
CLIMATE CHANGE, FERC, AND NATURAL GAS PIPELINES: THE LEGAL BASIS FOR CONSIDERING GREENHOUSE GAS EMISSIONS UNDER SECTION 7 OF THE NATURAL GAS ACT

BY ROMANY M. WEBB*

ABSTRACT

As the federal agency charged with overseeing the interstate transportation of natural gas, the Federal Energy Regulatory Commission (FERC) has recently faced growing criticism over its approval of new pipelines. Critics have lambasted FERC for failing to adequately consider the climate change impacts of pipeline development, particularly the greenhouse gas emissions associated with “upstream” natural gas production and “downstream” use. The D.C. Circuit recently weighed in, holding that the National Environmental Policy Act (NEPA) requires consideration of downstream greenhouse gas emissions, at least in some circumstances. The precise scope of that requirement continues to be debated before FERC, in the courts, and among scholars. While recognizing the importance of that debate, this Article approaches the issue from a different perspective, contending that the Natural Gas Act (NGA) establishes an independent requirement for FERC to consider climate change impacts, including upstream or downstream greenhouse gas emissions. To support that contention, the Article offers an in-depth look at the history of Section 7 of the NGA, and its interpretation by the courts. It also provides a comprehensive analysis of how environmental factors are dealt with

* Romany M. Webb is an Associate Research Scholar at Columbia Law School and Senior Fellow at the Sabin Center for Climate Change Law. The author would like to thank Michael Burger, Executive Director of the Sabin Center for Climate Change Law, for his advice and guidance on the drafting of this paper. The author is also grateful to Michael Gerrard, the Andrew Sabin Professor of Professional Practice at Columbia Law School and Faculty Director of the Sabin Center for Climate Change Law, and Jennifer Danis, Staff Attorney at the Columbia Environmental Law Clinic, for their insightful comments on early drafts of this paper. Any errors are my own.

by FERC, showing that the Commission historically viewed downstream environmental impacts as a key factor to be considered under section 7 of the NGA, but now largely ignores them. That is not only poor policy, but also violates section 7. FERC must, therefore, change its current approach to evaluating pipeline projects. That change could have significant implications for the approval of future projects since, after accounting for environmental impacts, FERC may be unable to conclude that a project is required by the public convenience and necessity.

INTRODUCTION181

I. THE LEGAL FRAMEWORK FOR CERTIFYING INTERSTATE NATURAL GAS

 PIPELINES.....188

 A. *Section 7 of the Natural Gas Act*188

 B. *Legislative History of Section 7*.....190

 C. *Judicial Precedent on Section 7*194

II. FERC’S APPROACH TO NATURAL GAS PIPELINE CERTIFICATION198

 A. *FERC’s Economic Review*.....199

 B. *FERC’s Environmental Review*.....202

III. TREATMENT OF ENVIRONMENTAL ISSUES IN RECENT FERC

 CERTIFICATION DECISIONS208

IV. INTEGRATING ENVIRONMENTAL CONSIDERATIONS INTO FERC’S

 CERTIFICATION PROCESS216

 A. *Requirement to Assess Environmental Impacts*217

 B. *Scope of the Required Environmental Assessment*220

CONCLUSION.....225

INTRODUCTION

The U.S. natural gas industry has undergone profound changes over the last two decades, with technological advances—most notably the combination of horizontal drilling and hydraulic fracturing—enabling the development of vast gas reserves, previously trapped in shale rock formations. Historically considered uneconomic to develop, in 2000 shale gas accounted for less than two percent of U.S. natural gas production.¹ By 2017, the figure was over fifty-seven percent,² and forecast to continue rising.³ This so-called “shale revolution” has boosted total natural gas production, which grew by approximately thirty-eight percent from 2000 to

¹ See Zhongmin Wang & Alan Krupnick, *A Retrospective Review of Shale Gas Development in the United States: What Led to the Boom?* 1 (Res. for the Future, Working Paper No. 13-12, 2013), <https://perma.cc/87B3-GD8D>.

² See *Natural Gas Gross Withdrawals and Production*, ENERGY INFO. ADMIN., https://www.eia.gov/dnav/ng/ng_prod_sum_dc_NUS_mmcf_a.htm (last updated Jan. 31, 2020) [<https://perma.cc/3NKG-XCL2>].

³ See ENERGY INFO. ADMIN., *ANNUAL ENERGY OUTLOOK 2019 WITH PROJECTIONS TO 2050*, at 76 (2019), <https://perma.cc/HVN4-2RMA> (forecasting that tight oil and shale gas resources will account for nearly 90% of total dry natural gas production in the U.S. by 2050).

2017,⁴ driving prices down.⁵ As a result, natural gas has become more cost competitive as a fuel in electricity generation and other applications, contributing to its substitution for coal. Between 2000 and 2017, electricity generation using natural gas increased by over 115 percent, while coal-fired generation declined by nearly thirty-nine percent.⁶

This shift has had important public health and environmental benefits because, compared to electricity generation using coal, natural gas-fired generation results in fewer emissions of mercury and other air toxins.⁷ It also emits approximately half as much climate-damaging carbon dioxide as coal-fired generation.⁸ Nevertheless, natural gas is far from “climate-friendly,” with its combustion emitting approximately 117 pounds of carbon dioxide per million British thermal units (Btu) of energy produced.⁹ Moreover, natural gas production and transportation are also major

⁴ See ENERGY INFO. ADMIN., *supra* note 2.

⁵ See *Henry Hub Natural Gas Spot Price*, ENERGY INFO. ADMIN., <https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm> (last updated Feb. 5, 2020) [<https://perma.cc/J7FE-FDC6>] (indicating that prices reached a high of \$13.42 per million British thermal units (Btu) in October 2005, but subsequently declined to \$2.95 per million Btu in March 2019).

⁶ See ENERGY INFO. ADMIN., APRIL 2019 MONTHLY ENERGY REVIEW 125 (2019), <https://perma.cc/7P2B-5FAN> (indicating that, in 2000, 1,966,265 million kilowatt hours (kWh) of electricity was generated using coal and 601,038 million kWh using natural gas, whereas in 2017, 1,205,835 million kWh of electricity was generated using coal and 1,296,415 million Kwh using natural gas).

⁷ See RICHARD K. LATTANZIO ET AL., CONG. RESEARCH SERV., R43860, METHANE: AN INTRODUCTION TO EMISSION SOURCES AND REDUCTION STRATEGIES 1 (2016), <https://perma.cc/6NWV-AG4C>.

⁸ See *How Much Carbon Dioxide Is Produced When Different Fuels Are Burned?*, ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11> (last updated June 4, 2019) [<https://perma.cc/5GM2-CHV4>] (indicating that the coal combustion emits 228.6 pounds of carbon dioxide per million Btu, while natural gas combustion emits just 117.0 pounds).

⁹ See *id.*

sources of methane,¹⁰ accounting for over one-quarter of total United States emissions in 2017.¹¹

Recognizing this and emphasizing the need to dramatically reduce greenhouse gas emissions, in its Mid-Century Strategy for Deep Decarbonization, the Obama administration argued that “a rapid phase-out of . . . natural gas is required” (at least unless carbon capture and sequestration technologies become widely available).¹² However, that view is not shared by the Trump administration, which has sought to boost natural gas production and use, including by accelerating the permitting of new pipelines and other infrastructure, purportedly needed to “efficiently, reliably, and cost effectively transport” gas to domestic and international markets.¹³

The Federal Energy Regulatory Commission (FERC or Commission) has primary responsibility for approving pipelines used in the interstate transportation of natural gas (interstate pipelines).¹⁴ Under section 7 of the Natural Gas Act (NGA), any person wishing to construct or extend an interstate natural gas pipeline must apply to FERC for a certificate of public convenience

¹⁰ Methane is a highly potent greenhouse gas, estimated to trap at least eighty-four times more heat in the earth’s atmosphere than carbon over a twenty-year time horizon, on a pound-for-pound basis. See Rajendra K. Pachauri et al., *Climate Change 2014: Synthesis Report*, in FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 87 (Rajendra K. Pachauri et al. eds., IPCC 2014), <https://perma.cc/DK4M-FBRL>. Other studies have found the twenty-year global warming potential of methane to be even higher. See, e.g., Robert W. Howarth et al., *Methane and the Greenhouse Gas Footprint of Natural Gas from Shale Formations*, 106 CLIMATE CHANGE 679, 679, 683 (2011).

¹¹ See EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2017, at ES-6 to ES-8 tbl. ES-2 (2019), <https://perma.cc/96VK-WSHJ> (estimating total methane emissions in 2017 at 656.3 million metric tons of carbon dioxide equivalent, of which natural gas systems were responsible for 165.6 million metric tons). Other studies suggest that methane emissions from natural gas systems are even higher. See, e.g., Ramón A. Alvarez et al., *Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain*, SCIENCE (June 21, 2018), <https://science.sciencemag.org/content/361/6398/186>.

¹² WHITE HOUSE, UNITED STATES MID-CENTURY STRATEGY FOR DEEP DECARBONIZATION 33 (2016), <https://perma.cc/56U8-XZSE>.

¹³ *Fact Sheet: President Donald J. Trump is Paving the Way for Energy Infrastructure Development*, WHITE HOUSE (Apr. 10, 2019), <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-paving-way-energy-infrastructure-development/> [<https://perma.cc/5B4H-AA3C>].

¹⁴ See Natural Gas Act § 7, 15 U.S.C. § 717f (2012) (authorizing FERC to regulate, among other things, “the transportation of natural gas in interstate commerce”).

and necessity which, as the name suggests, can only be issued where the Commission determines that the pipeline “is or will be required by the present or future public convenience and necessity.”¹⁵ To make that determination, FERC must “evaluate all factors bearing on the public interest”¹⁶ which necessitates a broad-ranging assessment of the need for pipeline development, its benefits, and its costs.¹⁷ FERC has described the assessment as involving two separate reviews, one of which focuses on the economic consequences of pipeline development, and the other on its environmental impacts.¹⁸ FERC has indicated that it considers the findings of both reviews when assessing whether pipeline development is required by the public convenience and necessity under section 7 of the NGA.¹⁹

FERC’s approval of pipeline projects has come under increased scrutiny in recent years, primarily due to concerns that expanding transportation capacity will lead to greater production and use of natural gas, and associated greenhouse gas emissions.²⁰ Debate has raged both within and outside FERC over whether, and if so how, the Commission should consider the greenhouse gas emissions associated with “upstream” natural gas production and “downstream” use when approving new pipelines.²¹ In several recent approvals, FERC has refused to consider upstream and

¹⁵ *Id.*

¹⁶ *Fed. Power Comm’n v. Transcon. Gas Pipe Line Corp.*, 365 U.S. 1, 8 (1961) (“§ 7(e) requires the Commission to evaluate *all* factors bearing on the public interest.”) (emphasis added) (quoting *Atl. Ref. Co. v. Pub. Serv. Comm’n*, 360 U.S. 378, 391 (1959)).

¹⁷ *See* Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227 (1999), *clarified* 90 FERC ¶ 61,128 (Feb. 9, 2000), *further clarified* 92 FERC ¶ 61,094 (2000).

¹⁸ *See id.*, ¶ 61,747 (indicating that economic and environmental impacts will be considered “separately”); *see also* Order Clarifying Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 90 FERC ¶ 61,128, ¶ 61,397 (2000) (stating that the “environmental and economic review of a proposed project will . . . proceed concurrently”).

¹⁹ *See* Notice of Inquiry, Certification of New Interstate Natural Gas Facilities, 83 Fed. Reg. 18,020, 18,022 (Apr. 19, 2018).

²⁰ *See, e.g., Stopping Dirty Energy Infrastructure Investments*, EARTHJUSTICE, <https://earthjustice.org/climate-and-energy/oil-gas-drilling/infrastructure> (last visited Feb. 10, 2020) [<https://perma.cc/CZ38-XTKQ>].

²¹ *See, e.g., Dominion Transmission, Inc., Order Denying Rehearing*, 163 FERC ¶ 61,128, ¶ 61,888 (2018).

downstream emissions (except in limited circumstances),²² prompting court challenges from environmental groups and others who assert that such emissions must be considered under NEPA.²³ A number of scholars have also weighed in, debating the scope of FERC's NEPA obligations.²⁴ Comparatively little attention has, however, been devoted to FERC's obligations under the NGA.²⁵ That is the focus of this Article.

²² See, e.g., *id.* ¶¶ 61,700–01.

²³ See, e.g., Petitioner's Opening Brief at 26, *Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d 1357 (D.C. Cir. 2017) (No. 16-1329); Petitioner's Joint Opening Brief at 38, *Appalachian Voices v. Fed. Energy Regulatory Comm'n*, No. 17-1271, 2019 WL 847199 (D.C. Cir. Feb. 19, 2019); *Otsego 2000 v. Fed. Energy Regulatory Comm'n*, 767 Fed.Appx. 19, 21 (D.C. Cir. 2019) (mem.); Brief of Petitioners at 37, *Birckhead v. Fed. Energy Regulatory Comm'n*, 925 F.3d 510 (D.C. Cir. 2019) (No. 18-1218); Joint Reply Brief of Petitioners at 13, *Atl. Coast Pipeline, LLC v. Fed. Energy Regulatory Comm'n*, No. 18-1224 (D.C. Cir. July 10, 2019). Some recent court challenges have also alleged that FERC's failure to consider upstream and downstream emissions violates section 7 of the NGA. See, e.g., Appellants' Opening Brief at 24, *Del. Riverkeeper Network v. Fed. Energy Regulatory Comm'n*, 895 F.3d 102 (D.C. Cir. 2018) (No. 17-5084).

