas Footprint of Natural Gas*, 2 Energy Science & Engineering 47–60 (2014).

wells in the supply region from state databases.[15] With that information, FERC can estimate the number of additional wells, types of equipment, and production methods needed to supply the full pipeline capacity.

The Commission is well aware of the tools at its disposal to use a project's capacity to calculate greenhouse gas emissions from the production and transmission of the gas needed to fill a project. The Department of Energy has conducted studies estimating the amount of greenhouse gas emissions associated with various levels of production.[16] And as Commissioner LaFleur stated in her dissent here, FERC has used exactly these tools to undertake calculations of upstream greenhouse gas emissions associated with other projects. Order (LaFleur, Comm'r, dissenting) (citing *NEXUS Gas Transmission, LLC*, 160 FERC ¶ 61,022 (2017); *Nat'l Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145 (2017); *Tennessee Gas Pipeline Co., LLC*, 158 FERC ¶ 61,109 (2017); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061 (2017); *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046 (2017)).

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[15] *See, e.g.*, Pennsylvania Dep't of Envtl. Prot. Office of Oil and Gas Mgmt. Oil & Gas Report, https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx.

[16] Dep't of Energy and Nat'l Energy Tech. Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation*, DOE/NETL-2015/1714 (Aug. 30, 2016) (2016 DOE/NETL Study); U.S. Energy Info. Admin., *The Growth of U.S. Natural Gas: An Uncertain Outlook for U.S. and World Supply* (June 15, 2015), http://www.eia.gov/conference/2015/pdf/presentations/staub.pdf.

2. The Commission Is Able to Calculate Greenhouse Gas Emissions from Combustion.

FERC refused to calculate the emissions from burning the Project's gas, because the end use of the Project's gas is unknown. However, Commissioner LaFleur rightly asserted that "it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines [FERC] authorize[s] will be burned for electric generation or residential, commercial, or industrial end uses." Order (LaFleur, Comm'r, dissenting). And the Commission can at least determine the upper-bound of a project's downstream greenhouse gas emissions by calculating a worst-case, full-burn scenario, which it has done before[17] to estimate the downstream greenhouse gas emissions from a project, assuming that all of the gas to be transported will eventually be combusted.[18]

FERC is correct that "a number of factors, such as domestic natural gas prices and production costs" drive changes in supply and demand, *id.* at P 60, but models exist to forecast how changes to the market (such as approving new transportation projects) will affect supply and demand of various substitute energy

[17] Order (LaFleur, Comm'r, dissenting) (citing *NEXUS Gas Transmission, LLC*, 160 FERC ¶ 61,022, P 173 (2017); *Nat'l Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145, PP 189–90 (2017); *Tennessee Gas Pipeline Company, LLC*, 158 FERC ¶ 61,110, P 104 (2017); and *Rover Pipeline LLC*, 158 FERC ¶ 61,109, P 174 (2017)).

[18] Envtl. Protection Agency, Greenhouse Gas Equivalencies Calculator - Calculations and References, https://www.epa.gov/energy/ghg-equivalencies-calculator-calculations-and-references.

sources. The Commission could use any number of tools, including the U.S. Energy Information Agency's National Energy Modeling System; the Bureau of Ocean and Energy Management's MarketSim model; and the Integrated Planning Model developed by ICF International. These models do not require precise specification of the exact end use or supply source, despite FERC's insistence on such preconditions for analysis. *See id.* at P 34 & P 38. Both within a region and globally, those models can forecast how a change in supply costs and price for one energy source will affect demand for various substitute energy sources, including the demand for greater energy efficiency and conservation. *See Ctr. for Sustainable Economy v. Jewell*, 779 F.3d 588, 609 (D.C. Cir. 2015) (praising the Interior Department's "economic model" to assess substitution effects).

II. ANALYZING THE FULL AMOUNT OF A PROJECT'S GREENHOUSE EMISSIONS IS REQUIRED FOR INFORMED DECISIONMAKING.

The federal government's own scientists have recognized that the planet is warming, and that "most of the warming of the past half-century is due to human activities,"[19] "especially from burning fossil fuels (coal, oil, and natural gas)…"[20] Effects from that warming already are being felt, including increasing trends of extreme heat and heavy precipitation events.[21] To limit future warming to 2°C,