²⁴ See, e.g., Aaron Flyer, *FERC Compliance Under NEPA: FERC's Obligation to Fully Evaluate Upstream and Downstream Environmental Impacts Associated with Siting Natural Gas Pipelines and Liquefied Natural Gas Terminals*, 27 GEO. INT'L ENVTL. L. REV. 301, 308 (2015); Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, 41 HARV. ENVTL. L. REV. 109, 115 (2017); James W. Coleman, *Beyond the Pipeline Wars: Reforming Environmental Assessment of Energy Transport Infrastructure*, 2018 UTAH L. REV. 119, 162, 164; Thien T. Chau, *Implications of the Trump Administration's Withdrawal of the Final CEQ Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews*, 30 GEO. INT'L ENVTL. L. REV. 713, 723–24 (2018).

²⁵ To the author's knowledge, only three previous papers have discussed FERC's consideration of upstream and downstream climate impacts under the NGA. See STEVEN WEISSMAN & ROMANY WEBB, ADDRESSING CLIMATE CHANGE WITHOUT LEGISLATION: HOW THE FEDERAL ENERGY REGULATORY COMMISSION CAN USE ITS EXISTING LEGAL AUTHORITY TO REDUCE GREENHOUSE GAS EMISSIONS AND INCREASE CLEAN ENERGY USE 46–48 (2014), <https://perma.cc/LFV6-DZ3K> (concluding that “FERC may evaluate the greenhouse gas emissions resulting from production, transportation, and use of natural gas when determining whether a proposed pipeline is in the public interest” under section 7 of the NGA); JAYNI HEIN ET AL., PIPELINE APPROVALS AND GREENHOUSE GAS EMISSIONS 8–10 (2019), <https://perma.cc/ZF4X-P44L> (asserting that “FERC should more fully incorporate environmental considerations—and, in particular, the climate costs or benefits that results from new or expanded natural gas pipelines—into its process for evaluating, approving, or denying certificates for public convenience and necessity” under the NGA);

The Article answers two key questions that have, to date, been largely overlooked in the debate surrounding FERC's approval of interstate natural gas pipelines. First, how (if at all) are environmental factors, including upstream and downstream greenhouse gas emissions, currently considered by FERC when issuing certificates of public convenience and necessity? And, second, does FERC's current approach meet the requirements of section 7 of the NGA?

With respect to the first question, the Article provides an in-depth analysis of FERC's stated approach to evaluating certificate applications, as set out in its 1999 Statement of Policy on the Certification of New Interstate Natural Gas Pipelines (1999 Policy Statement). The Article then explores how the 1999 Policy Statement has been implemented in practice, based on a comprehensive survey of all major pipeline projects certified by FERC from 2014 to 2018.²⁶ For each project, the author analyzed FERC's certification decision and supporting materials, including any environmental documents prepared under NEPA. The analysis shows that, despite FERC's claims to consider both economic and environmental factors when certifying pipelines, it often justifies its certification decisions solely on economic grounds.²⁷ Moreover, even where environmental factors are considered, FERC typically fails to assess the full range of climate impacts associated with pipeline development, including upstream and downstream greenhouse gas emissions.²⁸

With respect to the second question, the Article argues that the climate and other environmental impacts of pipeline development must be considered under section 7 of the NGA. To support that argument, the Article explores the history behind section 7, showing that Congress intended it to confer broad authority on FERC to

Rich Glick & Matthew Christiansen, *FERC and Climate Change*, 40 ENERGY L.J. 1, 40 (2019) (stating that FERC "has authority to deny a section 7 certificate application on the basis of its harm to the environment" (internal citations omitted)).

²⁶ FERC defines a "major" pipeline project as one that adds capacity to the existing interstate natural gas pipeline system. *See generally* FED. ENERGY REGULATORY COMM'N, NATURAL GAS PIPELINES: APPROVED MAJOR PIPELINE PROJECTS (2015–PRESENT) (2019) <https://ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp>.

²⁷ *See infra* Part III.

²⁸ *See infra* Part III.

consider the social consequences of pipeline development.²⁹ While the courts have recognized certain limits on the scope of FERC's review, they have repeatedly affirmed the importance of considering environmental impacts, including downstream impacts.³⁰ The courts—and FERC itself—have long viewed downstream environmental impacts as central to the assessment of whether pipeline development is required by the public convenience and necessity.³¹ Indeed, FERC's predecessor—the Federal Power Commission (FPC)—once described downstream environmental impacts as “one of the most important factors” to be considered when assessing the public convenience and necessity,³² and the courts have agreed that evidence of such impacts should be given “great weight” under section 7 of the NGA.³³ The case law and administrative materials, as well as the language and history of the NGA, thus suggest that FERC cannot fulfill its statutory obligation under section 7 without considering the full climate and other environmental impacts of pipeline development.³⁴ The requirement to consider those impacts under section 7 of the NGA is independent of, and not constrained by, NEPA.³⁵

These points are elaborated further in the remainder of the Article. Part I of the Article provides background on section 7 of the NGA, exploring the history behind it, and how it has been interpreted by the courts. Parts II and III then discuss FERC's implementation of section 7, reviewing its stated approach to pipeline certification, as set out in the 1999 Policy Statement and other recent orders, and assessing how environmental issues have been considered in recent certification decisions. The legality of that approach is explored in Part IV.

²⁹ See *infra* Section I.B.

³⁰ See *infra* Sections I.C, IV.A.

³¹ See *infra* Section I.C.

³² Transwestern Pipeline Co., Opinion and Order Granting and Denying Certificates, 36 FPC 176, 213 (1966); see also *infra* Part IV.

³³ Fed. Power Comm'n v. Transcon. Gas Pipe Line Corp., 365 U.S. 1, 18 (1961); see also *infra* Part IV.

³⁴ See *infra* Part IV.

³⁵ See *infra* Section IV.B.

I. THE LEGAL FRAMEWORK FOR CERTIFYING INTERSTATE NATURAL GAS PIPELINES

First enacted in 1938, the NGA declares “the business of transporting and selling natural gas” to be “affected with a public interest” and provides for federal regulation of interstate natural gas transport and sales, finding this to be “necessary in the public interest.”³⁶ Regulatory authority was initially conferred on the FPC, which was established by the 1920 Federal Water Power Act³⁷ to regulate hydroelectric projects in U.S. navigable waters,³⁸ and was subsequently charged with regulating certain other aspects of the electricity industry under the Federal Power Act of 1935.³⁹ Three years later, with the passage of the NGA in 1938, the FPC’s jurisdiction was further expanded to include natural gas.⁴⁰ Subsequently, in 1977, federal regulation of the natural gas and electricity industries was transferred to FERC.⁴¹ An independent federal agency, FERC is comprised of five Commissioners, who are appointed by the President, with the advice and consent of the Senate.⁴² No more than three Commissioners may belong to the same political party.⁴³ Each is appointed for a five-year term and may only be removed from office by the President on the grounds of inefficiency, neglect of duty, or malfeasance.⁴⁴

A. *Section 7 of the Natural Gas Act*

Section 7 of the NGA, entitled “Construction, extension, or abandonment of facilities,” establishes the framework under which FERC regulates the development and use of natural gas pipelines.⁴⁵

³⁶ Natural Gas Act of 1938 § 1(a), 15 U.S.C. § 717 (2012).

³⁷ See generally Federal Water Power Act of 1920, 16 U.S.C. § 791 (2012).

³⁸ See 16 U.S.C. § 792 (“[A] commission is created and established to be known as the Federal Power Commission”); see also *id.* § 797 (outlining the powers of the FPC).

³⁹ See generally 15 U.S.C. § 791a.

⁴⁰ See *id.* § 717(b).

⁴¹ See Department of Energy Organization Act of 1977, 42 U.S.C. § 7172 (2012).

⁴² See *id.* § 7171(a); see also *Commission Members*, FED. ENERGY REGULATORY COMM’N, <https://ferc.gov/about/com-mem.asp> (last visited Feb. 2, 2020) (describing the appointments process).

⁴³ See 42 U.S.C. § 7171(b)(1).

⁴⁴ See *id.*

⁴⁵ See generally 15 U.S.C. § 717f.

Under section 1(b) of the NGA, FERC's regulatory authority extends to all pipelines used for the "transportation of natural gas in interstate commerce," which has been held to include pipelines crossing state boundaries, as well as those located within a single state that play a role in transporting gas between states (interstate pipelines).⁴⁶ FERC does not, however, have authority over pipelines used solely for local natural gas distribution.⁴⁷

Under section 7(c) of the NGA, before any interstate natural gas pipeline is constructed or extended, a certificate of public convenience and necessity must be obtained from FERC. The subsection provides, in relevant part:

(c) Certificate of public convenience and necessity.

(A) No natural-gas company or person which will be a natural-gas company upon completion of any proposed construction or extension shall engage in the transportation or sale of natural gas, subject to the jurisdiction of the Commission, or undertake the construction or extension of any facilities therefor, or acquire or operate any such facilities or extensions thereof, unless there is in force with respect to such natural-gas company a certificate of public convenience and necessity issued by the Commission authorizing such acts or operations . . .

(B) [T]he Commission shall set the matter for hearing and shall give such reasonable notice of the hearing thereon to all interested persons as in its judgment may be necessary under rules and regulations to be prescribed by the Commission; and the application shall be decided in accordance with the procedure provided in subsection (e) of this section and such certificate shall be issued or denied accordingly: *Provided, however,* That the Commission may issue a temporary certificate in cases of emergency, to assure maintenance of adequate service or to serve particular customers, without notice or hearing, pending the determination of an application for a certificate, and may by regulation exempt from the requirements of this section

⁴⁶ Natural Gas Act § 1(b), 15 U.S.C. § 717 (stating that the Act applies to "transportation of natural gas in interstate commerce"); *see also* Natural Gas Act § 2(7), 15 U.S.C. § 717a(7) (defining "interstate commerce" to mean "commerce between any point in a State and any point outside thereof, or between points within the same State but through any place outside thereof").

⁴⁷ *See* Natural Gas Act § 3, 15 U.S.C. § 717(b); *see also* Suede Kelly & Vera Callahan Neinst, *Getting Gas to the People: The Federal Energy Regulatory Commission's Permitting Process for Pipeline Infrastructure*, in *BEYOND THE FRACKING WARS: A GUIDE FOR LAWYERS, PUBLIC OFFICIALS, PLANNERS, AND CITIZENS* 183, 186–87 (Beth E. Kinne & Erica Levine Powers eds., 2014).

temporary acts or operations for which the issuance of a certificate will not be required in the public interest.⁴⁸

Section 7(d) of the NGA sets out the process by which persons may apply for certificates of public convenience and necessity, requiring applications to be made in writing and contain the information specified in regulations adopted by FERC.⁴⁹ As noted above, under section 7(c)(1)(B) of the NGA, FERC must convene a hearing on each certificate application (except in cases of emergency).⁵⁰ Following the hearing, FERC may grant an application if satisfied that it meets the conditions specified in section 7(e), which provides that a certificate can only be issued if:

the applicant is “able and willing” to construct and operate the pipeline in accordance with the requirements of the NGA and any rules or regulations adopted thereunder; and construction and operation of the pipeline is “required by the present or future public convenience and necessity.”⁵¹

The NGA does not define the term “public convenience and necessity” nor set out any factors to be considered by FERC in determining whether a pipeline meets that standard. However, informed by both the history of the NGA and other statutes applying the public convenience and necessity standard, FERC and the courts have identified a number of relevant considerations.

B. *Legislative History of Section 7*

Since its enactment in 1938, the NGA has always included provisions dealing with the certification of interstate natural gas pipelines, though the scope of those provisions has changed over time. As originally enacted, section 7(c) of the NGA only required a sub-set of interstate pipelines, intended to be used “for the transportation of natural gas to a market in which natural gas is already being served by another natural-gas company,” to be certified by the former FPC.⁵² Like its present-day counterpart, the

⁴⁸ Natural Gas Act § 7(c), 15 U.S.C. § 717f(c).

⁴⁹ *See id.* § 7(d), 15 U.S.C. § 717f(d).

⁵⁰ *See id.* § 7(c)(1)(B), 15 U.S.C. § 717f(c)(1)(B).

⁵¹ *Id.* § 7(c)(1)(B), 15 U.S.C. § 717f(e).

⁵² Natural Gas Act of 1938, Pub. L. No. 75-688, § 7(c), 52 Stat. 821, 825 (1938) (prior to 1942 amendment). The FPC took a fairly broad view of its pipeline certification authority, concluding that the phrase “market in which natural gas is already being served” was not intended to refer “only [to] those communities in which there are presently existing facilities for the transportation or sale of natural

original version of section 7(c) directed the FPC, when issuing certificates, to apply the public convenience and necessity standard. While that standard has never been defined in the NGA, the original version of section 7(c) did provide some guidance on its meaning, stating:

In passing on applications for certificates of public convenience and necessity, the [FPC] shall give due consideration to the applicant's ability to render and maintain adequate service at rates lower than those prevailing in the territory to be served, it being the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.⁵³

The legislative history of the NGA indicates that section 7(c) was intended to confer broad authority on the FPC to consider the public interest when certifying pipelines. Both the House and Senate reports on the NGA described the section as "similar [to the] provisions requiring certificates of public convenience and necessity . . . in the Interstate Commerce Act"⁵⁴ and other federal and state statutes which had, at the time, been interpreted by the courts as requiring an assessment of whether certification would be "in the interest of the public."⁵⁵ While the reports did not expressly endorse that interpretation, Congress's decision to apply the same standard may be taken as tacit approval.⁵⁶

gas," but rather to any "territory within which a natural gas company can economically render adequate service by reasonable extensions of its facilities." *See* *Re Kan. Pipe Line & Gas Co.*, 2 FPC 29, 35 (1939), 1939 WL 1374.

⁵³ Natural Gas Act § 7(c), 52 Stat. 821, 825 (1938) (prior to 1942 amendment).

⁵⁴ H.R. REP. NO. 709 (1937); S. REP. NO. 1162 (1937); *see also* H.R. REP. NO. 1290, at 2 (1941).

⁵⁵ *Chesapeake & Ohio Ry. Co. v. United States*, 283 U.S. 35, 42 (1931) (holding that the ICC is authorized to certify projects "in the interests of the public").

⁵⁶ The courts have consistently held that, where Congress elects to use words with a well-established meaning in a statute, it is taken to have intended the words to be given that meaning. *See, e.g.*, *Case v. L.A. Lumber Prods. Co.*, 308 U.S. 106, 115 (1939) ("[W]here words are employed in an act which had at the time a well-known meaning in the law, they are used in that sense unless the context requires the contrary."); *Carolene Prods. Co. v. United States*, 323 U.S. 18, 26 (1944) (stating that Congress's "adoption of the wording of a statute from another legislative jurisdiction carries with it the previous judicial interpretations of the wording").

Consistent with this view, the FPC based its early decisions under section 7(c) on an assessment of “public need and benefit,” which it held required a review of “many and varied factors.”⁵⁷ The FPC did, however, acknowledge important limits on the scope of its review. Most importantly for the purposes of this Article, in its 1939 decision in *Re Kansas Pipe Line and Gas Company (Kansas Pipe Line Decision)*, the FPC concluded that it lacked authority to consider certain downstream impacts of pipeline development.⁵⁸

Briefly, the *Kansas Pipe Line Decision* concerned two pipelines intended to transport natural gas from central North Dakota to western Minnesota, where it would be used in various industrial and other applications.⁵⁹ Providers of competing fuels (e.g., coal) and transportation services (e.g., railways) objected to pipeline development on the grounds that it would lead to a reduction in the use of their fuels or services and thus adversely affect their economic interests.⁶⁰ The FPC determined that it lacked authority to consider such downstream impacts when certifying the pipelines, reasoning that its jurisdiction under section 7(c) was limited to cases involving competition among natural gas companies, suggesting that “Congress did not intend [it] generally to weigh the broad social and economic effects of the use of various fuels.”⁶¹

In its 1940 Annual Report to Congress, the FPC expressed concern that, without considering downstream impacts, it could not ensure pipeline development is in the public interest and thus achieve the goals of the NGA.⁶² In response, Congress amended the NGA in 1942, enacting a revised version of section 7(c), and new

⁵⁷ *Re Kan. Pipe Line & Gas Co.*, 2 FPC at 38, 56.

⁵⁸ *See id.* at 57.

⁵⁹ *See id.* at 33.

⁶⁰ *See id.* at 57.

⁶¹ *Id.*

⁶² *See* FED. POWER COMM’N, TWENTIETH ANNUAL REPORT OF THE FEDERAL POWER COMMISSION 10 (1940) (noting that the Commission lacks authority to consider “important problems” regarding the downstream impacts of pipeline development, including “whether the proposed use of natural gas would not result in displacing” other fuels); *see also id.* at 10, 78 (stating that the limited scope of section 7(c) “has serious disadvantages in terms of the general purposes of the Natural Gas Act” and indicating that “[i]n order to make possible more effective protection of the public interest in connection with the transportation and sale of natural gas in interstate commerce . . . section 7(c) of the Act should be broadened to give the Commission control over all new interstate pipeline construction”).

subsections 7(d) through (g).⁶³ Those provisions have undergone only minor amendments since.⁶⁴

The 1942 amendment expanded the scope of section 7(c) of the NGA, requiring all new interstate natural gas pipelines to be certified by the FPC.⁶⁵ The amendment also removed the direction, previously found in section 7(c), that the FPC consider “the applicant’s ability to render and maintain adequate service at rates lower than those prevailing in the territory to be served” when certifying pipelines.⁶⁶ In place of that directive, Congress enacted a new section 7(e), which set out a two-stage test for issuing certificates, requiring the FPC to consider (1) whether the applicant is able and willing to construct and operate the pipeline and (2) whether pipeline construction and operation is or will be required by the public convenience and necessity.⁶⁷ While that is the same standard as had appeared in the original version of section 7 of the NGA, it is clear from Congressional debate that the 1942 amendment was intended to expand the range of factors that could be considered by FERC in its certification decisions.

In its report on the 1942 amendment, the House Committee on Interstate and Foreign Commerce (House Committee) noted that the original version of section 7 had proved difficult to administer because the FPC’s jurisdiction was limited to a subset of pipelines, and that limitation prevented it from considering all relevant factors when issuing certificates of public convenience and necessity.⁶⁸ The House Committee indicated that amending section 7 would enable the FPC to consider a broader range of factors, including the

⁶³ See Act of Feb. 7, 1942, ch. 49, Pub. L. No. 444, 56 Stat. 83.

⁶⁴ Section 7(c) of the Natural Gas Act underwent minor amendments in 1978. See Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, § 608, 92 Stat. 3117, 3173 (1978).

⁶⁵ See Natural Gas Act § 7(c), 15 U.S.C. § 717f(c)(1)(A) (2012).

⁶⁶ *Id.*

⁶⁷ See *id.* § 717f(e).

⁶⁸ See H.R. REP. NO. 1290-2 (1941) (“The difficulties encountered in the administration of the present statutory provision arise out of the limitation of the scope of the section to ‘a market in which natural gas is already being served by another natural gas company.’ . . . Administration of the present statute, therefore, involves tedious and time-consuming preliminary investigations and hearings in order to determine whether the Commission has jurisdiction to consider, on the merits, the granting or denying of the certificate. The limitation, moreover, . . . has been held by the Commission to have the effect of excluding from consideration the interests of producers of competing fuels and competitive methods of transportation.”).

upstream and downstream impacts of pipeline development, for example, on “producers of competing fuels, and competitive transportation interests.”⁶⁹ Similarly, the Senate report also described the amendment as enabling a broader review by the FPC, indicating that “[i]t would . . . authorize the Commission to examine costs, finances, necessity, feasibility, and adequacy of proposed service.”⁷⁰ While Congress was primarily concerned about economic impacts, as we shall see below, the courts interpreted the new section 7 to require a broader-ranging review of all factors bearing on the public interest, including environmental factors.⁷¹

C. *Judicial Precedent on Section 7*

As discussed in Section I.B above, even before enactment of the NGA, the public convenience and necessity standard had been used in numerous other statutes. The standard first appeared in an 1882 Massachusetts statute, which empowered the state Board of Railroad Commissioners to authorize new rail-lines, after certifying that the “public convenience and necessity require construction of [the line] proposed.”⁷² Other states soon enacted their own certification regimes, many of which applied to a range of so-called “public services,” including telecommunications, electricity, and natural gas.⁷³ The operation of those regimes has been the subject of much previous study.⁷⁴ One study, based on a comprehensive review of early regulatory decisions applying the public convenience and necessity standard, found that state regulators universally interpreted the standard as requiring “an inquiry into whether there is a public need for, or whether it would be in the public interest to authorize, the new or expanded services proposed

⁶⁹ *Id.* at 3.

⁷⁰ S. REP. NO. 985-2 (1942).

⁷¹ See *infra* Section I.C.

⁷² 1882 Mass. Acts 208.

⁷³ See William K. Jones, *Origins of the Certificate of Public Convenience and Necessity: Developments in the States 1870–1920*, 79 COLUM. L. REV. 426, 455 (1979) (noting that, by 1920, at least thirty-three states had statutes providing for the issuance of certificates of public convenience and necessity in one or more public service industries).

⁷⁴ See, e.g., *id.*; Ford P. Hall, *Certificates of Convenience and Necessity*, 28 MICH. L. REV. 276 (1930); FORD P. HALL, *THE CONCEPT OF A BUSINESS AFFECTED WITH A PUBLIC INTEREST* (1940); FORD P. HALL, *STATE CONTROL OF BUSINESS THROUGH CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY* (1948).

by the applicant.”⁷⁵ This inquiry was intended to, among other things, ensure “protection of the community against social costs” and thus included consideration of any “environmental damage” likely to result from the provision of services.⁷⁶

Federal regulators charged with issuing certificates of public convenience and necessity have also interpreted that standard as requiring a broad-ranging public interest review. That interpretation has been consistently upheld by the courts. Many of the early court cases arose under the Interstate Commerce Act, which empowered the Interstate Commerce Commission (ICC) to grant certificates authorizing the construction or extension of interstate rail-lines and the provision of certain other transportation services, where required by the public convenience and necessity. The Interstate Commerce Act did not, however, specify any factors to be considered by the ICC when determining whether that requirement had been met.⁷⁷ Given this, the courts interpreted the Interstate Commerce Act as conferring broad discretion on the ICC to determine whether a particular project should be certified, based on its unique characteristics.⁷⁸ The ICC took a case-by-case approach, weighing each project’s costs and benefits⁷⁹ to determine whether it would deliver “material advantages to the public,”⁸⁰ or otherwise be “in the

⁷⁵ Jones, *supra* note 73, at 427 (internal citations omitted).

⁷⁶ *Id.* at 428, 511.

⁷⁷ *See id.*; *see also* Chesapeake & Ohio Ry. Co. v. United States, 283 U.S. 35, 42 (1931) (“There is no specification [in the Interstate Commerce Act] of the considerations by which the Commission is to be governed in determining whether the public convenience and necessity require the proposed construction.”).

⁷⁸ *See* Colorado v. United States, 271 U.S. 153, 166 (1926) (“[T]he making of this determination [i.e., whether a project should be certified] involves an exercise of judgment upon the facts of the particular case.”); *see also* United States v. Detroit & Cleveland Navigation Co., 326 U.S. 236, 241 (1945) (holding that the ICC “has been entrusted with a wide range of discretionary authority” to certify projects and must base its certification decisions on the facts of the particular case); Interstate Commerce Comm’n v. Parker, 326 U.S. 60, 64 (1945) (holding that the Interstate Commerce Act “gives administrative discretion to the Commission to draw its conclusion [as to whether a project is required by the public convenience and necessity] from the infinite variety of circumstances which may occur in specific instances”).

⁷⁹ *See* Colorado, 271 U.S. at 169 (holding that the ICC’s determination “is made upon a balancing of the respective interests”).

⁸⁰ Claiborne-Annapolis Ferry Co. v. United States, 285 U.S. 382, 392 (1932) (holding that the ICC may grant a certificate for a project where “material advantages to the public would result”).

interest of the public.”⁸¹ The public interest was the touchstone for certification decisions under the Interstate Commerce Act, with the U.S. Supreme Court holding that the ICC acts as the ultimate “arbiter” of the public interest when issuing certificates of public convenience and necessity.⁸²

The courts have taken a similar view of FERC’s role in certifying interstate natural gas pipelines, holding that section 7 of the NGA requires it to act as the “guardian” of the public interest.⁸³ Like the ICC, FERC has been held to have “broad discretion” to decide whether certification is in the public interest, based on the specific facts of each case.⁸⁴ According to the Supreme Court, FERC is required “not only to appraise the facts and to draw inferences from them but also to bring to bear upon the problem an expert judgement to determine from its analysis of the total situation on which side of the controversy the public interest lies.”⁸⁵ This necessitates a broad-ranging review, with the Supreme Court holding that FERC must “evaluate all factors bearing on the public interest.”⁸⁶ The Court has, however, recognized certain limits on the scope of FERC’s public interest review.

In *NAACP v. FPC*, the Supreme Court held that, in the context of the NGA, the public interest standard does not give the former FPC (now FERC) “a broad license to promote the general

⁸¹ *Chesapeake & Ohio Ry. Co.*, 283 U.S. at 42 (holding that the ICC is authorized to certify projects “in the interests of the public”).

⁸² *See, e.g., United States v. Pierce Auto Freight Lines, Inc.*, 327 U.S. 515, 535–36 (1946) (holding that, in issuing certificates, the ICC acts as “the arbiter[] of the paramount public interest”); *Detroit & Cleveland Navigation Co.*, 326 U.S. at 241 (holding that the ICC “is the guardian of the public interest in determining whether certificates of convenience and necessity shall be granted”).

⁸³ *See Fed. Power Comm’n v. Transcon. Gas Pipe Line Corp.*, 365 U.S. 1, 7 (1961) (“The Commission is the guardian of the public interest in determining whether certificates of convenience and necessity shall be granted.”); *see also Panhandle E. Pipe Line Co. v. Fed. Power Comm’n*, 386 F.2d 607, 610 (3d Cir. 1967) (holding that “the public interest is always involved” in certification decisions and indicating that “the Commission, as its guardian, must determine in every proceeding whether the certificate applied for is in the public interest or whether that interest calls for some other disposition”).

⁸⁴ *See Minisink Residents for Env’tl. Pres. & Safety v. Fed. Energy Regulatory Comm’n*, 762 F.3d 97, 111 (D.C. Cir. 2014).