[19] Nat'l Climate Assessment.
[20] *Id.*
[21] *Id.*

aggressive emissions reductions of more than 70 percent in human-related reductions would need to occur by 2050.[22] In the absence of such efforts, the United States will experience a range of damaging and dangerous conditions, including widespread drought over most of the central and southern United States, prolonged periods of record high temperatures, and the increased incidence of wildfires.[23]

Against this backdrop, it could not be more clear that FERC cannot engage in the "informed decision making" required under NEPA without accounting for the full extent of a project's greenhouse emissions and analyzing how those emissions will contribute to climate change. *See Sabal Trail*, 867 F.3d at 1374. FERC, however, claims that this information would not aid its analysis of projects. Contrary to the Commission's unsupported assertions, there are mechanisms FERC can use to disclose the harm caused by a project's greenhouse gas emissions, which clearly would provide information critical to the assessment of a project aimed at facilitating burning fossil fuels. First, despite FERC's consistent rejection of the tool, the social cost of carbon is one of the best and most widely-used mechanisms to allow the Commission to convert emissions estimates into concrete harms. Second, where a state or region has goals to reduce greenhouse gas

[22] *Id.*
[23] *Id.*

emissions—which New York State does—FERC also should determine how a project's greenhouse gas emissions will affect a state or region's ability to meet their emissions goals. FERC's failure to use any tool or engage in any meaningful analysis of how a project's emissions will contribute to climate change is a violation of NEPA. *See id.* at 1374–75.

Determining the impact of the greenhouse gas emissions that will result from its project is critical to FERC being able to make a reasoned decision to reject, approve, or require changes to a project. In addition to deciding whether a project should go forward at all, FERC has the authority to mitigate a project's greenhouse gas emissions. *Id.* at 1374 (citing 15 U.S.C. § 717f(e)). The Commission not only can require an applicant to utilize better controls and practices to minimize direct emissions from the project, but also could examine whether a project's proposed capacity is needed or could be reduced to decrease its climate footprint. Moreover, a project's applicant can take additional steps, such as taking measures to offset the project's emissions or, for example, ensure that its customers adhere to best practices to reduce greenhouse gas emissions in their operations.[24]

[24] The Commission previously has included conditions in its certificates to ensure that an applicant's customers adhere to certain standards of conduct. *See, e.g.*, *Dominion Cove Point LNG, LP*, Order Granting Section 3 and Section 7 Authorizations, 148 FERC ¶ 61,244, P 142 (Sept. 29, 2014) (requiring customers' ships calling on a liquefied natural gas export terminal to adhere to certain standards to avoid colliding with engaged whale species while in transit to and from the terminal).

A. FERC Failed to Apply Widely-Used Tools to Express the Project's Emissions as Concrete Harms.

In direct violation of the Court's instructions in *Sabal Trail*, FERC failed to provide any analysis whatsover of how the Project's emissions would contribute to the problem of climate change. *Cf. Sabal Trail* at 1375 (requiring FERC to "explain . . . why" it cannot provide a detailed discussion of a project's climate impacts). FERC in part based its assertion that calculating the full extent of a project's greenhouse gas emissions would not be useful on the incorrect and unsupported assertion that "no standard methodology exists to determine how a project's contribution to greenhouse gas emissions would translate into physical effects on the environment for purposes of evaluating the Project's impacts on climate change." Order at P 67. In fact, the social cost of carbon estimates the climate change damage associated with an increase in greenhouse gas emissions from a project or regulation. *See Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233, P 30 (2018).

As of 2016, an Interagency Working Group convened to develop and update the social cost of carbon estimated that, by year 2020, each additional ton of carbon dioxide released from any source will cause $42 in climate damages.[25]

[25] *See* Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Support Document*, 4 (2016).

Contrary to FERC's unsupported allegations here of the absence of a "standard" tool, the Commission in fact has recognized that the social cost of carbon is widely-used by a variety of federal and state agencies, both when crafting regulations and when conducting environmental reviews of new energy infrastructure. 162 FERC ¶ 61,233, P 37 (citing uses by, for example, the Bureau of Ocean Energy Management and state public utility commissions).[26] And the Interagency Working Group's social cost of carbon's estimates have been broadly endorsed. The National Academies of Sciences has repeatedly recommended the

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FERC has claimed that no consensus exists on the appropriate discount rate to use to calculate the social cost of carbon, resulting in a range of values too wide to be useful. 162 FERC ¶ 61,233, P 49. This line of thinking has been rejected by the courts. *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1200 (9th Cir. 2008) ("[W]hile . . . there is a range of values, the value of carbon emissions reduction is certainly not zero.").