⁸⁵ *Transcon. Gas Pipe Line Corp.*, 365 U.S. at 7.

⁸⁶ *Atl. Ref. Co. v. Pub. Serv. Comm’n*, 360 U.S. 378, 391 (1959); *see also Transcon. Gas Pipe Line Corp.*, 365 U.S. at 8 (affirming *Atl. Ref. Co.*).

welfare.”⁸⁷ Rather, it mandates that the FPC take steps to advance the goals of the NGA, chief among which is “encourag[ing] the orderly development of plentiful supplies of . . . natural gas at reasonable prices.”⁸⁸ The Supreme Court described this as the “principal purpose” of the NGA, but recognized that the Act also has several “subsidiary purposes” relating to “conservation, environmental, and antitrust” issues.⁸⁹ The court indicated—in *obiter dicta*—that the FPC “has authority to consider those [subsidiary] issues.”⁹⁰ However, the Court ruled that the FPC lacks authority to consider other issues, which do not have a clear nexus with its regulation under the NGA (e.g., employment discrimination).⁹¹

Subsequent decisions have interpreted *NAACP* as requiring the FPC—and later FERC—to limit its review to factors bearing directly on its exercise of regulatory authority under the NGA.⁹² However, this still leaves FERC with significant latitude to consider a wide variety of factors to determine whether pipeline development would further the NGA’s objectives of ensuring plentiful natural gas

⁸⁷ *NAACP v. Fed. Power Comm’n*, 425 U.S. 662, 669 (1976). While *NAACP* did not specifically discuss the public convenience and necessity standard, other decisions have confirmed that its reasoning applies to section 7 of the NGA. *See, e.g., Minisink Residents for Env’tl. Pres. & Safety*, 762 F.3d at 101 (D.C. Cir. 2014); *Myersville Citizens for a Rural Cmty. v. Fed. Energy Regulatory Comm’n*, 783 F.3d 1301, 1307 (D.C. Cir. 2015); *see also Interstate Commerce Comm’n v. Parker*, 326 U.S. 60, 69 (1945) (holding that, as used in the Interstate Commerce Act, “[p]ublic convenience and necessity should be interpreted so as to secure for the Nation the broad aims of the . . . Act”).

⁸⁸ *NAACP*, 425 U.S. at 669–70.

⁸⁹ *Id.* at 670 n.6.

⁹⁰ *Id.*; *see also Myersville Citizens for a Rural Cmty.*, 783 F.3d at 1307 (“Congress enacted the Natural Gas Act . . . with the principal purpose of encouraging the orderly development of plentiful supplies of natural gas at reasonable prices. . . . Subsidiary purposes include respecting conservation, environmental, and antitrust limitations.” (internal citations omitted)).

⁹¹ *See NAACP*, 425 U.S. at 664 (holding that the FPC does not have authority to address employment discrimination, because there is insufficient “nexus” between the Commission’s “economic regulatory activities and the employment procedures of the utility systems” it regulates).

⁹² *See Pub. Utils. Comm’n of Cal. v. Fed. Energy Regulatory Comm’n*, 900 F.2d 269, 281 (D.C. Cir. 1990) (holding that the former FPC (now FERC) must focus on factors relevant to the “main purposes of the Natural Gas Act,” in which the Commission “fairly may be said to have expertise”).

supplies, while also minimizing any adverse economic or environmental impacts.⁹³

The courts have consistently identified the environmental impacts of pipeline development, including upstream and downstream impacts, as relevant to FERC's determination of public convenience and necessity under section 7 of the NGA. Perhaps most notable is the Supreme Court's 1961 decision in *FPC v. Transcontinental Gas Pipe Line Corp (Transcontinental)*, which concerned the then-FPC's refusal to certify a pipeline intended to transport natural gas from Texas to New York, where it would be used to fuel industrial boilers that were previously fueled by coal.⁹⁴ Supporters argued that the pipeline was required by the public convenience and necessity because, among other things, switching from coal to natural gas would reduce sulfur dioxide emissions and thus improve local air quality.⁹⁵ The FPC acknowledged this potential benefit, but ultimately decided that it was outweighed by the negative impacts of pipeline development, and thus refused to issue a certificate.⁹⁶ While upholding that decision, the Supreme Court emphasized that the potential for improved air quality was a relevant consideration under the public convenience and necessity standard, and "was entitled to [be given] great weight" by the FPC.⁹⁷ Despite this, however, FERC often fails to consider downstream climate impacts when certifying new pipeline projects.⁹⁸

II. FERC'S APPROACH TO NATURAL GAS PIPELINE CERTIFICATION

FERC has long interpreted the public convenience and necessity standard as requiring a case-by-case assessment to

⁹³ See, e.g., *S. Coast Air Quality Mgmt. Dist. v. Fed. Energy Regulatory Comm'n*, 621 F.3d 1085, 1099 (9th Cir. 2010) ("FERC must consider all factors bearing on the public interest consistent with its mandate to fulfill the statutory purpose of the NGA.").

⁹⁴ See *Fed. Power Comm'n v. Transcon. Gas Pipe Line Corp.*, 365 U.S. 1, 8 (1961).

⁹⁵ See *id.* at 4–5.

⁹⁶ See *Transcon. Gas Pipe Line Corp.*, Order Denying Certificate of Pub. Convenience & Necessity, 21 FPC 138, 142 (1959) (holding that "[a]lthough . . . the idea of ameliorating a smoke condition found unpleasant and annoying . . . is an attractive one, more weighty considerations compel denial of the grant" of a certificate for the pipeline).

⁹⁷ *Transcon. Gas Pipe Line Corp.*, 365 U.S. at 29.

⁹⁸ See *infra* Parts II, III.

determine whether, on balance, pipeline development will serve the public interest.⁹⁹ For the last two decades, FERC’s assessment has been guided by the 1999 Policy Statement, which describes the goals of pipeline certification as being to “foster competitive markets, protective captive customers, and avoid unnecessary environmental and community impacts.”¹⁰⁰ To ensure achievement of those goals and consistent with the broad authority conferred by section 7 of the NGA, the 1999 Policy Statement requires certification decisions to be based on a wide-ranging assessment of the need for pipeline development, its benefits, and costs.¹⁰¹ The 1999 Policy Statement envisages that FERC will conduct two separate reviews of each pipeline project—i.e., one focusing on the project’s economic impacts (the economic review) and the other on its environmental consequences (the environmental review)¹⁰²—and consider the findings of both when determining whether the project should be certified.¹⁰³ In April 2018, FERC commenced an inquiry into whether, and if so how, it should revise its approach in light of recent changes in the natural gas industry.¹⁰⁴ That inquiry was ongoing at the time of writing.

A. *FERC’s Economic Review*

Under the 1999 Policy Statement, where a pipeline project is to be developed by an existing pipeline operator, FERC’s economic review must begin with an assessment of whether the project “can proceed without subsidies” from the developer’s existing

⁹⁹ See Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227, ¶ 61,737 (1999).

¹⁰⁰ *Id.* FERC has described the two reviews as “independent,” but indicated that they will occur concurrently. See *id.* ¶ 61,749 (stating that FERC will conduct “an independent environmental review of projects”); see also Order Clarifying Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 90 FERC ¶ 61,128, ¶ 61,397 (2000) (“[E]nvironmental and economic review of a proposed project will . . . proceed concurrently.”).

¹⁰¹ See Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227, ¶ 61,745 (1999).

¹⁰² See *id.* ¶ 61,746.

¹⁰³ See *id.* ¶ 61,743 (“In reaching a final determination on whether a project will be in the public convenience and necessity, the commission performs a flexible balancing process during which it weighs the factors presented in a particular application,” including its “economic” and “environmental impact[s].”).

¹⁰⁴ See Notice of Inquiry, Certification of New Interstate Natural Gas Facilities, 83 Fed. Reg. 18,020 (Apr. 19, 2018).

customers.¹⁰⁵ The developer must establish that the project can “stand on its own financially,” which is typically done by pointing to the existence of pre-construction contracts, under which new customers have subscribed to the additional capacity made available by the project, thus demonstrating market need for it.¹⁰⁶

If satisfied that a pipeline project is financially viable, FERC must then assess its economic impacts.¹⁰⁷ FERC focuses on the potential for adverse impacts on the economic interests of three key groups as follows:

the developer’s existing customers (if any), considering whether the project will lead to an increase in the rates they pay and/or result in a degradation of service;¹⁰⁸
competing pipelines and their existing customers, considering whether the project will lead to unsubscribed capacity on any existing pipeline, which must be paid for by its captive customers;¹⁰⁹ and
landowners and surrounding communities, considering whether the project will affect their property rights, for example, by resulting in the taking of land under eminent domain¹¹⁰
(together the affected groups).

¹⁰⁵ Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227, ¶ 61,745 (1999).

¹⁰⁶ *Id.* ¶ 61,746. In the 1999 Policy Statement, FERC indicated that other evidence could also be relied upon to demonstrate a need for the project, including “demand projections” and “comparison[s] of projected demand with the amount of capacity currently serving the market.” *See id.* ¶61,747. In practice, however, FERC typically relies exclusively on pre-construction contracts to determine project need. This approach has been heavily criticized by environmental groups and others who argue that it may result in the certification of new pipelines that are not needed to meet future natural gas demand and thus not in the public interest. *See, e.g.*, Letter from Montana Cole, Senior Attorney, Nat. Resource Def. Council et al., to Fed. Energy Regulatory Comm’n (Apr. 18, 2018), <https://perma.cc/Y6KT-EHS7>; Letter from Jessica Wentz & Romany Webb, Sabin Ctr. for Climate Change Law, to Fed. Energy Regulatory Comm’n (June 18, 2018), <https://perma.cc/634L-TSJY>; Letter from Jennifer Danis, E. Envtl. Law Ctr., et. al., to Fed. Energy Regulatory Comm’n (June 25, 2018), <https://perma.cc/NKH2-XM5E>; Letter from Maura Healey, Attorney Gen. of Mass., et. al. to Fed. Energy Regulatory Comm’n (June 25, 2018), <https://perma.cc/7KKL-URHF> [hereinafter AG Comments]; *see also* Notice of Inquiry, Certification of New Interstate Natural Gas Pipelines, 163 FERC ¶ 61,042 (2018).

¹⁰⁷ *See Statement of Policy*, 88 FERC, ¶ 61,745.

¹⁰⁸ *Id.* ¶ 61,747.

¹⁰⁹ *Id.* ¶ 61,748.

¹¹⁰ *Id.*

FERC expects developers to take steps to mitigate adverse impacts on the affected groups and evaluates the steps taken as part of its economic review.¹¹¹ If FERC determines that there will be residual adverse impacts (i.e., after mitigation), it weighs those impacts against the project's benefits.¹¹² Only if the project's benefits outweigh its residual adverse impacts can FERC find that it is in the public interest and issue a certificate of public convenience and necessity under section 7 of the NGA.¹¹³

Consistent with FERC's case-by-case approach to pipeline certification, the 1999 Policy Statement does not include an exhaustive list of benefits to be considered in all decisions,¹¹⁴ and merely states:

The type of public benefits that might be shown are quite diverse but could include meeting unserved demand, eliminating bottlenecks, [providing] access to new supplies, lower[ing] costs to consumers, providing new interconnects that improve the interstate grid, providing competitive alternatives, increasing electric reliability, or advancing clean air objectives.¹¹⁵

Despite the broad range of factors listed, the 1999 Policy Statement describes the balancing process as "essentially an economic test" and states that other, non-economic impacts will be considered separately.¹¹⁶ Thus, for example, FERC conducts an

¹¹¹ See *id.* ¶ 61,745.

¹¹² See *id.*

¹¹³ See *id.* The 1999 Policy Statement indicates that, where a project will have significant adverse impacts, FERC will require a "greater . . . showing of public benefits" to balance those impacts. *Id.* ¶ 61,749. In practice, however, FERC often approves projects that have significant adverse impacts without requiring a heightened showing of public benefit. This has, again, prompted criticism from environmental groups and others. See AG Comments, *supra* note 106, at 22.

¹¹⁴ See generally *Policy Statement*, 88 FERC, ¶ 61,749 ("It is difficult to construct helpful bright line standards or tests Bright line tests are unlikely to be flexible enough to resolve specific cases and to allow the Commission to take into account the different interests that must be considered.").

¹¹⁵ *Id.* ¶ 61,748.

¹¹⁶ *Id.* ¶ 61,745 ("[The] balancing . . . of public benefits to be achieved against the residual adverse effects . . . is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission then proceed to complete the environmental analysis where other interests are considered."); see also *id.* at ¶ 61,747 (noting that that non-economic interests, including environmental interests, "may need to be separately considered in a certificate proceeding"). FERC later clarified that the economic and environmental reviews would occur concurrently. See Order Clarifying Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 90 FERC ¶ 61,128, ¶ 61,397

independent environmental review of each project under NEPA.¹¹⁷ FERC has indicated that it considers the results of that environmental review, along with the economic assessment, when determining whether a project is required by the public convenience and necessity.¹¹⁸

B. *FERC's Environmental Review*

Signed into law in 1970, NEPA “makes environmental protection a part of the mandate of every federal agency,” including FERC.¹¹⁹ NEPA seeks to, among other things, ensure that FERC and other federal agencies consider the environmental impacts of their actions and inform the public of those impacts. Under section 102(2)(C) of NEPA, when proposing legislation or undertaking other “major federal actions”¹²⁰ significantly affecting the quality of the human environment, federal agencies must publish a statement (environmental impacts statement or EIS) addressing:

- (i) The environmental impacts of the proposed action;
- (ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented;
- (iii) Alternatives to the proposed action;

(2000) (indicating that FERC “will begin its environmental review at the time an application is filed with the Commission; environmental and economic review of a proposed project will continue to proceed concurrently”).

¹¹⁷ The environmental review occurs currently with, but independently of, the economic review. *See Order Clarifying Statement of Policy*, 90 FERC, ¶ 61,397.

¹¹⁸ *See Policy Statement*, 88 FERC, ¶ 61,743 (“In reaching a final determination on whether a project will be in the public convenience and necessity, the commission performs a flexible balancing process during which it weighs the factors presented in a particular application,” including its “economic” and “environmental impact[s].”).

¹¹⁹ *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109 (D.C. Cir. 1971).

¹²⁰ The term “federal action” includes any action that is undertaken, authorized, or funded by a federal agency. *See Major Federal Actions*, 40 C.F.R. § 1508.18 (2010) (defining the term “[m]ajor federal action” to include “actions with effects that may be major and which are potentially subject to Federal control and responsibility . . . Federal actions tend to fall within one of the following categories: (a) Adoption of official policy, such as rules, regulations, and interpretations . . . (b) Adoption of formal plans, such as official documents prepared or approved by federal agencies which guide or prescribe alternative uses of Federal resources . . . (c) Adoption of programs, such as a group of concerted actions to implement a specific policy or plan . . . (d) Approval of specific projects, such as construction or management activities.”).

- (iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.¹²¹

The scope of this requirement has been discussed extensively by other authors and will not be examined in detail in this paper.¹²² For the purposes of this paper, it is sufficient to note that FERC's approval of pipeline projects constitutes a federal action under section 102(2)(C) of NEPA, meaning that an EIS must be prepared for any project that will significantly affect the environment. FERC regulations indicate that an EIS will "normally" be prepared for "major pipeline construction projects . . . using rights-of-way in which there is no existing natural gas pipeline."¹²³ An EIS may also be prepared for other pipeline projects if FERC determines, based on an initial environmental assessment (EA), that the project will have significant environmental effects.¹²⁴

EISs must be prepared in accordance with regulations issued by the White House Council on Environmental Quality.¹²⁵ Under the regulations, EISs must discuss three types of environmental effects, namely:

- direct effects, which are "caused by the action and occur at the same time and place;"¹²⁶

¹²¹ National Environmental Policy Act of 1969 § 102(2)(c), 42 U.S.C. § 4332(2)(C) (2012).

¹²² For an overview of NEPA and its implementation, see Daniel R. Mandelker, *The National Environmental Policy Act: A Review of Its Experience and Problems*, 32 WASH. U. J. L. & POL'Y 293 (2010).

¹²³ 18 C.F.R. § 380.6(a)(3) (2016).

¹²⁴ See *id.* § 380.5(a)–(b)(1). The 1999 Policy Statement envisages that FERC will only prepare an EA or EIS for projects that its economic analysis shows are in the public interest. See 1999 Policy Statement, *supra* note 17, ¶ 61,746 ("Only when the benefits outweigh the adverse effects on economic interests will the Commission then proceed to complete the environmental analysis where other interests are considered."); see also *id.* ¶ 61,744 (stating that, if FERC finds a project's benefits to outweigh its adverse effects, it will then "proceed . . . to complete an [EA] or [EIS] (whichever is required in the case)").

¹²⁵ See 40 C.F.R. §§ 1500–08 (2019).

¹²⁶ *Id.* § 1508.8(a).

indirect effects, which are “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable;”¹²⁷ and

cumulative effects, which “result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”¹²⁸

FERC views the greenhouse gas emissions associated with pipeline construction and operation as a direct effect of pipeline projects which must be considered under NEPA.¹²⁹ FERC has historically viewed upstream and downstream greenhouse gas emissions—i.e., resulting from the production and consumption of natural gas to be transported via pipeline projects—as falling beyond the scope of its NEPA analysis.¹³⁰ Recently however, the courts have held that downstream emissions are an indirect effect of pipeline projects and thus must be considered under NEPA, at least in some circumstances.¹³¹

The leading case on this issue is *Sierra Club v. FERC*, which concerned the Commission’s approval of three interstate pipelines, intended to transport natural gas from Alabama to Florida (the Southeast Market Pipelines Project).¹³² Noting that the pipelines would be used to deliver natural gas to electric generating units, the D.C. Circuit Court of Appeals concluded that combustion of the gas is not only a reasonably foreseeable consequence of the Southeast Market Pipelines Project, but is its “entire purpose.”¹³³ Moreover, according to the court, it is reasonably foreseeable that natural gas combustion will emit greenhouse gases that contribute to climate change.¹³⁴ The court viewed FERC’s approval of the Southeast Market Pipelines Project as a “legally relevant cause” of the

¹²⁷ *Id.* § 1508.8(b). The regulations provide that “[i]ndirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” *Id.*

¹²⁸ *Id.* § 1508.7.

¹²⁹ *See* Dominion Transmission, Inc., Order Denying Rehearing, 163 FERC ¶ 61,128, ¶¶ 61,695–96 (2018).

¹³⁰ *See infra* Part IV.

¹³¹ *See, e.g.,* *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357 (D.C. Cir. 2017).

¹³² *See id.* at 1363–64.

¹³³ *Id.* at 1372.

¹³⁴ *See id.*

emissions, reasoning that the Commission has authority to consider the environmental impacts of pipeline development as part of its certification decision, and “could deny a . . . certificate on the grounds that the pipeline would be too harmful to the environment.”¹³⁵ Thus, the court held that downstream greenhouse gas emissions are an indirect effect of the Southeast Market Pipelines Project, which must be considered under NEPA.¹³⁶ To meet the requirements of NEPA, FERC must either provide “a quantitative estimate” of the downstream emissions or “explain . . . in detail” why such an estimate cannot be provided.¹³⁷

Following the ruling in *Sierra Club*, until May 2018, FERC’s policy was to estimate downstream greenhouse gas emissions in the EAs and EISs prepared for pipeline projects.¹³⁸ Where FERC lacked information about the intended use of the natural gas transported via a project, it provided an upper-bound estimate of downstream emissions, assuming full combustion of the transported gas.¹³⁹ However, in a three-to-two decision handed down in May 2018 (the May 2018 Order), FERC determined that such estimates should no longer be provided because, in its view, they are “inherently speculative” and, for this and other reasons, are not required by NEPA.¹⁴⁰ FERC interpreted the ruling in *Sierra Club* narrowly, holding that it only requires downstream emissions to be estimated where the Commission has detailed information regarding how the transported natural gas will be used and knows with certainty that it will be combusted.¹⁴¹ Thus, for example, FERC has indicated that it will not consider downstream emissions in situations where natural gas will be delivered to local distribution companies.¹⁴² According

¹³⁵ *Id.* at 1373.

¹³⁶ *See id.* at 1374.

¹³⁷ *Id.* at 1374–75.

¹³⁸ All but one of the EAs or EISs issued by FERC during this period included an estimate of downstream greenhouse gas emissions. The one exception was an EA that was finalized less than one month after the ruling in *Sierra Club*. *See infra* Part III.

¹³⁹ *See* Dominion Transmission, Inc., Order Denying Rehearing, 163 FERC ¶ 61,128, ¶ 61,705 (2018) (La Fleur, dissenting in part).

¹⁴⁰ *Id.* ¶ 61,695. A lawsuit challenging the May 2018 Order was dismissed by the U.S. Court of Appeals for the D.C. Circuit on the grounds that the plaintiff lacked standing; the court did not reach the merits of the case. *See* Otsego 2000 v. Fed. Energy Regulatory Comm’n, 767 Fed. Appx. 19, 21 (D.C. Cir. 2019) (mem.).

¹⁴¹ *See* Dominion Transmission, Inc., 163 FERC, ¶ 61,700.

¹⁴² *See id.*

to FERC, because those companies may sell natural gas to various residential and industrial consumers, it cannot know with certainty how the gas will be used, and whether use will result in additional downstream emissions.¹⁴³ In these circumstances, then, FERC takes the view that downstream emissions are not a reasonably foreseeable effect of pipeline development and thus fall outside the scope of its indirect effects analysis under NEPA.¹⁴⁴

FERC has taken a similar approach to upstream greenhouse gas emissions associated with natural gas production. In its May 2018 Order, FERC indicated that it would only consider upstream emissions as part of its indirect effects analysis where the natural gas transported via a pipeline project is shown to have originated from a specific source and reflects new production, which would not have occurred absent pipeline development (i.e., because there is no other way to transport the gas to market).¹⁴⁵ FERC concluded that, in all other cases, upstream emissions cannot be considered an indirect effect of pipeline development, including because such development does not cause new drilling or the associated emissions.¹⁴⁶ Moreover, according to FERC, upstream emissions are only reasonably foreseeable where the Commission knows the origin of the transported natural gas.¹⁴⁷

The above approach was considered by the U.S. Court of Appeals for the D.C. Circuit in *Birckhead v. FERC*.¹⁴⁸ The case concerned FERC's refusal to assess upstream and downstream greenhouse gas emissions as part of its environmental review of a natural gas compression facility intended to increase the transportation capacity of existing gas pipelines in the southeast. While the case was ultimately dismissed on procedural grounds, the court indicated that it was "troubled" by FERC's refusal to assess upstream and downstream emissions.¹⁴⁹ The court noted that FERC

¹⁴³ See *id.*; see also, FED. ENERGY REGULATORY COMM'N, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR MIDSHIP PIPELINE COMPANY, LLC—MIDCONTINENT SUPPLY HEADER INTERSTATE PIPELINE PROJECT 4-191 (2018), <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14953305>.

¹⁴⁴ See *id.*; see also *Dominion Transmission, Inc.*, 163 FERC, ¶¶ 61,695-96.

¹⁴⁵ See *Dominion Transmission, Inc.*, 163 FERC, ¶ 61,699.

¹⁴⁶ See *id.*

¹⁴⁷ See *id.*

¹⁴⁸ See *Birckhead v. Fed. Energy Regulatory Comm'n*, 925 F.3d 510 (D.C. Cir. 2019).

¹⁴⁹ *Id.* at 519.

justified its refusal by pointing to a lack of information about the source and destination of the transported natural gas, but had failed to request such information from the facility developer, and opined that NEPA “requires the Commission to at least *attempt* to obtain the information necessary to fulfill its statutory responsibilities.”¹⁵⁰ Notably, the court also rejected FERC’s claims that downstream emissions need only be considered where the available information shows that the transported natural gas will be burned at a specific location, and will not replace existing gas supplies or other higher-emitting fuels.¹⁵¹

The decision in *Birckhead* was welcomed by FERC Commissioner Glick,¹⁵² who dissented in part from the May 2018 Order.¹⁵³ In another dissenting opinion, Commissioner La Fleur argued that FERC should estimate upstream and downstream greenhouse gas emissions, even where it lacks information about the specific source and use of the transported natural gas.¹⁵⁴ Similarly, Commissioner Glick also advocated for estimation of upstream and downstream emissions, asserting that FERC “cannot determine whether a natural gas pipeline is in the public interest without considering the effect . . . [it] will have on climate change.”¹⁵⁵ However, as we will see below, FERC rarely considers climate change effects when deciding whether to approve pipeline projects under section 7 of the NGA.

¹⁵⁰ *Id.* at 520.

¹⁵¹ *See id.* at 519–20 (holding that FERC “is wrong to suggest that downstream emissions are not reasonably foreseeable simply because the gas transported by the project may displace existing natural gas suppliers or higher-emitting fuels” and to read *Sierra Club* as holding that “downstream emissions are an indirect effect of a project only when the project’s entire purpose is to transport gas to be burned at specifically-identified destinations”).

¹⁵² *See, e.g.,* Maya Weber, *DC Circuit Upholds US FERC Orders in GHG Case, Offers ‘Misgivings’ on NEPA Effort*, S&P GLOBAL (June 4, 2019), <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/060419-dc-circuit-upholds-us-ferc-orders-in-ghg-case-offers-misgivings-on-nepa-effort> [<https://perma.cc/7Q37-TGTL>].

¹⁵³ *See* Dominion Transmission, Inc., Order Denying Rehearing, 163 FERC ¶ 61,128, ¶¶ 61,705–10 (2018).

¹⁵⁴ *See id.* ¶¶ 61,705–06.

¹⁵⁵ *Id.* ¶ 61,709.

III. TREATMENT OF ENVIRONMENTAL ISSUES IN RECENT FERC CERTIFICATION DECISIONS

Pursuant to the broad authority conferred by section 7 of the NGA, and as described in the 1999 Policy Statement, FERC conducts both an economic and an environmental review of pipeline projects. FERC claims to consider the findings of both reviews when deciding whether a project is required by the public convenience and necessity and thus should be approved under section 7 of the NGA.¹⁵⁶ To test that claim, the author surveyed all major pipeline approvals issued by FERC from 2014 to 2018, reviewing both FERC's approval decision¹⁵⁷ and relevant supporting documents, including any EA or EIS prepared under NEPA.¹⁵⁸ The review indicates that FERC often bases its approval of pipeline projects primarily, if not exclusively, on an assessment of economic impacts and ignores environmental factors.¹⁵⁹

A total of 125 major pipeline projects were approved by FERC during the five years from 2014 to 2018.¹⁶⁰ Each approval decision followed a standard format, beginning with a description of the relevant project, and then proceeding to determine whether it is required by the public convenience and necessity. FERC bases that determination on an assessment of economic factors and rarely considers the environmental effects of pipeline development, unless

¹⁵⁶ See Notice of Inquiry, Certification of New Interstate Natural Gas Facilities, 83 Fed. Reg. 18,020 (Apr. 19, 2018); see also *supra* Part I.