Moreover, although there is some dispute regarding the precise value of the social cost of carbon, experts have concluded that the true cost of greenhouse gas emissions likely is much *higher* than the estimates. *See, e.g.*, Katharine Ricke, et al., *Country-level Social Cost of Carbon*, Nature Climate Change (Sept. 24, 2018) (finding the median global social cost of carbon is $417 per ton). FERC's approach of refusing to use any tool to analyze the impact of emissions, and thus treating those emissions as if they cause no damage whatsoever, is entirely arbitrary.

[26] FERC previously attempted to draw a distinction between use of the social cost of carbon to evaluate production infrastructure on federal lands and FERC's use of the social cost of carbon to evaluate emissions consequences from gas pipelines. 162 FERC ¶ 61,233, P 38. FERC argued that it need not use the social cost of carbon, because it does not control production or consumption of gas. *Id.* But this argument makes no sense in light of the *Sabal Trail* decision, which found that the Commission does have the power to stop downstream emissions by rejecting the project based on combustion emissions. 867 F.3d at 1373.

continued use of the existing Interagency Working Group estimate,[27] in addition to a whole host of additional authorities.[28]

Applying the social cost of carbon to calculate the monetized consequences of the greenhouse gas emissions caused by the Project would have been relatively straightforward. To estimate the total climate consequence of the Project, the agency need only: (1) take the total quantified direct and indirect greenhouse gas emissions caused by the Project in a given year, (2) multiply by the social cost of carbon value that the Interagency Working Group calculated for that same year, and (3) add the totals across all years of the Project's lifespan, discounting future values back to net present value. In its request for rehearing, Petitioners calculated that full combustion of 112,000 dekatherms per day of transportation service would generate 6,875 tons of carbon dioxide per day.[29] That amounts to over 2.5

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[27] Nat'l Acad. Sci., Eng. & Medicine, Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide, 3 (2017); Nat'l Acad. Sci., Eng. & Medicine, Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update, 1 (2016).

[28] *See, e.g.*, R. Revesz *et al.*, Best Cost Estimate of Greenhouse Gases, 357 *Science* 655 (2017) (explaining why the Interagency Working Group's estimates remain the best numbers available to federal agencies); *Zero Zone, Inc. v. Dep't of Energy*, 832 F.3d 654, 678–679 (7th Cir. 2016) (holding that relying on the Interagency Working Group's social cost of carbon to inform agency action was reasonable); Gov't Accountability Office, *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates*, 12–19 (2014), http://www.gao.gov/assets/670/665016.pdf.

[29] *Dominion Transmission, Inc.*, Amended Request for Rehearing of Otsego 2000 et al., 24 (June 2, 2018) (hereinafter Otsego Rehearing Request).

million tons of carbon dioxide per year. Applying the social cost of carbon of $42 per ton for year 2020 emissions, this Project's downstream emissions could cause over $100 million per year in climate damages.[30] Otsego 2000 also calculated 10,750 tons per day of carbon dioxide-equivalent emissions from the Project's upstream leakage,[31] which would cause more than an additional $160 million per year in climate damages. This is in addition to the 185,920 tons of carbon dioxide-equivalent emissions per year from operation that FERC's own analysis concedes will be directly emitted, Order at P 58, which would cause an additional $7.8 million in damages. In total, the Project could cause well over $267 million in climate damages each year—plainly a relevant consideration as FERC weighs a project's potential benefits against its adverse effects.

In addition to wrongly claiming that there is no standard methodology available, the Commission insisted that it could not evaluate the climate change impacts of the Project, because there is no way to determine whether those impacts are "significant." *See id.* at P 68. But judging the significance of over a quarter of a billion of dollars in monetized climate damages from sea-level rise and other physical impacts incorporated by the social cost of carbon methodology is well

[30] This calculation for damages from year 2020 presents the damages as they would be valued in year 2020. For their present value, the $100 million in climate damages would be discounted back to 2018, at a rate of 3 percent per year. The present value would be about $95 million.
[31] Otsego Rehearing Request at 25.

within FERC's professional judgment. By monetizing the effects, FERC will be in familiar territory, as the Commission routinely evaluates the relative importance of millions or billions of dollars in other costs and benefits.[32] Translating 6,875 tons per day of carbon dioxide emissions into $100 million per year in climate damages would have disclosed the environmental impacts in a way that is more accessible to the public and to decisionmakers, and would have aided in FERC's determination of significance, as well as determine whether to approve the project or require mitigation of greenhouse gas emissions by requiring downsizing or other conditions. *Cf. Montana Envtl. Info. Ctr. v. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096 (D. Mont. 2017) (explaining it is inconsistently arbitrary for an