¹⁵⁷ The author reviewed the original approval order issued by FERC for each project. Subsequent FERC orders (e.g., on rehearing) were not reviewed.

¹⁵⁸ The study focused on projects involving ground-disturbing activities. Projects not involving ground disturbance were excluded from the study. The study also excluded projects that were not approved under section 7 of the NGA (e.g., because they were covered by the "blanket" certification regime established in FERC's regulations). Projects denied approval, either under section 7 or the blanket certification regime, were also excluded from the study.

¹⁵⁹ FERC has faced significant criticism regarding its economic assessment, with environmentalists and others asserting that the Commission fails to adequately consider the need for pipeline development and its likely impact on the affected groups' economic interests, as required by the 1999 Policy Statement. See discussion *supra* notes 113, 116.

¹⁶⁰ The 125 pipeline projects were approved in 114 decisions, with twelve of those decisions covering two or more projects. However, all of the multi-project decisions included separate sections outlining FERC's reasons for approving each project, and thus have been treated as separate decisions for the purposes of this analysis.

they have immediate economic consequences.¹⁶¹ A broader range of environmental effects is discussed elsewhere in FERC's decisions, but that discussion invariably follows the economic assessment.¹⁶² At the conclusion of the economic assessment, and before any review of environmental effects, FERC determines whether the public convenience and necessity require approval of the project. That is, FERC *first* concludes that the project should be approved, and *only then* discusses its environmental effects.

In justifying its approval of pipeline projects, FERC typically relies solely on the economic assessment and often makes no mention of the environmental review, suggesting it has no or little bearing on the Commission's decisions. As shown in Table 1 below, of the 125 decisions issued by FERC from 2014 to 2018, just ten (eight percent) expressly stated that project approval was "based on" both the economic assessment and the environmental review.¹⁶³ A further forty-six decisions (thirty-seven percent) stated that approval was "based on" the economic assessment and "subject to" the environmental review.¹⁶⁴ Notably however, only five of those decisions (eleven percent) discussed environmental issues in the section outlining FERC's reasons for approving the project (the approval section) and, in each, the discussion was limited to one to two sentences describing measures taken by the project developer

¹⁶¹ For example, in most recent certification decisions, FERC has considered the amount of land likely to be disturbed by pipeline development and whether or how such disturbance will affect local landowners' economic interests, including their property rights. *See, e.g.*, Order Issuing Certificates and Granting Abandonment, Nexus Gas Transmission, LLC et al., 160 FERC ¶ 61,022, ¶¶ 61,121–22 (2017). FERC only discussed other (non-economic) environmental impacts as part of its "public interest" assessment in fourteen decisions. Generally, however, the discussion was extremely limited. *See, e.g., id.* ¶ 61,122.

¹⁶² Each certification decision issued from 2014 to 2018 included a section titled "Environmental Impact," discussing the findings of the environmental review conducted for the relevant project under NEPA. As discussed further below, key climate change and other environmental impacts are often omitted from the NEPA review, and thus also not addressed in the "Environmental Impact" section of FERC's certification decision. *See infra* Part IV.

¹⁶³ *See, e.g.*, Nat'l Fuel Gas Supply Corp. & Empire Pipeline, Inc., Order Granting Abandonment and Issuing Certificates, 158 FERC ¶ 61,145, ¶ 61,920 (2017).

¹⁶⁴ *See, e.g.*, Transcon. Gas Pipe Line Co., LLC, Order Issuing Certificate, 165 FERC ¶ 61,221 (2018); Spire STL Pipeline LLC, Order Issuing Certificates, 164 FERC ¶ 61,085, ¶ 61,496 (2018).

to mitigate adverse environmental impacts.¹⁶⁵ A similarly brief description of mitigation measures also appeared in the approval sections of nine other decisions (representing seven percent of all decisions).¹⁶⁶ There was no substantive discussion of the findings of FERC’s environmental review in the approval section of any decision. In fact, in almost half of all decisions (forty-eight percent), the approval section did not even mention the environmental review. It appears, then, that FERC frequently ignores environmental issues when deciding whether a project is required by the public convenience and necessity and thus should be approved under section 7 of the NGA.

Table 1: Treatment of Environmental Issues in the Approval Section of FERC’s Certification Decisions (By Year)

		2014	2015	2016	2017	2018	TOTAL
Approvals “based on” both economic analysis and environmental review		0	0	6	4	0	10 (8.0%)
Approvals “based on” economic analysis only	“Subject to” environmental review	8	12	10	10	6	46 (26.8%)
	Otherwise discussing environmental review	2	2	1	3	1	9 (7.2%)
	No discussion of environmental review	9	10	14	12	15	60 (48.0%)
TOTAL		19	24	31	29	22	125

To the extent FERC does consider environmental impacts when approving pipeline projects, it focuses on impacts addressed in its NEPA analysis. FERC has taken a fairly narrow view of the analysis required under NEPA, refusing to consider key climate change impacts, including upstream and downstream greenhouse gas emissions, except in limited circumstances.¹⁶⁷ Table 2 below

¹⁶⁵ See, e.g., Spire STL Pipeline LLC, Order Issuing Certificates, 164 FERC ¶ 61,085, 61,496 (2018).

¹⁶⁶ None of the decisions expressly stated that FERC’s approval of the project was “based on,” or “subject to,” the environmental review.

¹⁶⁷ See *supra* Section II.B.

shows the treatment of greenhouse gas emissions in EAs and EISs issued with respect to pipeline projects approved by FERC between 2014 and 2018 (recent pipeline EAs/EISs).¹⁶⁸ Approximately eighty-four percent of the EAs/EISs fully quantified the direct greenhouse gas emissions resulting from both construction and operation of the project under review.¹⁶⁹ A further twelve percent of the EAs/EISs included a partial quantification, while the remainder discussed emissions in qualitative terms. Notably, however, there was often no discussion—either qualitative or quantitative—of upstream and downstream emissions in the recent pipeline EAs/EISs.

As shown in Table 2 below, just thirty recent pipeline EAs/EISs, twenty-seven percent of the total, quantified downstream emissions, while none quantified upstream emissions. All but one of the EAs/EISs quantifying downstream emissions were finalized in late-2017 or early-2018, after the ruling in *Sierra Club* but before issuance of the May 2018 Order. Prior to this, from late-2016 to mid-2017, upstream or downstream emissions were quantified in several of FERC’s pipeline approval decisions.¹⁷⁰ Nevertheless, FERC maintained that it was not required to consider such emissions and often emphasized the unreliability of its emissions estimates—a point reiterated in the May 2018 Order. Notably, but perhaps unsurprisingly, none of the pipeline approval decisions or associated EAs/EISs issued after the May 2018 Order (and reviewed

¹⁶⁸ While FERC approved 125 pipeline projects during that period, it issued just 111 EAs/EISs, twelve of which covered two or more projects. *See infra* Table 2.

¹⁶⁹ One EIS only quantified emissions from certain aspects of project operation. *See* FED. ENERGY REGULATORY COMM’N, NOS. CP13-73-000 & CP13-74-000, SIERRITA PIPELINE PROJECT: FINAL ENVIRONMENTAL IMPACT STATEMENT 4–225 (2014), <https://perma.cc/BZU3-ZJE9> (quantifying emissions due to pipeline leaks, and noting that “minimal” emissions may also be “released by blowdown events under routine operations or upset conditions,” but failing to quantify those emissions).

¹⁷⁰ Upstream and/or downstream emissions were quantified in ten decisions during this period. *See, e.g.*, Rover Pipeline LLC, Order Issuing Certificates, 158 FERC ¶ 61,109 (2017). Upstream emissions were also quantified in two decisions issued after the ruling in *Sierra Club*. *See* Millennium Pipeline Co., Order Issuing Certificate, 161 FERC ¶ 61,229, ¶¶ 62,305–06 (2017); NEXUS Gas Transmission, LLC, Order Issuing Certificates and Granting Abandonment, 160 FERC ¶ 61,022, ¶ 61,145 (2017).

for this study) quantified upstream or downstream emissions.¹⁷¹ Most did not even discuss upstream and downstream emissions in quantitative terms. In fact, a quantitative discussion of such emissions was only included in twenty percent of all recent pipeline EAs/EISs.¹⁷²

¹⁷¹ Downstream emissions were quantified by Commissioner La Fleur in her concurring opinions in three of the approval decisions issued after the May 2018 Order. *See* Transcon. Gas Pipe Line Co., Order Issuing Certificate, 165 FERC ¶ 61,221 (2018) (La Fleur, concurring); RH energytrans, LLC, Order Issuing Certificates, 165 FERC ¶ 61,218 (2018) (La Fleur, concurring); Tex. E. Transmission, LP, Order Issuing Certificate and Approving Abandonment, 168 FERC ¶ 61,100 (2018) (La Fleur, concurring).

¹⁷² In most cases, the discussion merely highlighted the benefits of switching from coal or oil to natural gas, with FERC emphasizing that this could reduce downstream greenhouse gas emissions.

Table 2: Treatment of Greenhouse Gas Emissions in Recent Pipeline EAs/EISs (By Year)^a

		2014	2015	2016	2017	2018	Total
<i>Direct Emissions</i>							
Quantified	All	11	19	21	23	20	94 (84.7%)
	Construction only	3	1	6	0	0	10 (9.0%)
	Operation only	1	1	1	0	0	3 (2.7%)
Not quantified		2	0	1	0	1	4 (3.6%)
<i>Indirect Emissions</i>							
Quantified	All	0	0	0	0	0	0 (0.0%)
	Upstream only	0	0	0	0	0	0 (0%)
	Downstream only	0	0	1	14	15	30 (27.0%)
Not quantified		17 ^b	21 ^c	28	9	6	81 (73.0%)
TOTAL		17	21	29	23	21	111

^a The table only shows the number of EAs or EISs that quantified greenhouse gas emissions. As a result, the table does not reflect situations in which greenhouse gas emissions were quantified in FERC's certification decision, but not the associated EA or EIS.

^b One EIS quantified the potential emissions reductions that could be achieved if natural gas transported via the project was substituted for oil in heating systems. See FED. ENERGY REGULATORY COMM'N, NOS. CO13-36-000 & CP13-132-000, ROCKAWAY DELIVERY LATERAL & NORTHEAST CONNECTOR PROJECT: ENVIRONMENTAL IMPACT STATEMENT 4-169 (2014), <https://perma.cc/T3C6-KPN3>.

^c One EA quantified the potential emissions reductions that could be achieved if natural gas transported via the project was substituted for coal in electricity generation. See FED. ENERGY REGULATORY COMM'N, NOS. CP14-522-000, ALGONQUIN GAS TRANSMISSION, LLC SALEM LATERAL PROJECT: ENVIRONMENTAL ASSESSMENT 2-88 (2014), <https://perma.cc/LG2W-8223>.

FERC has repeatedly acknowledged that the greenhouse gas emissions associated with pipeline development “contribute

incrementally to climate change.”¹⁷³ However, FERC has consistently refused to assess the significance of that contribution, arguing that there is “no standard methodology to determine how a [pipeline] project’s relatively small incremental contribution to [greenhouse gases] would translate into physical effects on the global environment.”¹⁷⁴ FERC has also refused to monetize the climate damages resulting from project-related emissions, for example, using the social cost of carbon (SCC).¹⁷⁵ The SCC reflects the cost, expressed in dollars per ton, of current and future damage caused by carbon dioxide emissions.¹⁷⁶ It is widely considered the best available estimate of the costs imposed by climate damage,¹⁷⁷ having been developed by an interagency working group, comprising experts from twelve federal bodies, based on the latest scientific and economic modeling.¹⁷⁸ Despite this, however, FERC

¹⁷³ See, e.g., FED. ENERGY REGULATORY COMM’N, No. CP18-6-000, RH ENERGYTRANS, LLC RISBERG LINE PROJECT: ENVIRONMENTAL ASSESSMENT 115 (2018), <https://perma.cc/B2R2-QTZX>.

¹⁷⁴ See, e.g., FED. ENERGY REGULATORY COMM’N, No. CP18-18-000 TRANSCONTINENTAL GAS PIPE LINE COMPANY, L.L.C. GATEWAY EXPANSION PROJECT: ENVIRONMENTAL ASSESSMENT 55 (2018), <https://perma.cc/DRW7-C29C>. The author’s review found that FERC only made a determination with respect to the significance of greenhouse gas emissions in six (5%) of the EAs or EISs issued with respect to pipeline projects approved from 2014 to 2018.

¹⁷⁵ See, e.g., FED. ENERGY REGULATORY COMM’N, No. CP17-458-000 FINAL ENVIRONMENTAL IMPACT STATEMENT FOR MIDSHIP PIPELINE COMPANY, LLC—MIDCONTINENT SUPPLY HEADER INTERSTATE PIPELINE PROJECT, VOLUME I 4-192 (2018), <https://perma.cc/4CAQ-LXAG>.