[32] In the Environmental Assessment for this Project, for example, FERC first calculated that "[c]onstruction of the Horseheads Compressor Station is expected to generate $4.3 million of direct income to workers, with operation and maintenance generating an estimated $132,000 in direct wages annually," before then concluding that "[t]he number of new jobs and indirect jobs from construction and operation would not cause significant socioeconomic impacts in Chemung County." *Dominion Transmission, Inc.*, Environmental Assessment, 61 (Oct. 20, 2015) (hereinafter EA).

agency to monetize payroll and other project benefits but not monetize climate costs).[33]

B. FERC Failed to Determine Whether the Project's Emissions Would Undermine State Emissions-Controls Goals.

Another critical use for the calculation of a project's full greenhouse gas emissions would be to evaluate whether that project will compromise state, regional, or other efforts to meet greenhouse gas reduction goals. This Court explicitly found that the informed decision-making required under NEPA cannot take place without examining how project emissions comport with "regional or national emissions-control goals." *See Sabal Trail*, 867 F.3d at 1374.

Indeed, New York State has aggressive targets for reductions of its greenhouse gas emissions. The State is aiming to reduce approximately half of its targeted greenhouse gas emissions by 2030.[34] New York also has a Methane Reduction Plan, aimed at reducing methane emissions from the sectors responsible

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[33] Elsewhere, FERC also claimed that it would be inappropriate to monetize climate damages when other costs and benefits are presented only qualitatively. 162 FERC ¶ 61,233, P 41. Yet FERC does routinely monetize "economic benefits" such as labor income and tax revenue. *See, e.g., Florida Southeast Connection LLC, et al.*, Final Environmental Impact Statement, 3-185–3-214 (2015). Here, FERC could have presented employment effects only as quantitative job creations or only as a qualitative discussion of labor market effects; instead, the Commission chose to monetize $7.5 million in construction-related income. EA at 61; *see also id.* at 62 (monetizing millions of dollars in tax revenue).

[34] *See* New York State Energy Planning Board, *The Energy to Lead: 2015 New York State Energy Plan, Vol. 1*, 110 (2015), https://energyplan.ny.gov/-/media/nysenergyplan/2015-state-energy-plan.pdf.

for the majority of methane emissions in the state, one of which is oil and gas.[35] The Commission plainly should have considered the extent to which the approval of a project with the potential to emit more than 6 million tons of carbon per year, including 10,750 tons per day of methane would comply with the state's plans. *See* 40 C.F.R. § 1506.2(d) (where the project is inconsistent with state or local plans, the NEPA review "should describe the extent to which the agency would reconcile its proposed action with the plan or law").

CONCLUSION

For the foregoing reasons, Sierra Club respectfully requests that the Court vacate FERC's orders authorizing the Project and denying rehearing and remand this proceeding to the Commission for preparation of an environmental review in compliance with NEPA.

Dated: December 3, 2018

/s/ *Meagan M. Burton*
Meagan M. Burton

[35] New York Department of Environmental Conservation Methane Reduction Plan May 2017 https://www.dec.ny.gov/docs/administration_pdf/mrpfinal.pdf (last accessed Nov. 29, 2018). The Plan contains recommendations to reduce emissions from the three sectors responsible for the majority of methane emissions: "oil and gas, landfills, and agriculture. . . [New York will d]evelop , propose and adopt regulations, as necessary to limit emissions from existing transmission facilities (e.g., compressor stations) not regulated by the federal New Source Performance Standards. Regulatory development will include the collection of data on emissions from existing sources, due to EPA's abandonment of its information-gathering efforts in March 2017." *Id.* at 5.

Moneen S. Nasmith
Earthjustice
48 Wall Street, 15th Fl.
New York, NY 10005
Telephone: (212) 823-4982
Facsimile: (212) 918-1556
mburton@earthjustice.org

Counsel for Sierra Club

CERTIFICATE OF COMPLIANCE

This Amicus Brief complies the type-volume limitation of this Court's order of September 26, 2018 because this brief contains 6,394 words, excluding the parts of the brief exempted by Fed. R. App. 32(a)(7)(B)(iii) and Circuit Rule 32(e)(1). Microsoft Word 2016 computed the word count.

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Dated: December 3, 2018

/s/ Meagan M. Burton