¹⁷⁶ See EPA, FACT SHEET: SOCIAL COST OF CARBON 1 (2015), <http://bit.ly/2a9QhmW>. The SCC was developed by the Interagency Working Group on the Social Cost of Carbon, which was established by the Obama administration in 2009 and included representatives from eleven federal agencies. See generally INTERAGENCY WORKING GRP. ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2013, rev. 2015), <https://perma.cc/3NCG-6ZQT>; Michael Greenstone et al., *Developing a Social Cost of Carbon for U.S. Regulatory Analysis: A Methodology and Interpretation*, 7 REV. ENVTL. ECON. & POL’Y 23 (2013). In 2017, the Trump administration disbanded the Interagency Working Group and withdrew its estimate of the SCC “as no longer representative of governmental policy.” See Exec. Order No. 13783, 82 Fed. Reg. 16,093, 16,095–96 (Mar. 31, 2017).

¹⁷⁷ See, e.g., Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 375 SCIENCE 6352 (2017).

¹⁷⁸ See generally INTERAGENCY WORKING GRP., *supra* note 176.

has refused to use the SCC because (in its view) the “tool has methodological limitations” that undermine its usefulness.¹⁷⁹

Notwithstanding its refusal to assess significance, in several recent pipeline EAs/EISs, FERC has baldly dismissed pipeline projects’ climate impacts. Many of the EAs/EISs emphasized that the direct greenhouse gas emissions associated with pipeline development represent a trivial proportion of the national or global greenhouse gas inventory.¹⁸⁰ When discussing indirect emissions, FERC often claims that such emissions would occur regardless of pipeline development because natural gas will continue to be produced and used, but transported in other ways.¹⁸¹ FERC also frequently claims that pipeline development will lead to the substitution of natural gas for coal and thus reduce total emissions.¹⁸² Little evidence is, however, provided to support those claims. Indeed, none of the recent pipeline EAs/EISs issued by FERC included a detailed assessment of likely changes in the use of natural gas, coal, and/or other energy sources.

FERC also often fails to consider pipelines projects’ vulnerability to the effects of climate change. Just over half (fifty-one percent) of recent pipeline EAs/EISs discussed the likely effects of climate change on the project area and, of those, only seven (six percent of the total) analyzed how those effects would impact the project or identified measures to mitigate any adverse impacts (see Table 3 below).

¹⁷⁹ FED. ENERGY REGULATORY COMM’N, *supra* note 175, at 4–192.

¹⁸⁰ *See, e.g.*, FED. ENERGY REGULATORY COMM’N, No. CP14-529-000 TENNESSEE GAS PIPELINE COMPANY, L.L.C. CONNECTICUT EXPANSION PROJECT: ENVIRONMENTAL ASSESSMENT 119 (2015), <https://perma.cc/YEH8-7489> (asserting that greenhouse gas “emissions from the construction and operation of the proposed Project would be negligible compared to the global [greenhouse gas] emission inventory”).

¹⁸¹ *See, e.g.*, Dominion Transmission, Inc., Order Denying Rehearing, 163 FERC ¶ 61,128, ¶ 61,695 (2018) (claiming that upstream and downstream greenhouse gas emissions “will likely occur regardless of the Commission’s approval of the . . . Project”).

¹⁸² *See, e.g.*, FED. ENERGY REGULATORY COMM’N, *supra* note 180, at 119 (stating that “burning natural gas results in less [carbon dioxide-equivalent] compared to other fuel sources (e.g., fuel oil or coal)”).

Table 3: Treatment of Climate Change Impacts in Recent Pipeline EAs / EISs (By Year)

		2014	2015	2016	2017	2018	TOTAL
Climate change discussed	Impacts in project area	7	8	17	15	10	57 (51.4%)
	Project's vulnerability to impacts	1	0	0	5	0	6 (5.4%)
	Mitigation measures	0	0	0	4	0	4 (3.6%)
Climate change not discussed		10	13	12	8	11	54 (48.6%)
TOTAL^a		17	21	29	23	21	111

^a The totals listed reflect the number of EAs and EISs issued in each year. The totals may not equal the sum of each column because some EAs or EISs fall into more than one category.

IV. INTEGRATING ENVIRONMENTAL CONSIDERATIONS INTO FERC'S CERTIFICATION PROCESS

As the foregoing discussion shows, while FERC claims to consider both economic and environmental impacts when certifying interstate natural gas pipelines, it frequently justifies its certification decisions solely on economic grounds. It appears, then, that environmental factors are often given little or no weight in FERC's certification decisions. Even where they are taken into account in decisionmaking, FERC typically ignores key climate change impacts associated with pipeline development, including upstream and downstream greenhouse gas emissions. This has prompted criticism from some scholars (including this author), who assert that FERC should evaluate upstream and downstream emissions as part of its certification process because doing so would provide valuable information about the climate impacts of pipeline development, leading to improved decisionmaking.¹⁸³ This Article goes further, arguing that consideration of upstream and downstream emissions

¹⁸³ See, e.g., WEISSMAN & WEBB, *supra* note 25, at 46 (asserting that consideration of upstream and downstream emissions would "increase awareness of natural gas' potential climate impacts" and thus "encourage more climate-sensitive decision-making"); HEIN ET AL., *supra* note 25, at 5 (asserting that, by considering upstream and downstream emissions, FERC can "limit legal risk . . . while better informing policymakers and the public about the environmental effects of proposed projects").

is not only good policy, but a legal requirement under section 7 of the NGA.

Under section 7 of the NGA, before certifying any pipeline project, FERC must find that it “is or will be required by the public convenience and necessity.” The courts have repeatedly held that, when making its finding, FERC *may* consider the environmental impacts of pipeline development, including upstream and downstream impacts. There is, however, limited case law addressing whether FERC *must* do so.¹⁸⁴ The case law that does exist indicates that such impacts are central to FERC’s determination of whether pipeline development is required by the public convenience and necessity. That view is supported by the language and history of section 7 of the NGA, as well as FERC’s own orders interpreting and applying the section. Thus, FERC arguably cannot fulfill its statutory obligation under section 7 of the NGA unless it considers the full climate change and other environmental impacts of pipeline development, including upstream and downstream impacts.

A. Requirement to Assess Environmental Impacts

For over a century, the public convenience and necessity standard has been used in various federal and state statutes governing the certification of public services.¹⁸⁵ The courts have consistently interpreted those statutes as requiring certifying agencies to determine whether provision of the relevant service is in the public interest based on a comprehensive assessment of its benefits and costs.¹⁸⁶ Thus, in the context of the NGA, the Supreme

¹⁸⁴ See generally *Pub. Utils. Comm’n v. Fed. Energy Regulatory Comm’n*, 900 F.2d 269, 281 (D.C. Cir. 1990) (indicating that it is “entirely plausible” that Congress intended the former FPC (now FERC) to consider “environmental and conservation factors” but failing to rule on whether such consideration is required); *Minisink Residents for Env’tl. Pres. & Safety v. Fed. Energy Regulatory Comm’n*, 762 F.3d 97, 101 (D.C. Cir. 2014) (observing that FERC’s 1999 Policy Statement indicates that it “will” consider environmental impacts); *Meyersville Citizens for a Rural Cmty. v. Fed. Energy Regulatory Comm’n*, 783 F.3d 1301, 1309 (D.C. Cir. 2015) (noting that FERC’s 1999 Policy Statement listed “advancing clean air objectives” as a potential benefit of pipeline development that FERC may consider when approving projects); *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (indicating that FERC “could deny a . . . certificate on the grounds that the pipeline would be too harmful to the environment”). Cf. HEIN ET AL., *supra* note 25, at 9.

¹⁸⁵ See *supra* Section I.C.

¹⁸⁶ See *supra* Section I.C.

Court has held that FERC must “evaluate all factors bearing on the public interest” when making certification decisions.¹⁸⁷ Of course, in *NAACP*, the Supreme Court emphasized that FERC’s decision cannot take into account every factor affecting the general public welfare.¹⁸⁸ However, it must be based on a review of all factors relevant to achieving the purposes of the NGA, which the Supreme Court described as “encourag[ing] the orderly development of plentiful supplies of natural gas at reasonable prices,” while also taking into account “conservation, environmental, and antitrust” issues.¹⁸⁹

The courts have repeatedly upheld FERC’s authority to consider the environmental impacts of pipeline development, including upstream and downstream impacts, when certifying projects under section 7 of the NGA. Most notably, in *Transcontinental*, the Supreme Court identified the air quality impacts of downstream natural gas use as a relevant factor to be taken into account in certification decisions.¹⁹⁰ More recently, in *Sierra Club*, the U.S. Court of Appeals for the D.C. Circuit affirmed that “FERC could deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment” due to its downstream impacts.¹⁹¹ As discussed in Section II.B above, the court in *Sierra Club* held that FERC violated NEPA by failing to adequately consider the environmental impacts of the Southeast Market Pipelines Project, including downstream greenhouse gas emissions.¹⁹² The court’s decision rested on a finding that, under the NGA, FERC had “statutory authority to act” on information

¹⁸⁷ *Atl. Ref. Co. v. Pub. Serv. Comm’n*, 360 U.S. 378, 391 (1959).

¹⁸⁸ *See NAACP v. Fed. Power Comm’n*, 425 U.S. 662, 669 (1976).

¹⁸⁹ *Id.* at 669–70 n.6 (holding that the former FPC, now FERC, “has authority to consider conservation, environmental, and antitrust questions”).

¹⁹⁰ *See Fed. Power Comm’n v. Transcon. Gas Pipe Line Corp.*, 365 U.S. 1, 8 (1961) (declaring that the potential for improved air quality due to the substitution of natural gas for coal “was entitled to [be given] great weight” by the then FPC).

¹⁹¹ *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357, 1373 (D.C. Cir. 2017). Other cases have also reaffirmed FERC’s authority to consider environmental impacts when certifying interstate natural gas pipelines. *See, e.g.*, *S. Coast Air Quality Mgmt. Dist. v. Fed. Energy Regulatory Comm’n*, 621 F.3d 1085, 1098–99 (9th Cir. 2010); *Minisink Residents for Env’tl. Pres. & Safety v. Fed. Energy Regulatory Comm’n*, 762 F.3d 97, 101–02 (D.C. Cir. 2014); *Meyersville Citizens for a Rural Cmty. v. Fed. Energy Regulatory Comm’n*, 783 F.3d 1301, 1307–09 (D.C. Cir. 2015).

¹⁹² *See Sierra Club*, 867 F.3d at 1374–75.

regarding downstream emissions when deciding whether to certify the project. That finding was affirmed in *Birckhead*, with the D.C. Circuit again holding that FERC's certification decision may take into account environmental factors, including downstream emissions.¹⁹³

While the above decisions clearly establish that FERC is *authorized* to consider environmental impacts in its certification decisions, they do not address whether it is *required* to do so. The case law does, however, establish such a requirement with respect to the other subsidiary issues identified in *NAACP*. In *Pittsburgh v. FPC*, the U.S. Court of Appeals for the D.C. Circuit held that the former FPC (now FERC) must consider any potential anti-competitive effects of pipeline development when issuing certificates under section 7 of the NGA.¹⁹⁴ The D.C. Circuit reasoned that federal antitrust laws evince a national policy in favor of competition which can be advanced through FPC regulation under the NGA.¹⁹⁵ Indeed, as was recognized in *NAACP*, avoiding anticompetitive outcomes is a subsidiary purpose of the NGA.¹⁹⁶ Thus, the D.C. Circuit held that anticompetitive issues are directly related to the FPC's exercise of regulatory authority under the NGA, and must be taken into account in its decisions.¹⁹⁷

Environmental issues have a similarly direct bearing on regulation under the NGA. The courts have recognized that other federal statutes—most notably NEPA—establish a clear federal policy in favor of protecting the environment, which FERC plays a role in effectuating through its exercise of regulatory authority under the NGA.¹⁹⁸ In this regard, the courts have emphasized that FERC regulates activities, including pipeline development, which “necessarily and typically have dramatic natural resource impacts.”¹⁹⁹ Again, under the NGA, a key purpose of regulation is

¹⁹³ See *Birckhead v. Fed. Energy Regulatory Comm'n*, 925 F.3d 510, 519 (D.C. Cir. 2019).

¹⁹⁴ See *Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 754 (D.C. Cir. 1956).

¹⁹⁵ See *id.*; see also *Pub. Util. Comm'n v. Fed. Energy Regulatory Comm'n*, 900 F.2d 269, 281 (D.C. Cir. 1990).

¹⁹⁶ See *NAACP v. Fed. Power Comm'n*, 425 U.S. 662, 670 (1976).

¹⁹⁷ See *Pittsburgh*, 237 F.2d at 754; see also *Pub. Util. Comm'n*, 900 F.2d at 281.

¹⁹⁸ See *Pub. Util. Comm'n*, 900 F.2d at 281.

¹⁹⁹ *Id.*

to avoid adverse environmental outcomes.²⁰⁰ Given this, and applying the reasoning in *Pittsburgh v. FPC*, there is a strong argument that FERC is legally required to consider environmental impacts when determining whether to issue a certificate of public convenience and necessity under section 7 of the NGA.

B. *Scope of the Required Environmental Assessment*

Seemingly accepting the requirement to consider environmental issues when certifying interstate natural gas pipelines, in its 1999 Policy Statement, FERC described its role under section 7 of the NGA as being to “balance demonstrated market demand against potential adverse environmental impacts.”²⁰¹ In recent certification decisions, issued between 2014 and 2018, FERC has focused on direct environmental impacts that have immediate economic consequences, such as land disturbance.²⁰² For example, one recent decision noted that pipeline construction would disturb agricultural land by preventing its use for one growing season and thus impose financial losses on the landowner.²⁰³ However, the decision did not explore the economic consequences of other direct environmental impacts, such as construction-related greenhouse gas emissions. Those consequences have been entirely ignored by FERC in recent certification decisions.²⁰⁴

Research shows that greenhouse gas emissions and associated climate change impose significant economic costs, including on the agricultural sector, with rising temperatures causing a significant decline in crop yields.²⁰⁵ FERC often seeks to justify its refusal to

²⁰⁰ See *NAACP*, 425 U.S. at 670. See also *Myersville Citizens for a Rural Cmty. v. Fed. Energy Regulatory Comm’n*, 783 F.3d 1301, 1307 (D.C. Cir. 2015).

²⁰¹ Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227, ¶ 61,737 (1999); see also *id.* ¶ 61,743 (“In reaching a final determination on whether a project will be in the public convenience and necessity, the Commission performs a flexible balancing process during which it weighs the factors presented in a particular application,” including “the proposal’s . . . environmental impact”).

²⁰² See *supra* Part III.

²⁰³ *Spire STL Pipeline LLC*, 164 FERC ¶ 61,085, ¶ 61,495 (2018) (order issuing certificates).

²⁰⁴ See *supra* Part III.

²⁰⁵ See, e.g., Frances C. Moore, *New Science of Climate Change Impacts on Agriculture Implies Higher Social Cost of Carbon*, 8 NATURE COMM’NS 1607 (2017).

consider such impacts by asserting that the emissions associated with individual pipeline projects represent a trivial proportion of global or national totals. That does not, however, mean that individual projects have no impact. On the contrary, given the already high concentration of greenhouse gases in the earth's atmosphere, any addition—regardless of size—will cause significant damage and impose significant costs.²⁰⁶ There is no rational basis for distinguishing between those impacts and others routinely considered by FERC. While the impacts of greenhouse gas emissions may be felt over longer periods, that does not prevent their consideration under section 7, which expressly requires assessment of the “future” public convenience and necessity.²⁰⁷ The courts have emphasized the need to assess the convenience and necessity of the public as a whole, so the fact that emissions impacts may be widespread does not excuse FERC from considering them.²⁰⁸ Nor does the fact that precise impacts may be somewhat speculative,²⁰⁹ since the courts have long recognized that the public convenience and necessity assessment will often involve a degree of “prophecy,” but that “uncertainties need [not] paralyze the Commission into inaction.”²¹⁰ FERC is also not prevented from acting merely because other agencies (e.g., EPA) exercise regulatory control over emissions. In this regard, the courts have recognized that FERC's assessment will often encompass issues for

²⁰⁶ The damage caused by each additional ton of emissions depends, in large part, on the existing atmospheric concentration of greenhouse gases. As greenhouse gases build up in the atmosphere, additional emissions cause greater damage.

²⁰⁷ Natural Gas Act § 7(c), 15 U.S.C. § 717f (2012); *see also* *Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 752 (D.C. Cir. 1956) (describing FERC's role as being “to examine the relevant past and present and then to exercise a rational judgment upon that data to ascertain the public convenience and necessity in the *reasonable foreseeable future*”) (emphasis added).

²⁰⁸ *See, e.g., R.R. Comm'n v. Shupee*, 57 S.W.2d 295 (Tex. App. 1933) (holding that the public convenience and necessity standard requires consideration of impacts on “the public as distinguished from that of an individual or any number of individuals”).

²⁰⁹ Various tools can be used to predict the likely impact—both locally and globally—of greenhouse gas emissions. For a description of available tools, see JESSICA WENTZ, *ASSESSING THE IMPACTS OF CLIMATE CHANGE ON THE BUILT ENVIRONMENT UNDER NEPA AND STATE EIA LAWS* 15–26 (2015), <https://perma.cc/M6MQ-S2UB>.

²¹⁰ *United States v. Detroit & Cleveland Navigation Co.*, 326 U.S. 236, 241 (1945).

which “other agencies are more directly responsible and more competent,” but that does not prevent their consideration by the Commission.²¹¹ While FERC may have limited expertise with respect to climate impacts, it may make use of various tools and datasets developed by other agencies, including the SCC metric.²¹² FERC cannot, therefore, avoid its obligation to assess climate impacts by pointing to a lack of information. Given the above, and to ensure a balanced assessment of pipeline projects, FERC must consider the economic impacts of project-related greenhouse gas emissions. However, as explained in Section IV.A, FERC cannot base its assessment solely on economic impacts. Thus, FERC must do more than merely consider direct, economically significant environmental effects. As we shall see below, FERC historically considered a much broader range of environmental effects as part of the section 7 assessment, but has recently sought to constrain the scope of its review. Specifically, in the May 2018 Order, FERC indicated that it would only consider those environmental impacts required to be analyzed under NEPA.²¹³ FERC has therefore refused to consider upstream and downstream greenhouse gas emissions, which it views as falling beyond the scope of its NEPA analysis (except in limited circumstances).²¹⁴ This is not only inconsistent with FERC’s treatment of other upstream and downstream impacts in NGA decisions, but also contrary to decades of case law interpreting the public convenience and necessity standard.

Both the history of the public convenience and necessity standard, as well as the case law interpreting it, suggest that section 7 of the NGA imposes an independent obligation to consider

²¹¹ *Pittsburgh*, 237 F.2d at 754–55 (holding that FERC may consider issues relating to national defense, despite the fact that they fall within the competence of other agencies, and stating that “[t]he Commission would . . . do well to respect the views of such other agencies as to those” issues); *see also* Glick & Christiansen, *supra* note 25, at 43 (“Agencies throughout the federal government regulatory consider climate change in their decision-making process . . . even though those agencies cannot establish a federal climate policy.”).

²¹² *See* HEIN ET AL., *supra* note 25, at 37–38. For a discussion of other available tools, *see generally* Burger & Wentz, *supra* note 24, at 183–87, tbls. A-1, A-2, A-3.

²¹³ *See* Dominion Transmission, Inc., Order Denying Rehearing, 163 FERC ¶ 61,128, ¶ 61,695 (2018) (stating that FERC is “not aware of any basis that indicates the Commission is required to consider environmental effects that are outside of our NEPA analysis . . . in our determination of whether a project is in the public convenience and necessity under section 7”).

²¹⁴ *See id.* ¶¶ 61,699–701.

environmental impacts, which is not constrained by NEPA. As discussed in Part II.C above, pre-NGA statutes incorporating the public convenience and necessity standard were universally interpreted as requiring a broad-ranging public interest assessment, taking into account environmental and other social costs.²¹⁵ That interpretation was known to, and implicitly approved by, Congress when it enacted section 7 of the NGA.²¹⁶ In its early decisions under section 7, FERC's predecessor—the FPC—recognized the need to consider various “public interest factors not specifically mentioned” in the NGA, including the “effect of pipeline location on areas traversed.”²¹⁷ In this regard, the FPC emphasized that “[t]he construction of natural gas [pipeline] facilities can affect scenic, historic, and recreational values, which are factors to be considered . . . by the Commission in determining whether facilities proposed to be constructed are required by the public convenience and necessity.”²¹⁸

The FPC did not limit its review to the localized environmental impacts of pipeline development, but also considered upstream and downstream effects, which it viewed as directly relevant to its public convenience and necessity assessment.²¹⁹ Congress clearly agreed, as evidenced by the fact that, in 1942, it amended section 7 of the NGA to enable greater consideration of downstream effects.²²⁰ The Supreme Court weighed in on the amendment in 1944 in *FPC v. Hope Natural Gas Co.*, wherein Justice Jackson opined that the NGA “require[s the FPC] to take account of the ultimate use of the [natural] gas.”²²¹ Consistent with this view, in subsequent decisions, the FPC—and later FERC—emphasized the need to consider downstream environmental impacts associated with natural gas use.²²²

²¹⁵ See generally Jones, *supra* note 73, at 427–28.

²¹⁶ See *supra* Section I.B.

²¹⁷ Statement of General Policy and Amendments to Section 157.14(a) of the Regulations Under the Natural Gas Act, 44 FPC 47 (1970).

²¹⁸ Proposed Rule Making: Rights-of-Way Routes and Aboveground Facilities of Natural Gas Companies, 34 Fed. Reg. 9348 (June 14, 1969).

²¹⁹ See *supra* Section I.B.

²²⁰ See *supra* Section I.B.

²²¹ *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 639 (1944) (Jackson, J., dissenting).

²²² See, e.g., Order Clarifying Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 90 FERC ¶ 61,128, ¶ 61,398 (2000) (“In considering the potential adverse environmental impact of a project, the

FPC decisions issued in the 1950s and 1960s routinely discussed how natural gas transported via a proposed pipeline project would be used and assessed the air quality impacts of that use.²²³ In a key decision in 1966, the FPC refused to certify a pipeline intended to deliver natural gas to electric generators in Los Angeles, in part because there was insufficient evidence that switching from oil- to gas-fired generation would improve local air quality.²²⁴ The FPC held that the air quality impact of natural gas use is “one of the most important factors” to be considered under section 7 of the NGA.²²⁵ The FPC expressly rejected claims that environmental statutes enacted after the NGA make other entities solely responsible for addressing air pollution or “deprive [it] of its statutory authority and responsibility [under the NGA] to make an independent determination” as to whether increased natural gas use would help “to combat air pollution.”²²⁶

There is nothing to suggest that the FPC viewed the effect of NEPA as somehow different from that of other environmental statutes. On the contrary, following the enactment of NEPA, the FPC continued to consider downstream air quality impacts when assessing the public convenience and necessity under section 7 of the NGA.²²⁷ The FPC focused on conventional air pollutants that have localized impacts, such as sulfur dioxide and nitrogen dioxide, but greenhouse gases are equally relevant to the section 7 assessment. Like sulfur dioxide and nitrogen dioxide, greenhouse gases have been classified as “air pollutants” under the federal Clean

Commission will continue to take into account as a factor for its consideration the overall benefits to the environment of natural gas consumption.”).

²²³ See, e.g., *Transcon. Gas Pipe Line Corp.*, 21 FPC 138 (1959) (order denying certificate of public convenience and necessity); *Transwestern Pipeline Co.*, 36 FPC 176 (1966) (order granting and denying certificates).

²²⁴ See *Transwestern Pipeline Co.*, 36 FPC at 190 (“[W]e cannot conclude on the present record that additional amounts of natural gas should be certificated because of the effects of such certification upon the air pollution situation.”).

²²⁵ *Id.* at 213.

²²⁶ *Id.* at 185.

²²⁷ See generally, Statement of General Policy and Amendments to Section 157.14(a) of the Regulations Under the Natural Gas Act, 44 FPC 47, 48 (1970) (listing “air pollution” as an issue to be considered by the FPC in its certification decisions). FERC has also recognized that air pollution is a relevant factor to be taken into account. See Statement of Policy, Certification of New Interstate Natural Gas Pipelines, 88 FERC ¶ 61,227, ¶ 61,748 (1999) (indicating that “advancing clean air objectives” is a potential benefit of pipeline development that should be considered by FERC).

Air Act, with the Environmental Protection Agency finding that they “endanger public health and welfare.”²²⁸ Again, while the impacts of greenhouse gas emissions may be less localized and immediate, that does not prevent their consideration under section 7. Nor does the fact that precise impacts are difficult to predict with certainty.

CONCLUSION

Under section 7 of the NGA, when approving the construction or expansion of interstate natural gas pipelines, FERC must ensure that pipeline development “is or will be required by the present or future public convenience and necessity.”²²⁹ This has been held to require a broad-ranging review, in which FERC must “evaluate all factors bearing on the public interest” to determine whether pipeline development would further the NGA’s objectives of ensuring plentiful natural gas supplies, while avoiding conservation, environmental, and antitrust issues.²³⁰ To make that determination, FERC considers the need for pipeline development, its benefits, and costs. FERC undertakes two separate reviews, one of which focuses on the economic impacts of development, and the other on its environmental consequences. However, FERC’s environmental review often ignores key climate change impacts associated with pipeline development, including the potential for upstream and downstream greenhouse gas emissions.²³¹ Even where those impacts are reviewed, they appear to have little bearing on FERC’s decision to approve pipeline development, which is typically justified solely on economic grounds.²³²

Debate is currently raging—both among scholars and in the courts—over the extent to which the climate impacts of pipeline development must be considered under NEPA. The D.C. Circuit recently weighed in, ruling in *Sierra Club* that NEPA requires consideration of downstream greenhouse gas emissions, at least in

²²⁸ Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

²²⁹ Natural Gas Act § 7(c), 15 U.S.C. § 717f(e) (2012).

²³⁰ See *Atl. Ref. Co. v. Pub. Serv. Comm’n*, 360 U.S. 378, 391 (1959); see also *supra* Section I.C.

²³¹ See *supra* Part III.

²³² See *supra* Part III.

some circumstances.²³³ The courts have not addressed whether the NGA imposes a separate requirement to consider upstream or downstream emissions. However, the language and history of the NGA, the case law interpreting it, and FERC's own statements regarding its implementation, support the existence of such a requirement. Indeed, FERC cannot fulfil its statutory obligation under the NGA to ensure pipeline development is required by the public convenience and necessity without considering upstream and downstream emissions. FERC must, therefore, change its approach to evaluating pipeline projects. Going forward, before approving any project, FERC must be satisfied that its economic benefits outweigh its potential climate change and other environmental impacts.

²³³ See *Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d 1357, 1374 (D.C. Cir. 2017).